

2015-2020

Permian Basin Comprehensive Economic Development Strategy (CEDS)



VISION Statement

Permian Basin is a region enjoying economic growth and prosperity through industry diversification, strategic planning and collaborative regional partnerships.

Prepared by the Permian Basin Regional Planning Commission (PBRPC)
Economic Development District

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About the CEDS

What is the CEDS?

A comprehensive economic development strategy (CEDS) is designed to bring together the public and private sectors in the creation of an economic roadmap to diversify and strengthen regional economies. The CEDS should analyze the regional economy and serve as a guide for establishing regional goals and objectives, developing and implementing a regional plan of action, and identifying investment priorities and funding sources. A CEDS integrates a region's human and physical capital planning in the service of economic development. Integrated economic development planning provides the flexibility to adapt to global economic conditions and fully utilize the region's unique advantages to maximize economic opportunity for its residents by attracting the private investment that creates jobs for the region's residents. A CEDS must be the result of a continuing economic development planning process developed with broad-based and diverse public and private sector participation, and must set forth the goals and objectives necessary to solve the economic development problems of the region and clearly define the metrics of success. Finally, a CEDS provides a useful benchmark by which a regional economy can evaluate opportunities with other regions in the national economy.

CEDS Process

In developing the CEDS, PBRPC engaged in four distinct project phases to ensure the data and strategies included within the document are robust and comprehensive, and the individual interests and views of our regional stakeholders are represented within the Strategy.

Phase I: Inventory of Economic Development Initiatives/Strategies and Data Analysis

To create a foundation of knowledge from which to develop the CEDS, PBRPC (1) inventoried and reviewed existing economic development initiatives and strategies underway in communities throughout the region, and (2) conducted a rigorous analysis of regional economic and demographic data.

Phase II: Engagement of CEDS Strategy Committee

PBRPC engaged the CEDS Strategy Committee to (1) contribute to the body of knowledge amassed in Phase I, (2) to validate the analysis and findings, and (3) to outline appropriate goals and benchmarks to guide the implementation and evaluation of the CEDS over its lifecycle. PBRPC made a concerted effort to ensure the region's diversity is reflected in the membership of the CEDS Strategy Committee

During the period spanning September 2014 through January 2015, the Committee contributed to the CEDS development through a series of roundtable discussions, one-on-one phone and in-person interviews, email correspondence, surveys, and social media engagement. These engagement points provided valuable information on a range of economic development strategies and topics to include economic clusters, innovation, transportation, quality of place, human capital, and economic diversification and resiliency.

Phase III: Stakeholder Feedback

To ensure the CEDS is representative of the interests and concerns of the Permian Basin region and its constituents, the PBRPC provided an opportunity for public comment by (1) developing the CEDS online at www.pbceds.com and posting a link to the CEDS online at www.pbrpc.org, (2) providing regional elected officials and economic development representatives a copy of the CEDS via email or courier, (3) placing an “open for public comment” notice in regional print or online publications, and (4) making the document available on-site at the PBRPC offices at 2910 La Force Blvd. Midland, Texas 79706. All comments received will be considered by PBRPC and the CEDS Strategy Committee and incorporated as deemed appropriate.

Phase IV: Implementation and Monitoring

Upon completion and submission of the CEDS to the Economic Development Administration (EDA) U.S. Department of Commerce, the PBRPC will implement actionable steps outlined in the Strategy. PBRPC will also monitor and report the progress of the region in meeting goals and benchmarks to the EDA, Strategy Committee, and interested stakeholders. Reports will be given annually at a minimum during the CEDS life cycle (2015 - 2020). The PBRPC will be proactive in facilitating coordination and progress of the region toward meeting its economic development goals and benchmarks, as appropriate, to maximize opportunities for the region.

Executive Summary

VISION Statement

Permian Basin is a region enjoying economic growth and prosperity through industry diversification, strategic planning and collaborative regional partnerships.

In order to achieve this vision, the Permian Basin Regional Planning Commission and Comprehensive Economic Development Strategy Committee developed the following plans focusing on five key areas for the region: Education and Workforce Development, Transportation and Infrastructure, Housing, Industry Diversification and Resiliency, and Regional Marketing and Outreach.

The 17-county Permian Basin is economically unique compared to peer regions throughout the state and nation. The heavy concentration of Oil and Gas deposits has attracted investment and spurred more than a century of sustained exploration and production activity that dwarfs that of most regions, even those considered to be primarily energy economies. Throughout its history, the region has reaped significant economic benefits from its natural resources, developing a robust and mature export-oriented energy cluster that has generated both tremendous individual wealth and significant Gross Regional Product (GRP). State, regional, and local governments, economic developers, and investors have capitalized on these assets and built an infrastructure to support the unique local economy.



- The region's transportation system is robust, multi-modal and efficient. The Permian Basin is characterized by a well-developed (if taxed) roadway system that includes two east-west interstates (I-10 and I-20), numerous state highways, and county/local roads that effectively facilitate transit of goods and raw materials. The rail system is mature, with the ability to support

the material import/export demands of local industry. The passenger and cargo capacity of Midland International Air and Space Port is substantial and supported by a strong network of local air fields.

- The Permian Basin's education and workforce development system is also strong. The region's Workforce Development Board maintains strong, collaborative partnerships with secondary and post-secondary school systems. These partnerships allow for the preparation of an emerging workforce ready for career opportunities and pathways supported by local industry.

Economic development in the region, however, is challenging. Oil and gas prices are subject to a range of external pressures including foreign production and demand, economic cycles, regulatory policy, tariffs, weather, etc. The resultant volatility has led to a boom-bust cycle of economic activity for the region that is challenging at both its highs and lows - taxing capacity on the high side and challenging maintenance on the low. Fierce competition for labor to supply workforce demands during booms has resulted in significant wage pressures and high labor costs that impact all industries. Likewise, influxes of labor to supply industry during periods of high-production activity has resulted in housing demand exceeding supply, particularly for multi-family and temporary housing. This excess of demand inflates housing costs for all residents of the Permian Basin, a challenge not easily tackled when building housing stock to meet peak demand risks a glut of housing with high maintenance costs during down-cycles. Such upward wage pressures also have deleterious effects not only on business, but on the community and quality of place as well. These factors have become impediments to recruitment of teachers, peace officers, and other public servants in the Permian Basin region.

Regional stakeholders have responded to these challenges by attempting to mitigate the boom-bust cycle effect and promote economic resiliency through economic diversity. While communities throughout the 17-county region are unique in their composition and assets, and each prioritizes development of different industries, the region by and large has targeted and coordinated to develop a regional competency in 6 Key Industry Clusters:

1. Energy: Fossil Fuel and Renewable Energy Production/Environmental Technology
2. Biomedical and Life Sciences
3. Aerospace and Aviation/Space Exploration
4. Transportation and Logistics
5. Manufacturing
6. Agribusiness, Food Processing, and Technology



In addition, communities throughout the Permian Basin region have made concerted efforts to spur innovation and entrepreneurship as means for promoting economic diversity and sustainability. The

global economy has been flattened by technology and residents of the Permian Basin can compete globally, bringing revenue back to the region.

Entrepreneurship is not constrained to technology and export, however. In an economy characterized by high degrees of support from industries outside of the region, opportunities exist for enterprising individuals to supply needs locally versus importing required goods and services. In either the former or the latter case, communities throughout the region are making key investments to grow local business and promote entrepreneurship.

Promoting economic diversity and growth, however, creates new challenges and compounds existing ones. In a region already characterized by competition for skilled labor and chronically low unemployment, growth in additional skilled industry clusters exacerbates the shortages.

The region's workforce, is both young and low-skilled, with overall educational attainment rates lower than the state and nation¹. While the region's education and workforce infrastructure is substantial, continued efforts are needed to ensure the workforce, particularly youth, are acquiring the skills and credentials needed to compete in today's and tomorrow's economy.

In addition, the migration of residents out of the Permian Basin region, to metropolitan areas both in and out of Texas, compromises the ability of the region to supply the workforce needed for continued economic expansion. The impacts of this migration can be even more acute for small communities throughout the region who continue to see their young and talented leave. Permian Basin communities via initiatives designed to improve the Quality of Place to retain talent and/or attract new talent are combating this trend.

While the Permian Basin's economic assets are admirable, there are many challenges to regional economic development efforts that must be met for the region to continue to prosper. Economic developers and stakeholders must unite around clear goals and objectives, in addition to coordinating initiatives designed to maximize benefits to the region. Coordinated efforts for the duration of the 2015-2020 CEDS will target the following goal areas:

1. Education and Workforce Development
2. Transportation and Infrastructure
3. Housing
4. Industry Diversification and Resiliency
5. Regional Marketing and Outreach

¹ <https://infogr.am/permian-basin-vitals>

² http://www.ara.com/Offices/testing_pecos.htm

Effectiveness of efforts will be measured annually according to performance measures established by the Steering Committee in the formation of the 2015-2020 CEDS.

CEDS Action Plan

Successful implementation of the Permian Basin CEDS is dependent on the ability of the economic development agencies and stakeholders to coordinate strategies and investment of resources. Collaboration between affected organizations will allow the region to capitalize on its unique economic and labor assets, which in turn will maximize the return on investment to the community. Historically, the region has excelled in meeting this challenge.

The PBRPC and the CEDS Strategy Committee will work cooperatively to achieve the CEDS goals and objectives. Performance Measures as established by the Strategy Committee will be met using the region's tradition of collaboration and coordination to align interdependent planning and development components. These components include economic development, workforce development, transportation, housing, infrastructure, etc.

PBRPCs Role:

PBRPC, as a regional economic development stakeholder and lead agency for implementation of the CEDS, will play several key roles to ensure achievement of CEDS goals and objectives and achieve performance measures.

1. Promote regionalism in economic development to ensure communities are fully capitalizing on regional assets and building regional competencies.
2. Promote local economic development initiatives that leverage the unique assets of communities within the region, even if it is not consistent with regional strategy, if it benefits the individual community.
3. Supply timely and actionable economic and labor market data to regional decision makers.
4. Provide technical assistance as needed to ensure communities have knowledge of and access to the resources needed to prosper.
5. Promote collaboration and coordination among economic development stakeholders, facilitate relationships and bring together key stakeholders with common interests.

Municipality and County Government Role:

1. Conduct sufficient planning in the form of strategic plans, comprehensive plans, master plans, etc. to support responsible economic growth.
2. Develop and maintain the infrastructure necessary to facilitate economic development
3. Establish effective land use strategies and plans, including development of sufficient housing stock

Economic Development Corporation Role:

1. Invest in building economic and workforce competencies for the region (location quotient >1).
2. Recruit, retain, and grow business that capitalizes on regional assets.
3. Promote economic resiliency for the region via economic diversification.

Workforce Investment Board Role:

1. Align workforce initiatives to support industry clusters targeted for development by government and economic development stakeholders.
2. Implement workforce programs that support local industry hard and soft skill needs.
3. Promote entrepreneurship.

Education System Role (Secondary and Post-Secondary):

1. Offer educational programs that support industry clusters targeted for development by government and economic development stakeholders.
2. Promote skill attainment and credentialing that support local industry needs.
3. Promote entrepreneurship via educational programs.

Strategy Committee

The Strategy Committee is the entity identified by the Planning Organization as responsible for developing, revising, or replacing the CEDS. The Strategy Committee must represent the main economic interests of the region, and must include Private Sector Representatives (defined in 13 C.F.R. § 300.3, with respect to any for-profit enterprise, as any senior management official or executive holding a key decision making position, or that person's designee) as a majority of its membership.

The Permian Basin CEDS Strategy Committee is comprised of the PBRPC Economic Development Board of Directors, and is advised by regional stakeholders representing a diverse range of interests. More than 50% of Committee membership are engaged in private industry, either by business ownership or employment, in addition to their elected public office and local community volunteer role. Members include:

Andrews County, Mayor Flora Braly

Andrews County, Judge Richard H. Dolgener

Borden County, Judge Ross Sharp

Crane County, Judge John Farmer - (2014-15 Secretary-Treasurer)

Dawson County, Judge Foy O'Brien

Ector County, Mayor David Turner

Ector County, Judge Susan Redford

Ector County, Joe Hurt

Gaines County, Judge Lance Celander

Gaines County, Mayor Brace Huse

Glasscock County, Judge Kim Halfmann

Howard County, Judge Mark Barr

Loving County, Judge Skeet Jones - (2014-15 Vice Chairman)

Martin County, Judge Corky Blocker

Midland County, Judge Mike Bradford

Midland County, Mayor Jerry Morales

Pecos County, Judge Joe Shuster

Reeves County, Judge W.J. Bang, MD

Terrell County, Judge Santiago Flores

Upton County, Mayor Sherry Phillips

Upton County, Judge Bill Eyler

Ward County, Judge Greg Holly - (2014-15 Chairman)

Winkler County, Judge Bonnie Leck

Goals and Objectives

Goal 1: Education and Workforce Development

Ensure that the Permian Basin offers employers a qualified workforce well prepared to meet the needs of existing and future industry within the region.

1. Coordinate with regional education agencies to better align curricula to meet employer needs
2. Strengthen partnership with Workforce Solutions Permian Basin to ensure the region's workforce development resources align with and support regional economic development initiatives
3. Support development of programs that promote entrepreneurial skills in the workforce
4. Promote efforts to effectively highlight the skilled human capital in the region to recruit, grow, and retain regional businesses

Goal 2: Transportation and Infrastructure

Explore and promote comprehensive planning solutions to ensure the Permian Basin transportation infrastructure meets the needs of employers and citizens.

1. Support and connect communities with state and federal funding agencies
2. Promote development of public transportation alternatives
3. Support public transportation usage campaigns to promote connectivity between communities throughout the region
4. Assist communities in accessing resources to improve roadways, rail systems, and airport capacity
5. Promote effective transportation planning through coordination with regional agencies including MOTOR MPO and the PBRPC Rural Transportation Board. Efforts will include identifying funding opportunities, as well as reviewing and providing feedback for the region in regards to TXDOT plans and projects.

Goal 3: Housing

Support the expansion of housing options throughout the Permian Basin region.

1. Encourage development of sufficient affordable housing within the region
2. Promote multi-family developments
3. Encourage communities to utilize revitalization and beautification programs to improve existing housing stock
4. Support regional communities in planning infrastructure improvements needed for new residential development

Goal 4: Industry Diversification & Resiliency

Work as a region united to attract and expand industry and entrepreneurship throughout the Permian Basin.

1. Assist communities in implementing economic development strategies that grow and attract businesses in targeted industry clusters
2. Assist small communities in developing micro-clusters that capitalize on their unique community assets and provide a competitive advantage
3. Promote initiatives that foster growth in export industries that generate wealth for the region
4. Identify opportunities to develop entrepreneurship programs and resources
5. Promote development of knowledge based economic clusters
6. Encourage small business growth by coordinating with regional Small Business Development Centers to improve access of residents

Note: The PBRPC's *Regional Homeland Security Strategic Implementation Plan* includes strategies for mutual aid and regional support by local, state and federal agencies to address potential disasters, including those threatening interruptions to the local infrastructure systems and the economic development activities and businesses. The PBRPC EDD program participates in completing a Threat & Hazard Identification and Risk Assessment to identify a natural, technological or human caused disaster, along with risk management and the desired outcomes and impacts necessary for optimal operational coordination. The EDA program is identified as a participant and leader in the incident management activities in the event of a disaster. It provides necessary input to assess the core capabilities necessary for continuity of operations, as well as the impacts of disasters related to economic loss and business interruption.

Goal 5: Regional Marketing and Outreach

Work as a region united to promote the Permian Basin as a great place to work and live.

1. Assist communities in developing economic development strategies that capitalize on their unique characteristics and improve their Quality of Place

PBRPC Projects, Programs, and Activities

1. Publish annual report summarizing the Permian Basin region's progress toward meeting goals and objectives outlined in CEDS
2. Maintain PBCEDS.com website to encourage transparency in implementation of CEDS
3. Provide regional municipalities and economic development partners with learning and networking opportunities

4. Assist regional municipalities and economic development partners in applying for Economic Development Administration (EDA) and other Federal/State agency funds to support CEDS goals and objectives

Performance Measures

PBRPC and the CEDS Strategy Committee will use the following performance measures to evaluate performance of the 2015-2020 CEDS in meeting stated goals.

Education and Workforce Development

1. Educational Attainment of population age 25+
2. Number of post-secondary program completers in the region
3. Number of Individual Training Accounts (ITA) completed via Workforce Solutions

Transportation and Infrastructure

1. Public Transportation programs
2. Airport Capacity
3. Rail Capacity
4. Miles of highway/interstate

Housing

1. Increase in housing stock
2. Increase in multi-family units

Industry Diversification & Resiliency

1. Job Growth
2. Number of New Establishments
3. Venture Capital Investment

Regional Marketing and Outreach

1. Participation in recruiting events out of region
2. Business development meetings with prospects

Quality of Place

1. Public and private investments in public use facilities and cultural/arts facilities
2. Expansion of water resources available to communities

The following measures will be used to infer **PBRPC's impact on regional economic development.**

1. Promote entrepreneurship programs and small business resources throughout the region
2. Requests for assistance completed for communities in the region
3. Economic Development presentations in the region

SWOT

In the compilation of the 2009-2014 CEDS, the PBRPC conducted a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis to lay the foundation for CEDS strategies, goals, and objectives. The SWOT analysis was completed via secondary research and stakeholder feedback garnered through interviews, round table discussions, webinars, online surveys, online SWOT forum polls, and social media.

You may view the SWOT analysis from the 2008-2013 Permian Basin CEDS at <http://www.pbceds.com/2008-swot.html> to identify contrasts and changes in the economic environment between the previous and current CEDS.

2015-2020 Permian Basin CEDS SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> • Logistics: Location on IH-20 and IH-10 / Mature State Hwy System • Oil and Gas Production Potential • Regional Oil and Gas Competency • Potential Production - Horizontal Drilling Techniques • Availability of Land • Accessibility of Rail Service • Private Sector Investments in Rail Service • Numerous Intermodal Business Parks • CREZ Transmission Capacity • Abundance of Alternative Energy Resources • Midland International Air and Space Port / Differentiation • Regional Marketing Plan - Higher Ground of Texas • Regional Transportation Advocates / MOTRAN, Ports to Plains, etc. • Industrial Water Supply • Strong Collaboration / Communities, EDCs, Workforce Solutions, Education, etc. • Post-Secondary Education Infrastructure • Innovation and Commercialization Potential / Private and Public Sector Expertise • Emerging Biomedical and Life Sciences Competency / Health Science Center • Stable Weather • Small Business Administration and Entrepreneurship Assets 	<ul style="list-style-type: none"> • Deterioration of State, County, and Local Roads - Heavy Truck Traffic • Low Unemployment / Little Slack in Labor Force • Strong Competition for Oil and Gas Production Skill Set (competitive with other target industry clusters, i.e. manufacturing, transportation/logistics, and agribusiness) • Available Skilled Workforce • Attractiveness of "Quality of Life" to Younger Generation • Availability of Affordable Housing • Availability of Multi-Family Housing • Lower Relative Educational Attainment • Capacity to Monitor/Enforce Environmental Regulations (primarily rural communities) • Utility Infrastructure for Expansion • Skilled Trade Labor in Rural Areas (i.e. electricians, plumbers, etc.) • Rural Areas Lose Industry and Workforce to Midland/Odessa • Competitiveness between Communities for Economic Developments • Lack of Funds to Support Dedicated Economic/Community Development (rural) • Transportation Infrastructure between Communities not Adequate (support workforce mobility)

Opportunities	Threats
<ul style="list-style-type: none"> • Diversification of Economic Base • Enhance Business Retention and Expansion Initiatives • Strengthen Business Recruitment Strategies • Leveraging Strong Transportation/Logistics Capacity for Diversification • Secondary/Post-Secondary Education Collaboration to Promote Early Skill Attainment and Credentialing (i.e. dual credit, articulation, stackable credentials, etc.) • Enhanced Alternative Energy Production • Organized Effort to Promote R&D Competency • Development of Commercial Space Cluster (unique asset in space port designation) • Educate Federal and State Government Agencies about the Impact of Permian Basin Economic Activity (tax revenue) and the Region's Needs • Promote and Develop Tourism to the Region • Strengthening of Entrepreneurship Assets (low barriers to global competition) • Addition of "Quality of Life" Assets • Enhanced Coordination of Region Economic Development Planning • Strengthen Out of Region Recruitment • Enhanced Public Transportation Alternatives 	<ul style="list-style-type: none"> • Volatility in Oil and Gas Prices (supply and demand changes) • Regulatory Changes / Energy Production • Increase in Active Oil and Gas Plays (i.e., emergence of Eagle Ford Shale and others) • Competition with Other Regions for Skilled Workforce • Funding Allocations to Permian Basin Region from State/Federal Agencies • Growth Outpacing Infrastructure Development • Economic Contraction Resulting in Infrastructure Abundance (i.e., vacancy rates at hotels and rental properties) • Deterioration of City/County Buildings • Lack of Housing Threatens Economic Development (lack of large national housing builders in Permian Basin) • Changes to Immigration Policy / National • Availability of Water Resources

Regional Vitals

In the evaluation of Regional Vitals, the PBRPC and the Strategy Committee examined the strength and composition of key economic development asset categories. These assets provide economic developers and communities the opportunity to differentiate from other regions, and to develop and demonstrate competitive advantages that promote economic expansion.

Key asset categories for which we examine the regional vitals include:

1. Geography
2. Demographics
3. Innovation and Entrepreneurship
4. Transportation Infrastructure
5. Education and Workforce
6. Quality of Place

Demographics

View a comparative demographic analysis at <https://info.gr.am/permian-basin-vitals>. The analysis contains population, household income, educational attainment, and housing data for the Permian Basin region, Midland, Odessa, and the State of Texas.

Innovation and Entrepreneurship

"I STARTED MY BUSINESS IN 1991 IN MY HOUSE. MOST OF OUR CUSTOMERS SEND OUR CANDY AS CORPORATE GIFTS. WE'VE SHIPPED EVERYWHERE, INCLUDING DUBAI AND EVEN TO A NUCLEAR SUB! NOW WE'VE MOVED INTO A NEW COMPLEX IN DOWNTOWN MIDLAND THAT'S OUR FACTORY, OUR OFFICES, ONE OF OUR TWO STORES, AND A TOURIST ATTRACTION TOO."
- SUSIE HITCHCOCK-HALL, OWNER SUSIE'S SOUTH FORTY CANDY FACTORY

In an increasingly knowledge based economy, regions must create environments that foster innovation and promote entrepreneurship to be competitive in the global economy.

The Permian Basin maintains critical innovation assets, including a concentration in Oil and Gas production (technology driven cluster) and the Texas Tech Health Science Center. Both of these regional assets create opportunities for patents, discovery, commercialization, and venture capital investment. In addition, the region is home to economic development agencies and colleges/universities that actively invest in entrepreneurship, providing the Permian Basin an opportunity to capitalize on the knowledge and talent of its citizens.



Innovation Catalysts

In recent years, community leaders have made significant investments that promise to unlock innovation potential within the Permian Basin economy during the coming years.

The City of Pecos is home to the 5800-acre Pecos Research and Testing Center², a Center for applied research and testing for explosives, pavement, standard and specialty vehicles. While the facility, now operated by Applied Research Associates, Inc. (ARA), has been in operation for more than 45-years, it continues to be an important catalyst for innovation in the region.

Pecos Economic Development Corporation is focused on developing a Small Business Technology

² http://www.ara.com/Offices/testing_pecos.htm

Center to assist existing businesses and offer the community a number of technology services (April 2010 Annual Report).

The Sul Ross Small Business Development Center³ in Alpine, Texas is a entrepreneurship and small business development asset for surrounding communities and their businesses.

The University of Texas Permian Basin Small Business Development Center⁴ provides counseling, technical assistance, training workshops, and reference resources for small businesses and entrepreneurs.

The City of Pecos is home to the Texas A&M Agricultural Research Center⁵, a research and development asset for the region.

The McCamey Economic Development Corporation⁶, as a component of its downtown revitalization efforts, purchased and renovated a downtown commercial property to serve as a small business incubator. The incubator model provides low cost office space for small businesses, leveraging collective efforts of entrepreneurs in the community.

The University of Texas Permian Basin is home to the Center for Energy and Economic Diversification (CEED).⁷ The CEED is home to an economic diversification program, small business development center, and the petroleum industry alliance, programs designed to spur economic development within their focus area. Many of the technology innovations that impact the oil and gas industry, among others, originate from this Center.

The University of Texas Permian Basin (UTPB)⁸ continues to grow enrollments and program offerings locally. UTPB offers programs that spur innovation across the region's target industries and hopes to build a new and 80,000 square-foot School of Engineering Building to accommodate growth of the school.⁹ UTPB also offers programs that promote entrepreneurship, including an entrepreneurship business minor¹⁰.

³ <http://sbdc.sulross.edu/>

⁴ <http://www.utpbsbdc.org/>

⁵ <http://lubbock.tamu.edu/pecos-location/>

⁶ <http://mccameycity.com/>

⁷ www.utpb.edu/ceed

⁸ www.utpb.edu

⁹ http://www.mrt.com/news/article_f81ea1b4-6a15-11e4-a6fc-bfadf201ca15.html

¹⁰ <http://www.utpb.edu/audience/future-students/undergraduate-programs>

Transportation Infrastructure

"THE PERMIAN BASIN HAS AND CONTINUES TO MAKE A SIGNIFICANT CONTRIBUTION TO THIS STATE (TEXAS). WE ARE COMMITTED TO WORKING WITH STATE, REGIONAL, AND LOCAL OFFICIALS TO FINDING THE FUNDING STREAMS NECESSARY TO ENSURE THAT THOSE OF US IN THESE ENERGY PRODUCING AREAS CAN MEET OUR NEEDS, BOTH FOR TODAY AND THE FUTURE"

- MOTRAN CHAIRMAN J.D. FAIRCLOTH

The Permian Basin region boasts a mature and robust transportation infrastructure comprised of a strong network of Interstate and State Highways, rail lines, airports, and the Midland International Air and Space Port. The region's mature infrastructure sets it apart from other regions, particularly those heavily invested in oil and gas exploration such as the Eagle Ford Shale in south Texas. The transportation infrastructure, however, has been heavily taxed as the latest energy boom has increased heavy truck traffic on state and local roadways to unprecedented levels.

The increase in traffic has compromised the condition of regional roadways, particularly city and county roadways, and challenged local governments to maintain road conditions and ensure public safety. Local municipal and county governments have responded accordingly, but the rapid deterioration of roadways, significant capital requirements, and limited construction capacity have proven to be significant challenges. In addition, the region's rail system has required significant investment to ensure sufficient capacity and access (rail spurs) to support energy production, manufacturing, and distribution industry growth.

Passenger and cargo air transportation reached all-time highs at Midland International Air and Space Port in 2014, indicative of a regional increase that has impacted air fields from Midland International, to smaller municipal airstrips in the region. While communities have made significant investment in air fields in recent years to improve capacity, continued sustained investment is needed to accommodate increase oil and gas production and industrial diversification, including the emergence of a high-tech Space Port cluster.

Rail, likewise, is being taxed at unprecedented levels with the recent oil and gas boom cycle. Rail capacity has improved significantly in recent years as private and public investments have increase rail lines, spurs, transloading facilities, etc., but capacity is frequently cited as an impediment to continued economic development. New investments to improve capacity and access will be required to supply the demand for movement of goods in and out of the Permian Basin region, particularly as fracking practices increase and diversification into manufacturing and transportation/logistics takes hold.

A detailed discussion of the strong advocacy assets of the region, and an overview of the existing transportation infrastructure is available at <http://www.pbceds.com/transportation-infrastructure.html>

Education and Workforce

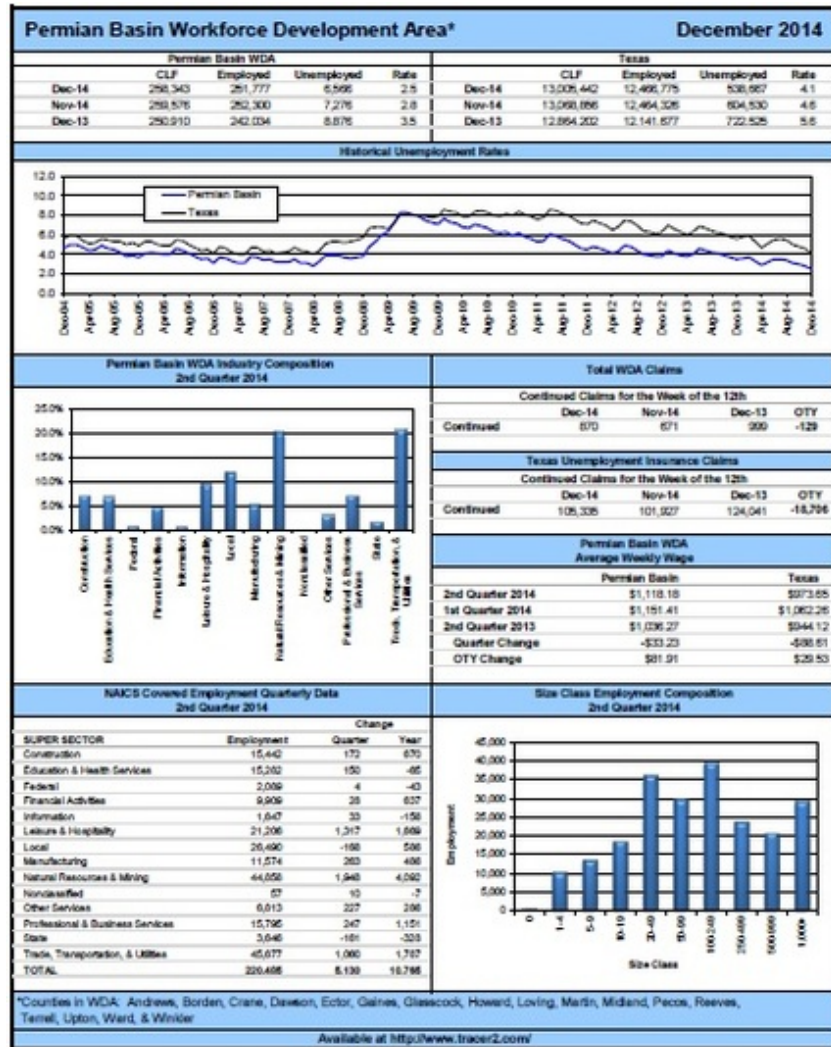
"AS A WORKFORCE BOARD, OUR GOALS ARE TO MAKE SURE OUR POPULATION IS EDUCATED WITH GOOD SKILL SETS AND TO FILL THE SEATS AT GOOD EDUCATION PROGRAMS LIKE THOSE AT OUR COMMUNITY COLLEGES AND UNIVERSITIES - PARTICULARLY THOSE THAT ARE NON-TRADITIONAL FOR FEMALES. WE MUST FOCUS ON GROWING OUR OWN AND IMPROVING OUR COMMUNITY."
 - WILLIE TAYLOR, EXECUTIVE DIRECTOR OF WORKFORCE SOLUTIONS PERMIAN BASIN

Education and Workforce Challenges

Stakeholders in the Permian Basin region are faced with significant challenges in developing the workforce to meet industry demand, particularly in the boom phase of oil and gas production - the region is inextricably tied to the demands of the oil and gas industry due to its heavy concentration of petroleum and natural gas producing wells. Boom phase labor demands outweigh local labor supply, leading to an influx of workers from outside the region. This migration has the secondary effect of straining capacity local housing stock and temporary housing, inflating rents, cost of living, and leading to inflationary wage pressures.

Pressures are compounded by the composition of the local economy. Five of the six consensus target industry clusters for the region are heavily non-traditional female workplaces with significant overlap in skill set requirements and staffing patterns (see Economic Clusters section of this report). The lone exception is the Biomedical and Life Sciences cluster which employs a 79.0% female workforce. The resultant competition for labor force, likewise, adds inflationary pressure to wages.

To provide stability and continue to foster an environment conducive to economic growth for the



region, workforce development and education proprietors must respond by focusing on the two of the most significant challenges facing regional employers and economic development efforts: (1) the lack of available workforce and (2) skill deficiencies within the labor force.

Workforce Availability: Lack of workforce availability was consistently cited by regional economic development stakeholders, employers, and Workforce Solutions Permian Basin as a constraint on economic growth and limiter in the ability to attract and grow industry in the region. Availability is limited by persistently low unemployment rates (2.8% for the Permian Basin Workforce Development Area in November 2013), and heavy reliance on a male able-bodied workforce (5 of the 6 driver industry clusters are characterized by workforces that are more than 70% male). Regional shortages are localized and exacerbated by continued strong economic growth, as well as a lack of a sufficient public transit system to mobilize the workforce throughout the region. According to Texas Workforce Commission Local Area Unemployment Statistics, the Labor Force for the Permian Basin expanded 23.8% during the past 5 years (ending November 2014), well below the 29.8% growth in employment during the same timeframe.

Skill Deficiencies: In the 21st century economy, all region's must aggressively prepare the workforce with the basic workplace and technical skills required by modern industry. This challenge is compounded for the Permian Basin which is characterized by (1) high technical skill set requirements (see Economic Clusters section of this report) and (2) chronically low unemployment and limited slack in the labor pool (in November 2014, Midland MSA and Odessa MSA boasted the 4th and 12th lowest unemployment rate respectively of any MSA nationwide at 2.3% and 2.8%¹¹). The challenge facing the region is steep because it suffers from low educational attainment rates relative to the state and nation. Modeled data from Economic Modeling Specialists Inc. (EMSI) indicates only 21.9% of Permian Basin residents age 25+ possess an associates degree or higher, versus 32.7% for the Texas. Likewise, 25.1% of residents age 25+ possess less than a high school diploma, versus 19.1% statewide.

The region is responding to these challenges by developing progressive workforce and education programs and partnerships that (1) develop the transferable and technical skills necessary to be competitive within its Adult Labor Force and (2) provide for rapid skill attainment and credentialing for area youth in secondary and post-secondary education and training programs.

Partnerships such as the P-16 West Texas Regional Council¹² are prevalent in the region. The P-16 initiative in the Permian Basin recognized the need for an integrated effort of representatives from local ISDs, higher education, private sector and government to collaborate and plan for workforce preparedness to meet present and future industry demands.

Education Service Center Region 18 partnered with the PBRPCEDD and numerous other community - serving institutions in the region on the Connect Southwest Project, a \$12 million effort funded by the

¹¹ <http://www.bls.gov/web/metro/laummtrk.htm>

¹² <http://www.texasp-16.com>

U.S. Department of Commerce.¹³ The Project goal is to deploy new, high-speed middle-mile infrastructure across the area as part of a public-private collaboration with five regional broadband service providers. The project also aims to deploy or improve videoconferencing capabilities at local K-12 and higher-education institutions and work with the Texas Department of Public Safety to link its locations in Midland, Alpine, and Fort Stockton to the new network.

Regional ISDs have also done an admirable job of responding the challenges of implementing Texas House Bill 5¹⁴, called a "game changer" by Workforce Solutions Permian Basin Executive Director Willie Taylor, by partnering with regional industry to contextualize learning experiences for secondary school youth.

Additionally, the region has developed a mature and robust education and training infrastructure providing its citizens the opportunities for advancement in the local and global economies. A detailed discussion of this infrastructure is available at <http://www.pbceds.com/education--workforce.html>

¹³ <http://www2.ntia.doc.gov/grantee/region-18-education-service-center>

¹⁴ <http://www.tasanet.org/domain/175>

Quality of Place



Quality of place is a strong asset for communities throughout the Permian Basin region. The region is a heterogeneous mix of communities unique in their history, heritage, amenities, and resources, but each making significant investments in enhancing the Quality of Place for their citizens. From large metros like Midland and Odessa to small municipalities like McCamey, communities throughout the region

are striving to create a compelling and unique brand that capitalizes on local assets, makes their individual community stand out as unique, and improves the lives of residents.

Below is an inventory of many of the projects that are recently planned and underway, promising to enhance the lives of citizens within the Permian Basin region.

Several communities within the Permian Basin region have active Downtown Development and Revitalization efforts under way, including Midland, Odessa, McCamey, and Big Spring.

- The Midland Development Corporation has committed 30% of its revenue to improving the Central Business District (CBD)¹⁵. The investment is meant to improve the "Quality of Place" to help attract and retain educated talent. This investment will stimulate private and public reinvestment, spur mixed use development, and further develop downtown Midland as a center of commerce for the region. Oil and gas companies with a presence in the CBD have renovated a number of buildings in the CBD in recent years, and new retail establishments, a 140 unit apartment complex, and two level public parking facility are a sample of recent successful CBD projects.
- The Odessa Economic Development Corporation offers Downtown Economic Development Incentives¹⁶ as part of its Main Street Project.
- The McCamey Economic Development Corporation is focused on reviving 5th street downtown. The EDC has purchased and redeveloped one commercial property as a small business incubator and plans to purchase another for a similar effort.

¹⁵ <http://midlandtxedc.com/downtown-development>

¹⁶ <http://odessatex.com/local-incentives>

- The Big Spring Economic Development Corporation has prioritized downtown redevelopment, and had success leveraging a more than \$35 million private sector angel investment to retain and refurbish the Settles Hotel¹⁷.
- The Pecos Economic Development Corporation¹⁸ is implementing recommendations to develop Historic District from the UTSA Department of Architecture and Planning.

A \$163,110,000 Midland ISD School Building Bond¹⁹ was passed on November 6, 2012 for "building and renovations at the elementary level" to improve 24 existing campuses and construct 3 new elementary campuses.

The Wagner Noel Performing Arts Center²⁰ opened in 2011. The Midland venue ranked #66 worldwide on the list of the top 200 theatre venues by Pollstar Magazine and approximately 127,000 people attended an event at the facility in 2014²¹.

The Colorado River Municipal Water District completed a 45 mile \$142 million pipeline from Ward County to the distribution center in Odessa capable of supplying 30 million gallons of water daily for use by Odessa, Midland, Big Spring, Stanton, and Snyder. The Odessa City Council approved a resolution to authorize a \$38 million expansion²² to increase capacity (from current total capacity of 45 million gallons per day) to 65 million gallons per day.

The T-Bar Ranch Pipeline²³, a 67 mile waterline from Winkler County to Midland County, came online in May 2013 adding 30-40 million gallons of water daily to the Midland water supply, easing the need for continued water restrictions. The project represents an approximately \$200 million investment by the city of Midland.

Monahans leverages and actively promotes the Monahans Sandhills State Park²⁴ to promote tourism as well as being an amenity for area residents. The Park is home to an 800 acre equestrian area and sand toboggans and disks, for "surfing" on the sand dunes, can be rented at park headquarters.

In September 2014, Ector County leased Gardendale Park to the Gardendale Community Association²⁵, a newly formed citizen-run 501(c)(3), for management and maintenance of the park. The 501(c)(3) has the ability to accept donations for park improvements, the first of which came in the form of 10 trees donated by Texas Electric and the Wonderful Texas Trees Foundation.

¹⁷ <http://www.chron.com/news/article/PRN-SHDC-to-Acquire-Historic-Settles-Hotel-1582124.php>

¹⁸ <http://pecosedc.com/tabid/528/Default.aspx>

¹⁹ <http://www.midlandisd.net/Page/16779>

²⁰ <http://wagnernoel.com/>

²¹ <http://www.newswest9.com/story/28005994/wagner-noel-performing-arts-center-has-banner-year>

²² <http://moderator.droughtreporter.unl.edu/RSSfeed/ImpactView/31141>

²³ <http://www.newswest9.com/story/24412897/t-bar-ranch-pipeline-to-water-midland-for-decades>

²⁴ <http://tpwd.texas.gov/state-parks/monahans-sandhills>

²⁵ http://www.oaoa.com/news/article_8fe2f7ca-3933-11e4-9815-0017a43b2370.html

Economic Clusters

Economic developers must prioritize investments to best position the region by building competencies that improve its global competitiveness. These investments frequently occur in export oriented high-skill, high-wage sectors. Growth in such sectors/clusters improves the lives of the region's residents through higher wages, and accelerates GRP by drawing in dollars through export activity.

Although individual communities leverage their unique position and advantages in setting economic development priorities, there is broad consensus in the Permian Basin region regarding clusters that should be targeted through regional partnerships for investment of economic development resources.

1. Midland and Odessa (major population centers) Economic Development Agencies target Clusters detailed below for recruitment and development within their service area or recognize the importance of the Clusters to surrounding communities.
2. Workforce Solutions Permian Basin invests the region's workforce development resources in support of all identified Clusters.
3. Recent investments in the Midland International Air and Space Port have provided the region a unique competitive advantage.
4. Economic development agencies throughout the region make investments in developing competencies in these Clusters within their own communities.

These target Clusters are explicit targets for economic development investments in metropolitan and rural areas throughout the region:

1. Energy: Fossil Fuel and Renewable Energy Production/Environmental Technology
2. Biomedical and Life Sciences
3. Aerospace and Aviation/Space Exploration
4. Transportation and Logistics
5. Manufacturing
6. Agribusiness, Food Processing, and Technology

The analysis that follows establishes a basis for strategy development and provide:

1. A Description or definition of the Cluster;
2. A snapshot of each cluster's economic impact on the region;
3. An employment outlook for the region that identifies (1) regional competencies and (2) Projected high-growth Cluster components;
4. An inventory of economic catalysts for the region likely to stimulate growth.

It should be noted, however, that communities throughout the region, while adept at investments that leverage broader regional competencies, must also capitalize on the unique local characteristics to build a competitive economic position; these investments are not always consistent with regional economic

development clusters. Successful “local” economic development efforts range from redevelopment of downtown McCamey by creating micro-business incubators designed to assist local entrepreneurs, to the development of an intermodal park in Big Spring requiring millions of dollars of investment that will lead to the creation of hundreds of jobs.

A larger scale example of local competency development is Andrews County capitalizing on available land assets, and permitting Waste Control Specialists (WCS) to operate a nuclear waste facility in the County. The operation stores low-level waste, generating an estimated \$3 million in waste fees annually. The County is currently evaluating the possibility of allowing WCS to store high-level waste, a change that, with the approval of citizens and legislators, would generate an estimated \$10 million annually.²⁶

While the analysis that follows does not fully capture the nuance of economic development activity throughout the region, it provides a basis for evaluation and captures the bulk of economic development activity.

Data Notes and Definitions:

-All data, unless otherwise stated, is sourced from Economic Modeling Specialists, Int. (EMSI). Website: www.economicmodeling.com

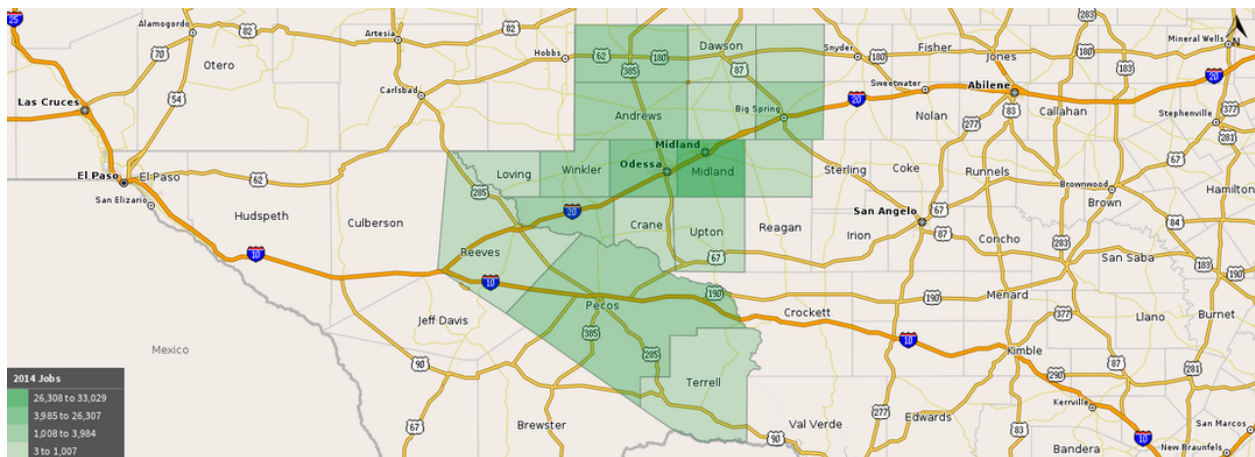
-NAICS is an acronym for the North American Industry Classification System Location quotient (LQ) is a valuable way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region “unique” in comparison to the national average. A LQ >1 indicates a particular characteristic’s concentration is higher than the national average. A LQ < 1 indicates the concentration is less than the national average.

²⁶ <http://www.newswest9.com/story/27521704/andrews-county-considering-proposal-to-store-high-level-nuclear-waste>

Energy: Fossil Fuels and Renewable Energy

THE PERMIAN BASIN'S OIL AND GAS INDUSTRY IS AN IMPORTANT DRIVER OF ECONOMIC ACTIVITY IN THE REGION AND BEYOND. THE INDUSTRY'S ACTIVITIES GENERATE AND SUSTAIN JOBS, INCOME, OUTPUT, AND PROVIDE SUBSTANTIALLY TO THE GROSS STATE PRODUCTS OF BOTH TEXAS AND NEW MEXICO."

- 2014 TEXAS TECH UNIVERSITY ECONOMIC IMPACT STUDY OF THE PERMIAN BASIN'S OIL & GAS INDUSTRY



Fossil Fuel: Fossil Fuel Production (primarily Oil and Gas Production) has long been the foundation of the Permian Basin regional economy.

Renewable Energy/Environmental Technologies: Renewable energy is defined by the Texas Renewable Energy Industry Association (TREIA) as “any energy resource that is naturally regenerated over a short time scale and derived directly from the sun (such as thermal, photochemical, and photoelectric), indirectly from the sun (such as wind, hydropower, and photosynthetic energy stored in biomass), or from other natural movements and mechanisms of the environment (such as geothermal and tidal energy).”

Green technology is generally defined as “a means of energy production that is less harmful to the environment than more traditional ways of generating energy, such as burning fossil fuels.” Defining green technology in this way is consistent with the Bureau of Labor Statistics definition of green jobs (jobs in the green technology industry) as those involved in “making production processes more environmentally friendly or use fewer natural resources.”

Expansion of natural gas exploration, improvement in production techniques, such as fracking and horizontal drilling, and improved transmission capabilities for renewable energy (wind and solar farms) due to the CREZ promise to continue to grow the regional competency in Energy for decades to come.

The industry group that comprises the cluster is detailed at <http://www.pbceds.com/energy-detail.html>

Economic Impact

- 2942 Establishments in the region
- 5.20 Jobs Multiplier
- 82.3% of Jobs are held by males

Industry Requirements: Industry / Amount / In-Region / Out of Region

Crude Petroleum and Natural Gas Extraction / \$1,494,612,354 / 47.7% / 52.3%
Corporate, Subsidiary, and Regional Managing Offices / \$473,727,599 / 13.6% / 86.4%
Petroleum Refineries / \$338,106,969 / 69.8% / 30.2%
Support Activities for Oil and Gas Operations / \$263,932,365 / 96.9% / 3.1%
Offices of Lawyers / \$203,712,902 / 35.7% / 64.3%

Oil and Gas Production:

According to a 2014 Texas Tech University Economic Impact Study of the Permian Basin's Oil & Gas Industry, the Texas Portion of the Permian Basin's oil and gas industry:

- Sustains over 444,000 jobs
- Generates \$113.6 billion in economic output
- Contributes more than \$60.2 billion to the Gross State Product of TexasFort Stockton - Pecos County



Drilling Activity and Production is an important factor in providing current and future economic benefits:

- Permian Basin has the greatest rig count of any basin/region in the world (27% of the U.S. and 56% of Texas)
- A rapidly increasing amount of Permian Basin wells being drilled are horizontal (Since December 27, 2013, the number of horizontal, oil-directed rigs in the Permian Basin rose by 63, representing half of the total increase of those types of rigs in the United States)
- Permian Basin well productivity has improved dramatically since 2011 due to improved technology in horizontal drilling and multi-stage hydraulic fracturing

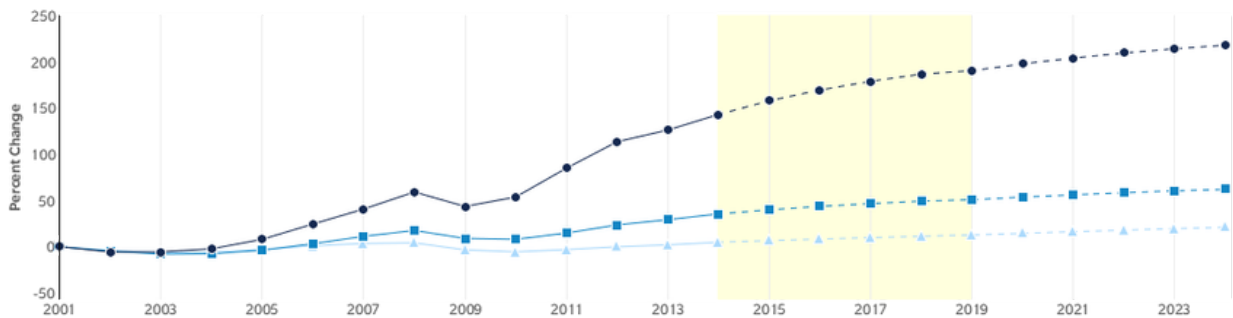
- Drilling efficiencies are being realized in all U.S. Resource Plays and the Permian Basin is the least mature, thus vast efficiency improvements are expected in the Permian Basin

Note: While the region isn't congruous to the 17-County PBRPC planning region, the Texas Portion of the Permian Basin as defined in the 2014 Texas Tech University Economic Impact Study of the Permian Basin's Oil & Gas Industry is an effective proxy for the region.

Wind Energy:

In 2010, wind power generated electricity in 38 states across the country, with overall rated capacity at more than 40,000 MW, and Texas is at the forefront of the wind energy revolution. Texas was the first state to reach the 10,000 MW nameplate capacity limit, with more installed capacity planned for the near future. No area has a larger impact on this form of clean energy than West Texas, which is currently home to the six largest wind farms in the United States. According to Texas Tech University Health Science Center's F. Marie Hall Institute for Rural Health²⁷, West Texas (proxy for the Permian Basin region), accounts for 91.7% of wind energy produced in Texas. The installed capacity in the region currently has the potential to power between two and three million average homes a year.

Employment Outlook



In 2014, the region maintained an estimated 67,738 jobs in the Energy Cluster, more than four-times the national average for a typical region the size of Permian Basin. Employment is projected to grow 19.5% from 2014 to 2019 versus a projected 7.5% growth rate nationwide during the same timeframe. Average earnings for jobs in the cluster are approximately \$96,986, 9.8% higher than the national average.

Within the cluster, the occupations with the highest concentration of jobs include:

- 5,744 Roustabouts, Oil & Gas
- 5,192 Service Unit Operators, Oil, Gas, & Mining
- 2,690 Heavy & Tractor Trailer Truck Drivers
- 2,300 First Line Supervisors (Construction Trades & Extraction)

Economic Development Catalysts

²⁷ <http://www.ttuhsu.edu/ruralhealth/wtxindustry.aspx>

Agrium Inc. gave final approval for a projected \$720 million expansion for the Borger, Texas nitrogen facility²⁸. The expansion will add over 670,000 tons of new urea production annually. Over 110,000 tons of Diesel Emission Fuel (DEF) grade urea. The DEF product is used to reduce nitrogen oxide emission in diesel vehicles. Agrium is one of the largest and lowest-cost producers of nitrogen in the world. The upgrade and expansion at the Borger facility will continue to grow Agrium's nitrogen footprint in the important agricultural region while providing a strong return on investment. The construction will bring approximately 1,000 jobs during the construction phase and 30 additional full time jobs when the facility goes on line in Mid 2015. The job count for full time contractors at the plant will increase, not to mention the jobs created in truck and rail transportation when the project is completed.

Midland partnered with Texas Tech University System with start-up funds for the formation of the National Institute for Renewable Energy (NIRE)²⁹, an independent public-private collaboration that works to solve key scientific and technology challenges facing the wind power industry.

The City of Odessa Energy Complex on Interstate 20³⁰ has the capacity to host heavy manufacturing. Resources include Oncor and gas 345 KV power station, water supply, 24-hour Union Pacific operated freight center, natural gas, industrial waste treatment plant, and available surface space.

The City of Andrews has a new 190-acre Energy Park³¹ in the northeast portion of the town. The park offers build-to-suit programs and (conditional) free land available for qualified energy sector businesses.

Pecos County Commissioners approved a tax abatement in December 2014 for First Solar to build a second Pecos County solar electric generating station³². The \$170 million investment will create 200 temporary construction jobs and will be located in the Tunas Creek reinvestment zone. Construction will begin in January 2015 and transmission is expected to commence in January 2016. Projects such as this are indicative of a growing alternative energy competency for the region.

The Competitive Renewable Energy Zones (CREZ)³³ power transmission project has increased the amount of wind power that can be transmitted from West Texas wind farms to the eastern portions of Texas. The estimated \$7 billion project paid for by adding fees to Texans' utility bills. The CREZ, whose construction was largely completed in 2013, is resulting in fewer curtailments of wind power and more even prices in Texas' energy market, and opens the possibility of more wind and solar projects in the Permian Basin.

²⁸ <http://www.highground.org/blogs/agrium-expansion-borger-texas-approved-board>

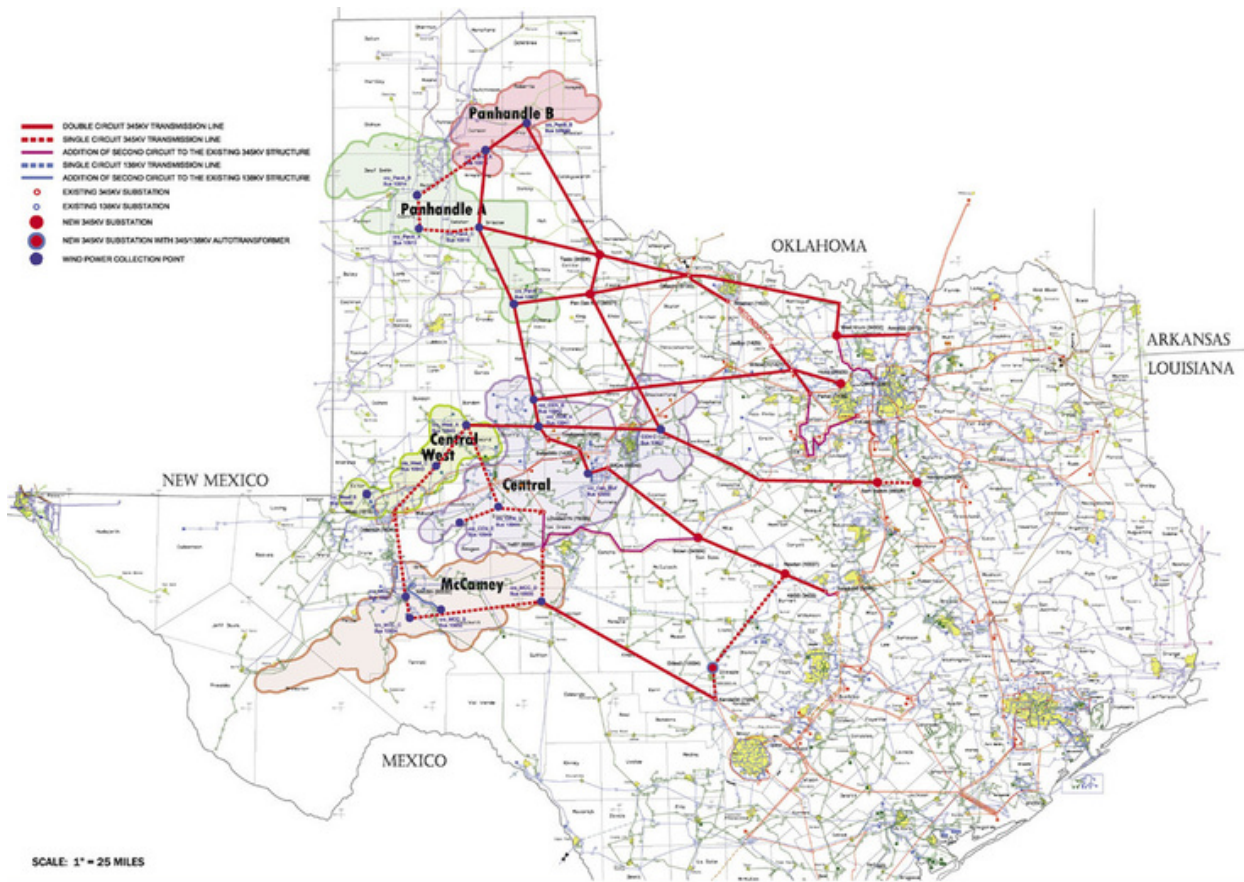
²⁹ <http://reasetechnologycenter.com/the-national-institute-for-renewable-energy.html>

³⁰ <http://odessatex.com/energy-complex>

³¹ <http://andrewsedc.com/energy-park>

³² http://www.fortstocktonpioneer.com/news/article_0617e024-8af4-11e4-8da2-2ffa81577e64.html

³³ <http://stateimpact.npr.org/texas/2014/06/26/how-new-transmission-lines-are-bringing-more-wind-power-to-texas-cities/>



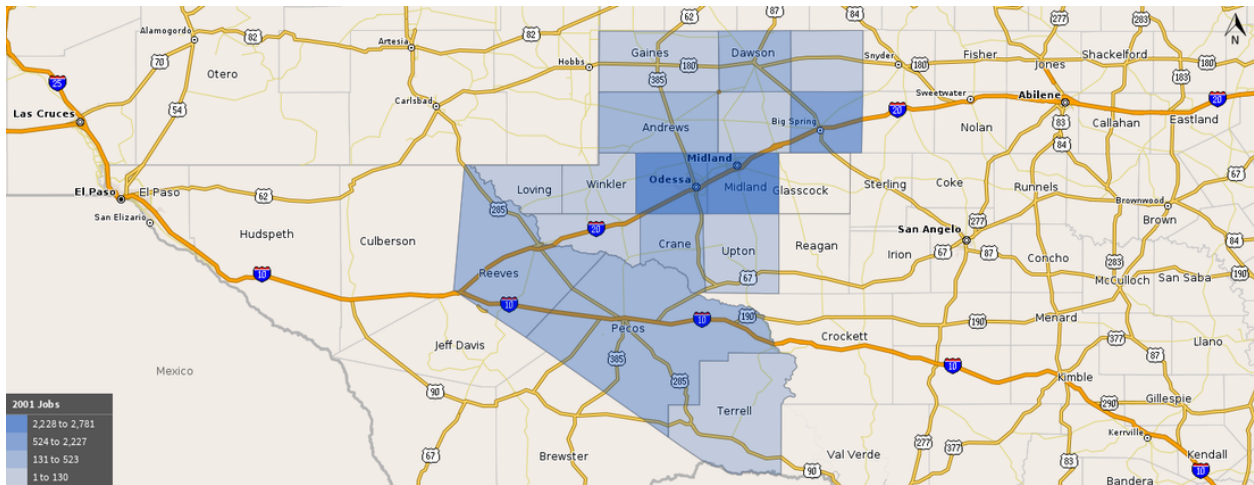
First Solar made a significant investment in solar energy with the Barilla Project³⁴, a 30-megawatt solar farm in 2014. The 20-acre project sits in Pecos County.

West Texas will soon be home to the state's largest solar farm, a 150-MW Recurrent Energy facility to be completed in 2016³⁵, as a result of an energy purchasing agreement with Austin Energy.

³⁴ <http://www.texastribune.org/2014/09/04/west-texas-solar-plant-comes-online/>

³⁵ <http://www.texastribune.org/2014/05/15/texas-largest-solar-plant-power-austin/>

Biomedical and Life Sciences



The region's Biomedical and Life Sciences Cluster is projected to grow 18.4% (employment) over the next five years, providing residents with quality skilled employment opportunities and diversifying the regional economy. The Cluster includes a diversity of industries from traditional health care service delivery in hospitals and clinics to biomedical research and development. Continued growth of the cluster will be driven and characterized by Permian Basin's unique regional assets and motivators.

- The network of regional hospitals and clinics have received significant investments to improve capacity and enhance technology in recent years. These local serving operations will continue to grow with the Permian Basin population. This traditional healthcare network, however, is uniquely suited to triage trauma cases as a result of concentration of oil and gas production employees.
- Assisted living and nursing home facilities are prevalent throughout the region to accommodate the region's aging population. Several communities, including Big Spring and McCamey, have targeted development to create attractive retirement communities.
- The Texas Tech Health Science Center is a strong research and development asset for the region. Health Science Centers are sources of innovation, patenting, and commercialization when leveraged with effective venture capital, angel investment, and business incubators.

The Biomedical and Life Sciences Cluster can be a source of gross regional product and employment opportunities for years to come with continued sustained investment by communities and economic developers in growing traditional health care and innovation, research and development assets.

The industry group that comprises the cluster is detailed at <http://www.pbceds.com/biomedical--life-sciences-detail.html>

Economic Impact

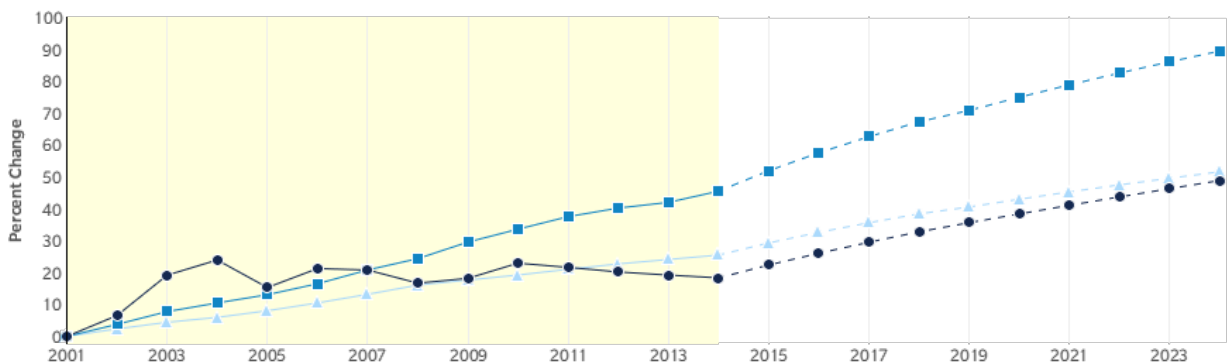
- 313 Establishments in the region

- 1.78 Jobs Multiplier
- 79.0% of Jobs are held by females

Industry Requirements: Industry / Amount / In-Region / Out of Region

Offices of Real Estate Agents and Brokers / \$12,002,208 / 45.7% / 54.3%
 Other Activities Related to Real Estate / \$8,321,361 / 47.8% / 52.2%
 Lessors of Residential Buildings and Dwellings / \$17,064,444 / 51.7% / 48.3%
 Corporate, Subsidiary, and Regional Managing Offices / \$15,336,071 / 9.8% / 90.2%
 Lessors of Nonresidential Buildings (except Miniwarehouses) / \$15,670,141 / 47.1% / 52.9%

Employment Outlook



In 2014, the region maintained an estimated 9,932 jobs in the Biomedical and Life Sciences Cluster, 52% below national average for a typical region the size of Permian Basin. Employment is projected to grow 18.4% from 2014 to 2019 versus a projected 25.5% growth rate nationwide during the same timeframe. Average earnings for jobs in the cluster are approximately \$39,132, 35.4% lower than the national average.

Within the cluster, the occupations with the highest concentration of jobs include:

- 1,635 Personal Care Aides
- 1,097 Home Health Aides
- 952 Registered Nurses
- 951 Nursing Assistants
- 647 Licensed Practical and Vocational Nurses

Economic Development Catalysts

Midland Memorial Hospital opened a new seven-story patient tower in December 2012³⁶, enhancing the medical technology available to the community and improving the health care capacity of the region. The budget for the project was \$177.6 million.

³⁶ http://www.mrt.com/top_stories/article_0a822e15-ccc5-55b1-8c99-b4d095d9cd38.html

The Midland Development Corporation has committed several million dollars in funding to recruit physicians that grew up in the region, back to the region to practice in local health care facilities.

The City of McCamey in March of 2014 broke ground on a new hospital, a 32 bed nursing home and rural health clinic³⁷ in the McCamey County Hospital District, a \$25 million project to expand the community's health care capacity.

The City of Big Spring is home to a unique cluster of health care facilities that are critical resource for Big Spring and surrounding rural west Texas communities³⁸. The community boasts a 150 bed private hospital serving the general public, to a Department of Veteran Affairs Medical Center, a State mental health facility and a Texas State Veterans Home. There is also premier rehabilitation facilities providing physical therapy, occupational therapy, cardiac rehabilitation, audiology, and wellness programs, as well as several facilities that provide housing for the elderly, assisted living facilities, nursing homes, and in home health care.

Odessa's Medical Center Hospital (MCH) achieved level-two status in 2013³⁹, after nearly three years of preparation, including the addition of cutting edge medical technology. MCH is the only level two facility in the Permian Basin. The designation will help decrease in the need to transfer patients to other facilities and will allow the facility to treat most people.

Odessa Regional Medical Center (ORMC)⁴⁰ continues to make investments to improve access and reach vulnerable communities. In 2014, ORMC launched a Health Screening Van service⁴¹, providing angio-screening services for a small fee to communities throughout the area. ORMC offers comprehensive services including neonatal intensive care (NICU), high-risk obstetrics, maternal/child, cardiac, orthopedics, critical-care, and medical-surgical care. To insure faster access of these services,



³⁷ http://www.mrt.com/top_stories/article_f550d2b0-a9a7-11e3-82cd-0019bb2963f4.html

³⁸ <http://bigspringtx.com/community-profile/healthcare>

³⁹ <http://www.newswest9.com/story/22830281/odessa-hospital-becomes-leading-trauma-center-in-the-region>

⁴⁰ <http://www.odessaregionalmedicalcenter.com/>

⁴¹ http://www.oaoa.com/medically_speaking/article_680c6b06-93fb-11e3-8ae6-001a4bcf6878.html

ORMC features a state-of-the-art, 10,000 square foot helipad for accepting air-ambulance helicopter transports throughout the region.

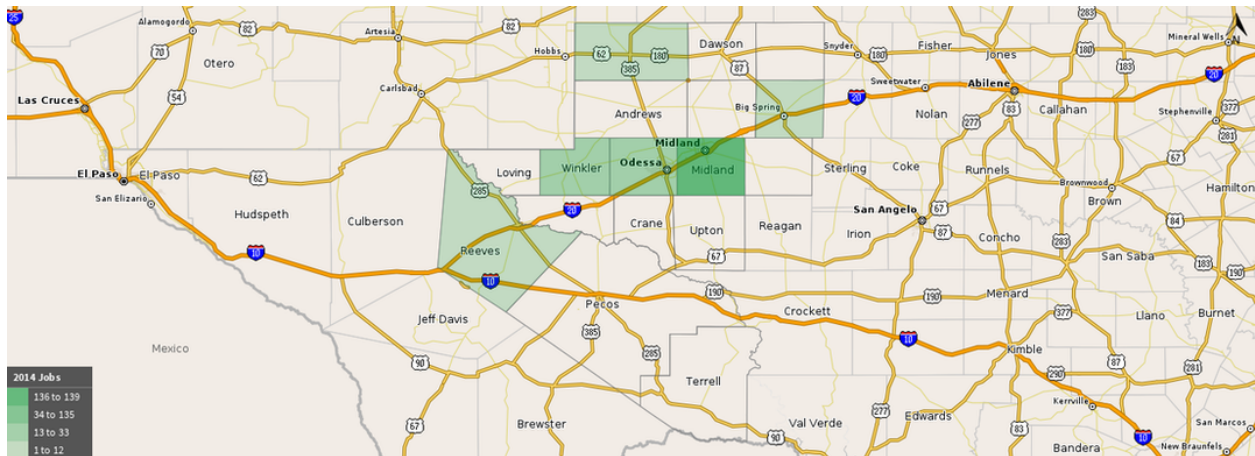
Rural communities throughout the region are investing in expanding access to healthcare facilities. McCamey Hospital District⁴² as well as Martin, Upton, and Dawson Counties have all added new hospitals and public health clinics to the region's health care infrastructure.

⁴² <http://www.mccameyhospital.org/getpage.php?name=index>

Aerospace and Space Exploration

“IT’S AN IMPORTANT DAY FOR NOT ONLY MIDLAND, BUT THE NATION, AS WE SEE THE PRIVATE SPACE SECTOR BECOMING A VITAL PART OF OUR FUTURE ECONOMY. THE SPACEPORT IS CO-LOCATED WITH OUR COMMERCIAL AIRPORT WHICH WILL ALLOW MIDLAND TO ATTRACT ADDITIONAL AEROSPACE COMPANIES TO THE COMMUNITY.”

- MIDLAND DEVELOPMENT CORPORATION BOARD CHAIRMAN ROBERT RENDALL



While not a traditional economic driver for the Permian Basin region, the Aerospace and Space Exploration cluster is primed for development as a local competency that will pay economic dividends over the long-term. Opportunities for development of this cluster are driven by 3 local factors:

1. The Permian Basin region is home to a geographically dispersed network of 17 air fields of significant size. Midland International anchors the region, providing the most significant passenger and cargo capacity, complimented by significant capacity from county and municipal air fields.
2. The dispersion of economic activity throughout the region, driven both by the vastness of the region and the significance of oil and gas exploration which occurs largely in low-population rural areas, drives the need for air access points in close proximity to operations.
3. The Midland International Air and Space Port's was recently designated as a FAA approved spaceport, opening the doors to the development of a unique and robust Aerospace and Space Exploration cluster.

Communities throughout Permian Basin have a history of sustained investment in developing local air capacity through improvements to air fields, including runway extension, hangar construction/reconstruction, and maintenance repairs. The Cities of Midland and Odessa, meanwhile, have raised the bar staking out a competitive advantage in securing Midland International's designation as a FAA approved spaceport and attracting two related business, XCOR and Orbital

Outfitters. In the years to come, economic developers and communities must continue to maintain and expand the capacity of regional airfields, and make new investments to capitalize and further develop the region's cluster of space exploration companies.

The industry group that comprises the cluster includes is detailed at <http://www.pbceds.com/aerospace--space-exploration-detail.html>

Economic Impact

- 28 Establishments in the region
- 1.60 Jobs Multiplier
- 70.2% of Jobs are held by males

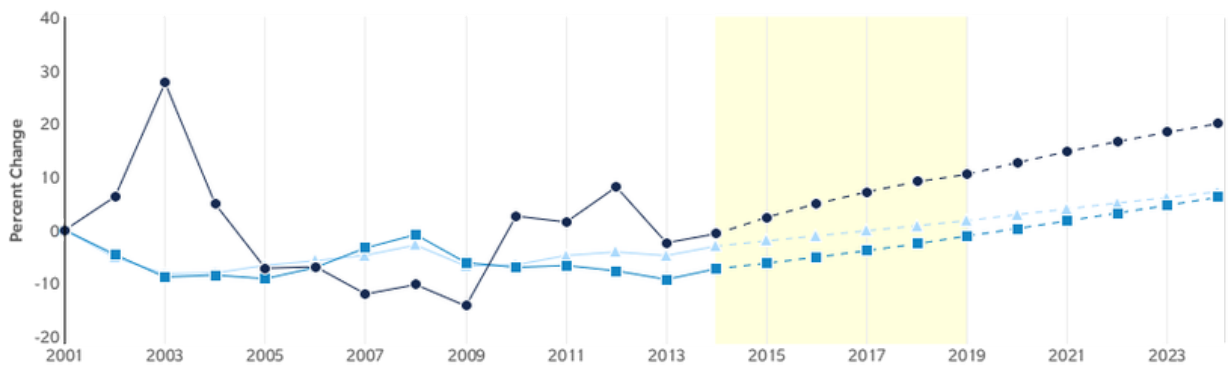
Industry Requirements: Industry / Amount / In-Region / Out of Region

- Petroleum Refineries / \$9,389,716 / 85.6% / 14.4%
- Freight Transportation Arrangement / \$1,907,621 / 26.7% / 73.3%
- Couriers and Express Delivery Services / \$1,214,467 / 26.6% / 73.4%
- Other Support Activities for Air Transportation / \$888,487 / 27.2% / 72.8%
- Construction, Mining, and Forestry Machinery and Equipment Rental and Leasing / \$649,543 / 98.5% / 1.5%

Airfields, as economic engines and centers for all elements of the Aviation/Aerospace cluster activity, are key contributors to the regional economy. Below is a summary of the Texas Department of Transportation’s estimated economic impacts on the region for 2011⁴³.

- Big Spring McMahon-Wrinkle: Output \$9,253,086 / Labor Income \$2,983,098 / Jobs 64.
- Fort Stockton - Pecos County: Output \$3,349,672 / Labor Income \$1,463,072 / Jobs 37.9
- Midland International: Output \$354,720,561 / Labor Income \$145,843,014 / Jobs 4,757

Employment Outlook



⁴³ <http://www.txdot.gov/inside-tdot/division/aviation/eco-impact-aviation.html>

In 2014, the region maintained an estimated 202 jobs in the Aerospace and Space Exploration Cluster. While the jobs total is 88% below the national average for a typical region the size of Permian Basin and projected to expand 11.2% from 2014 to 2019 versus 4.9% nationally. Despite a relatively small employment footprint, the cluster is primed to grow due to recent improvements in the Midland International Air and Space Port, development of associated business parks, and investments made by rural Permian Basin communities in airport infrastructure. Average earnings for jobs in the cluster are approximately \$67,509, 33.7% below than the national average.

Economic Development Catalysts

On September 17 2014, the Midland International Airport announced⁴⁴ the Federal Aviation Administration (FAA) approval of a Commercial Space Launch Site License (Space Port). The now Midland International Air and Space Port is the first primary commercial service airport to be certified by the FAA as a spaceport.

The Midland Development Corporation approved \$1.5 million in January 2014⁴⁵ to refurbish a hangar at the Midland International Airport for California based company XCOR to launch its Lynx Suborbital Spacecraft from the facility. XCOR broke ground on hangar refurbishment efforts in August 2014.

In January 2014, Orbital Outfitters, a NewSpace company that provides services to vehicle developers and other companies in the aerospace sector, announced it would move its headquarters to the Midland International Airport⁴⁶. The Midland Development Corporation approved an estimated \$7 million agreement permitting the company to manage and operate a MDC owned \$3.2 million altitude chamber facility. The MDC board also agreed to provide the firm with a \$2.2 million incentive to construct its new headquarters and \$1.5 million to assist in its relocation from California.

In 2012, the Midland Development Corporation approved \$10 million in financial incentives⁴⁷ to assist XCOR Aerospace to establish a new Commercial Space Research and Development Center Headquarters in Midland.

⁴⁴ <http://midlandtxedc.com/news/midland-international-airport-receives-historic-federal-aviation-administration-spaceport>

⁴⁵ http://www.mrt.com/top_stories/article_e431c59e-fa7d-11e3-8886-001a4bcf887a.html

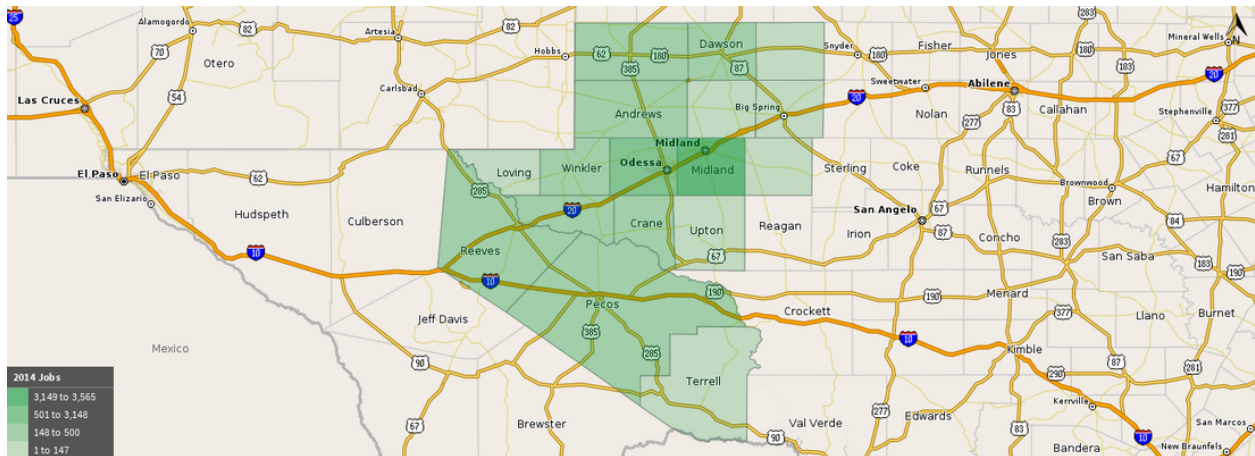
⁴⁶ <http://www.areadevelopment.com/newsItems/1-24-2014/orbital-outfitters-headquarters-midland-texas823489.shtml>

⁴⁷ <http://www.citizensinspace.org/2012/07/xcor-midland-announcement/>

Transportation and Logistics

"THE PERMIAN BASIN HAS AND CONTINUES TO MAKE A SIGNIFICANT CONTRIBUTION TO THIS STATE (TEXAS). WE ARE COMMITTED TO WORKING WITH STATE, REGIONAL, AND LOCAL OFFICIALS TO FINDING THE FUNDING STREAMS NECESSARY TO ENSURE THAT THOSE OF US IN THESE ENERGY PRODUCING AREAS CAN MEET OUR NEEDS, BOTH FOR TODAY AND THE FUTURE"

- MOTRAN CHAIRMAN J.D. FAIRCLOTH



The Permian Basin is unique in the maturity of its multi-modal transportation and logistics infrastructure. The vastness of the region, combined with the materials moving requirements of key economic clusters and its proximity along east-west and north-south international trade corridors, has required the development of efficient rail and roadways. This development has been effectively supplemented by improvements in air infrastructure, anchored by Midland International Air and Space Port.

The region's roadways include Interstates 10 and 20 bisecting the region East to West and providing direct connection to El Paso, San Antonio, and Dallas/Fort Worth. The region also boasts a major north-south connection to Lubbock and Amarillo in HWY 87/IH 27, which connects to IH-40 and a strong network of State Highways, County and Local Roadways that are significant economic assets for the region. The region is also central to the La Entrada al Pacifico Trade Corridor and the Ports to Plains corridor connecting Mexico and Canada.

The Permian Basin rail system is comprised of east-west Union Pacific Railroad Company⁴⁸ and Texas Pacifico Transportation Limited⁴⁹ railways as well as north-south Burlington Northern Santa Fe Corporation⁵⁰ railways. This dynamic allows for the efficient import and distribution of materials and goods from the region providing an important economic advantage for companies with a footprint in

⁴⁸ <http://www.up.com/>

⁴⁹ <http://www.texaspacifico.com/>

⁵⁰ <http://bnsf.com/>

the region. Recent years have seen sustained private and public investment in improving capacity and access to the critical rail arteries.

The airport infrastructure for the Permian Basin region is anchored by the Midland International Air and Space Port⁵¹, a 1600 acre municipally owned airport located approximately midway between Midland and Odessa that serves more than 900,000 passengers annually. One of eight FAA licensed commercial spaceports, Midland International is the first primary commercial service airport certified by the FAA as a spaceport. The region is further supported by a strong network of regional/municipal airports.

The region's economic developers have a history of sustained investment in developing transportation infrastructure and aggressive business development that capitalizes on this asset. Recent years have seen tremendous gains in industrial capacity by communities throughout the region via investments such as business parks, rail spurs, intermodal parks, etc. Continued development of a transportation and logistics cluster will require continued focus on maintenance and expansion of infrastructure quality and capacity if the region is to continue to expand economically.

The industry group that comprises the cluster is detailed at <http://www.pbceds.com/transportation--logistics-detail.html>

Economic Impact

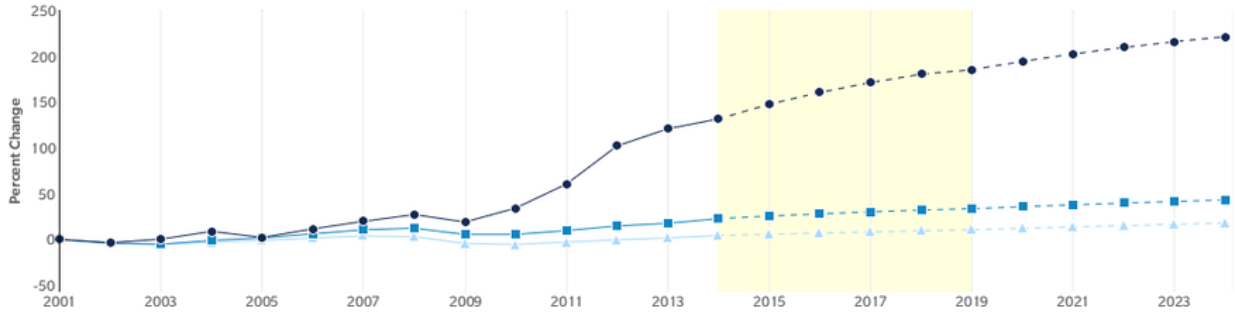
- 594 Establishments in the region
- 1.81 Jobs Multiplier
- 83.5% of Jobs are held by males

Industry Requirements: Industry / Amount / In-Region / Out of Region

Petroleum Refineries / \$310,617,214 / 63.1% / 36.9%
Couriers and Express Delivery Services / \$75,590,693 / 29.3% / 70.7%
US Postal Service / \$35,240,273 / 47.2% / 52.8%
Freight Transportation Arrangement / \$25,249,681 / 24.7% / 75.3%
Crude Petroleum and Natural Gas Extraction / \$23,846,082 / 51.4% / 48.6%

Employment Outlook

⁵¹ <http://flymaf.com/>



In 2014, the region maintained an estimated 8,521 jobs in the Transportation and Logistics Cluster, 30% more than the national average for a typical region the size of Permian Basin. Employment is projected to grow 23.2% from 2014 to 2019 versus a projected 6.0% growth rate nationwide during the same timeframe. Average earnings for jobs in the cluster are approximately \$75,945, 21.7% higher than the national average.

Within the cluster, the occupations with the highest concentration of jobs include:

- 4,155 Heavy & Tractor Trailer Truck Drivers
- 769 Laborers and Freight, Stock, and Material Movers
- 295 Light Truck or Delivery Service Drivers
- 225 Bus & Truck Mechanics & Diesel Engine Specialists
- 210 Office Clerks, General

Economic Development Catalysts

The Ports-to-Plains Alliance⁵² has brought significant attention and federal resources to bear on improving the highway system to support energy production and the export of oil and gas from the Permian Basin region. The Ports-to-Plains Alliance is a non-profit, non-partisan, community-driven advocacy group led by mayors, councilpersons, economic development officials, and business leaders from a nine-state, 2300-plus mile economic development corridor between Texas, and Alberta, Canada.

The MOTRAN Alliance⁵³ is an advocacy agency for commitment of resources to improvement of transportation infrastructure in the Permian Basin and for development of an international trade route connecting the Permian Basin to Chihuahua City, Mexico. Many Texas cities will benefit from the proposed corridor including those in West and Central Texas. Cities along I-20 and I-10 stand to gain the most via development - these include Dallas, Fort Worth, Abilene, Midland and Odessa. Additional cities will benefit if the corridor is extended north along I-27, including Lubbock, Plainview, Amarillo, and surrounding communities.

⁵²<http://www.portstoplains.com/>

⁵³<http://motran.org/>

BNSF Railway celebrated the opening of a new \$45-million logistic center in Sweetwater, Texas⁵⁴, with a ribbon-cutting ceremony. The logistic center is supported by rail, truck, and transload services. The center will support customers across several industries including agricultural commodities, sand, pipe, and aggregate. While Sweetwater rests outside of the PBRPC region, the logistics center is intended to serve as a hub for economic activity for the Cline Shale which partially lies within the PBRPC area.

The Midland Executive Airpark⁵⁵ is located on the Northern side of the City of Midland and is only minutes from downtown Midland. Midland Airpark is designed to allow easy access to all areas of the Midland Community. Midland Airpark serves the general aviation public which includes business and corporate traffic and is under the operational control of the City of Midland and the Department of Airports.

The Midland International Air and Space Port is designated Foreign Trade Zone #165⁵⁶. "FTZs are treated, for the purposes of the tariff laws and customs entry procedures, as being outside the Customs Territory of the United States. Under FTZ procedures, foreign and domestic merchandise may be admitted into zones for operations such as; storage, exhibition, assembly, manufacture, and processing, without being subject to formal customs entry procedures (the payment of customs duties or the payment of federal excise taxes)."

In recent years, Midland International Air and Space Port have made significant investments to improve capacity⁵⁷, including:

- \$3.4 million for Taxiway Extension in 2015
- \$2.3 million Parking Lot Addition in 2014
- \$2.8 million Executive Hangar Reconstruction from 2012-2014
- \$4.0 million to Rehabilitate Taxiway Systems in 2013
- \$3.9 million for Runway Reconstruction in 2012

The Union Pacific Railroad and the Agri-Empresa Transloading Facility⁵⁸ have connected Midland to the major metropolitan areas of Central and Western United States. The Agri-Empresa Transloading Facility is the newly constructed off-loading point for businesses in the Midland area. Service is provided by the Union Pacific Railroad and the facility can manage a maximum of 210 cars. The facility is ideally located adjacent to Business I-20 and is less than 1 mile from the David Mims Business Park.

Union Pacific Railroad has made an estimated \$110,659,506 in investments in the Midland-Odessa

⁵⁴ <http://www.sweetwatertexas.net/news/bnsf-developers-revitalize-rail-yard-support-growth-permian-basin>

⁵⁵ <http://www.flymaf.com/149/Midland-Executive-Airpark>

⁵⁶ <http://www.flymaf.com/132/Foreign-Trade-Zone>

⁵⁷ <http://www.motormpo.com/images/pdf/2040MTP/chapter%209%20-%20air%20and%20rail.pdf>

⁵⁸ http://www.mrt.com/top_stories/article_96228723-ed89-5a1b-8de5-63fbf313ae7f.html

area from 2010-14 according to the MOTOR MPO Plan, Vision 2040⁵⁹. Investments include the 2013 addition of 6 additional side storage rail lines to the Odessa Rail Yard.

Union Pacific has plans to develop a Union Pacific Distribution Services (UPDS) Railport, a dedicated pipe and bulk transloading facility, in multiple phases during the coming years, just south of the Odessa Rail Yard. Phase one included a \$14 million investment in the construction of two rails.

The 500-acre Montane Logistics Industrial Park is rail served and home to a staging yard, warehouses, and silos. The Industrial Park is a significant economic development asset that will assist in developing Pecos as a transportation and logistics hub.

US Silica Co. constructed a \$12 million transloading and storage facility in south Odessa⁶⁰ capable of storing 20k tons of fracking sand to accommodate oil and gas exploration in the region.

Wild Cat Minerals opened a proppant transloading and storage facility⁶¹ with a capacity of 34k tons of proppant and a unit train track capacity of 55.

Big Spring Economic Development Corporation approved \$150,000 in reimbursement for rail upgrades and capital improvements to Transportation Handling Specialist in 2012, as well as \$500 per month for two years, to improve the competitiveness and develop industrial property. The Big Spring Rail System, operated by Transport Handling Specialists, was also one of 12 rail line projects across the United States receiving funding (\$299,423) from the Federal Railroad Administration Rail Line Relocation and Improvement grant program.

The City of Andrews Business Park has 50-acres developed, with utilities, and ready for improvements. The site has access to U.S. Highway 385 South, Mustang Drive (the bypass loop) and State Hwy 176. Land is offered free to qualified businesses and several build-to-suit programs are possible with lease and lease-purchase options. Composites One, LLC, a national distributor of fiberglass and advanced composite material is a current tenant, having constructed a \$1.1 million 20,000 square foot distribution center.

The Odessa Business Park capitalizes on location, adjacent to Interstate 20 and within 10 minutes of the Midland International Air and Space Port, a Union Pacific Railroad Switch, and La Entrada al Pacifico.

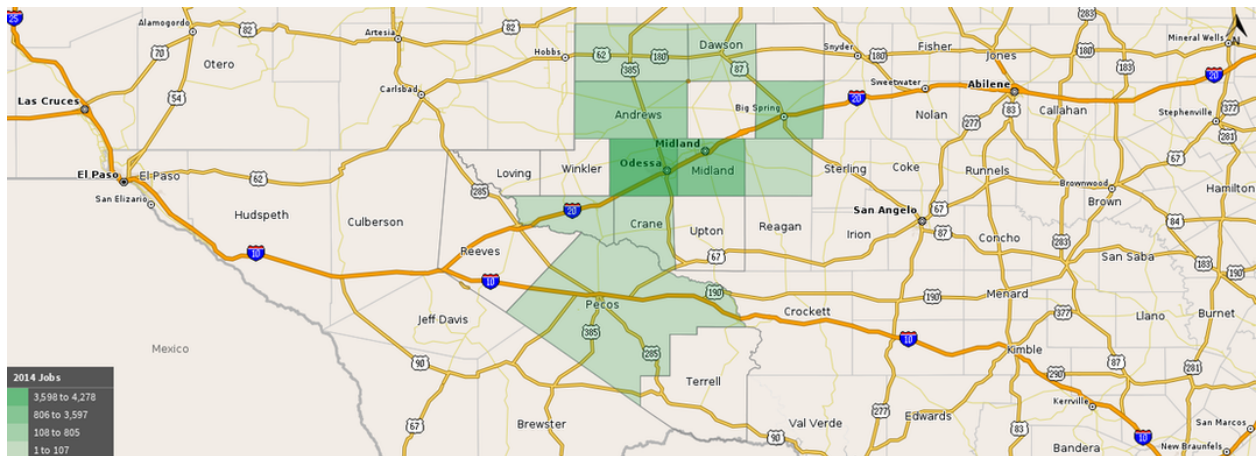
⁵⁹ <http://www.motormpo.com/images/pdf/2040MTP/chapter%209%20-%20air%20and%20rail.pdf>

⁶⁰ http://www.oaoa.com/news/business/article_8a2a7898-f8cf-11e3-8e12-0017a43b2370.html

⁶¹ <http://wildcatminerals.com/wildcat-minerals-announces-expansions-terminal-network-permian-bakken/>

Manufacturing

"THE REGION HAS CRITICAL ASSETS DEVELOPED FOR OTHER INDUSTRIES, SUCH AS RAIL CAPACITY AND THE CONCENTRATION OF WORKERS SKILLED IN WELDING, MACHINING, AND METAL WORKING. THESE ASSETS CAN BE LEVERAGED IN THE DEVELOPMENT OF A STRONG MANUFACTURING CLUSTER"
- SCOTT JONES, ECONOMIC DEVELOPMENT DIRECTOR, ODESSA DEVELOPMENT CORPORATION



Driven by efficiencies in the Oil and Gas Production supply chain, the Permian Basin region has developed capacity in advanced manufacturing primarily to support the region's energy cluster. This production capacity, however, creates opportunities for economic development beyond energy production, particularly when combined with the region's strong transportation/logistics framework and low utility costs. This unique coupling of assets and competencies gives the Permian Basin region a competitive advantage that can be leveraged to diversify and strengthen the economy via development of a strong advanced manufacturing cluster.

The region's current many manufacturing facilities produce varied products including fiberglass, copper, playground equipment, packing, electronics, farm equipment, safety supplies, plastics, shutters, mobile homes, apparel, wall board, aluminum ingots, frack tanks, bowling equipment, and petroleum pipeline to name a few.

The industry group that comprises the cluster is detailed at <http://www.pbceds.com/manufacturing-detail.html>

Economic Impact

- 340 Establishments in the region
- 10.76 Jobs Multiplier
- 84.5% of Jobs are held by males

Industry Requirements: Industry / Amount / In-Region / Out of Region

Iron and Steel Mills and Ferroalloy Manufacturing / \$181,710,696 / 12.1% / 87.9%

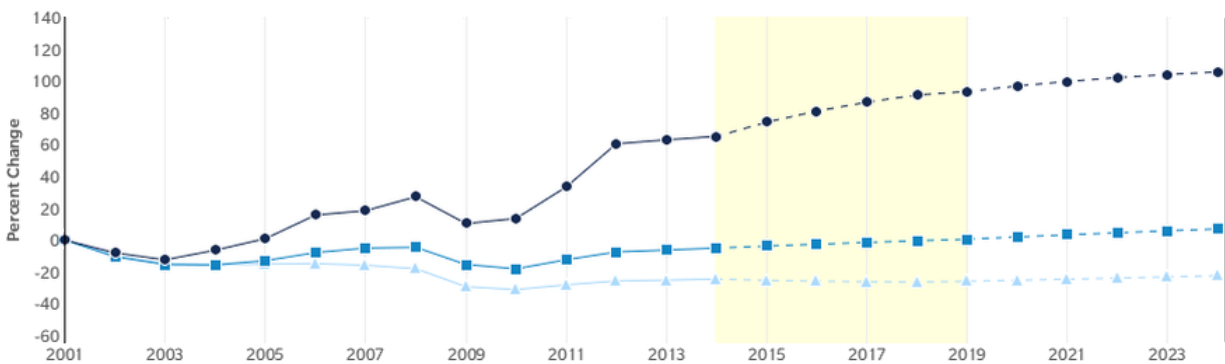
Corporate, Subsidiary, and Regional Managing Offices / \$56,502,042 / 10.6% / 89.4%

Machine Shops / \$42,823,908 / 62.9% / 37.1%

Other Engine Equipment Manufacturing / \$30,251,156 / 5.2% / 94.8%

Wholesale Trade Agents and Brokers / \$26,681,385 / 28.8% / 71.2%

Employment Outlook



In 2014, the region maintained an estimated 8,064 jobs in the Manufacturing Cluster. While the jobs total is 14% below the national average for a typical region the size of Permian Basin, employment growth is projected at 17.4% from 2014 to 2019 versus a projected -1.8% growth rate nationwide during the same timeframe. Average earnings for jobs in the cluster are approximately \$77,952, 8.1% below than the national average.

Within the cluster, the occupations with the highest concentration of jobs include:

- 949 Machinists
- 936 Welders, Cutters, Solderers, & Brazers
- 663 Team Assemblers
- 301 First Line Supervisors (Production & Operating Workers)
- 268 Inspectors, Testers, Sorters, Samplers, & Weighers

Economic Development Catalysts

The City of Odessa offers a Freeport Exemption⁶² for all five taxing entities for businesses involved in the export of tangible property (goods, wares, and merchandise). All property must be assembled, stored, manufactured or fabricated locally, and exported out of state within 175 days.

The Odessa Economic Development Corporation is focused on growing the manufacturing base by capitalizing on available rail infrastructure, proximity to roadways, and workforce competency (maintenance, welding, etc.). GROW Odessa⁶³ owns large tracts of developable land with access to transportation infrastructure to support expansion and offers incentive for development.

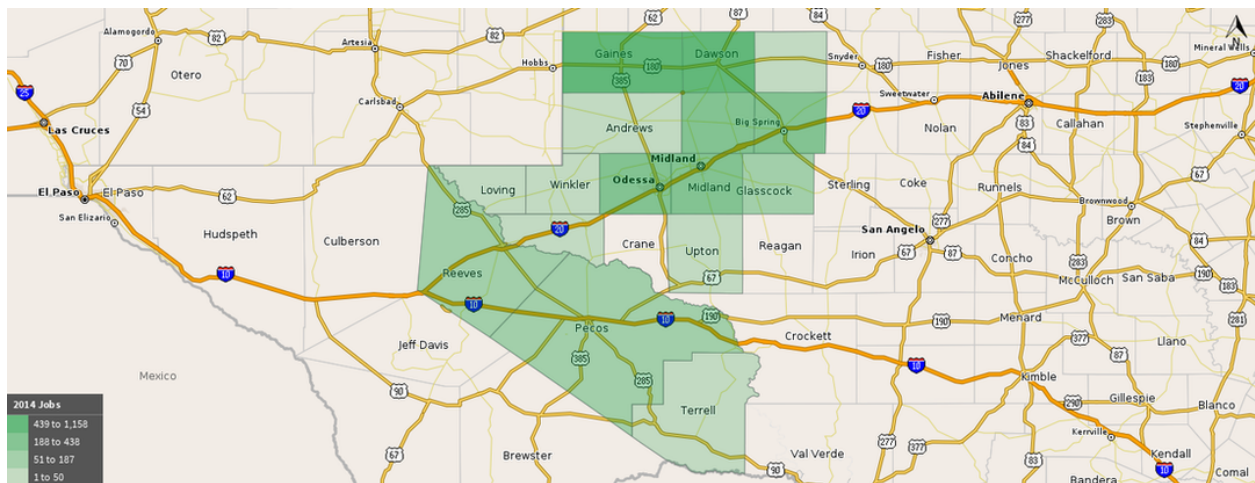
⁶² <http://odessatex.com/freeport-exemption>

⁶³ <http://www.growodessa.net/index.php>

Agribusiness, Food Processing, and Technology

"I THINK IT (VILLAGE FARMS GREENHOUSE) SHOWS THAT AGRICULTURE IS STILL A MAJOR PLAYER AND IT'S NOT GOING AWAY, IF YOU'VE GOT THE BEST FACILITY IN THE WORLD AND THE MOST ADVANCED, PEOPLE ARE GOING TO WANT TO SEE IT."

- TODD STAPLES, TEXAS AGRICULTURE COMMISSIONER



Agribusiness, Food Processing and Technology Cluster businesses has long been the foundation for communities throughout the Permian Basin region. Drawing on the abundance of arable land and transportation infrastructure that can efficiently take goods to market, the region can continue to build upon the strength of its agribusiness cluster to strengthen local economies and create economic diversity.

The long growing season and the irrigated land make the area ideally suited for the growing of any number of crops. The well-suited conditions provide an excellent potential for the development of high value specialty crops in the area. More than 25 crops are produced commercially in the region. Primary crops include wheat, sorghum, corn, sugar beets, hay, soybeans, cotton and vegetables. Additional crops such as alfalfa and peppers are prevalent to the south of the region, near Fort Stockton. The "Pecos Cantaloupe" are raised in the small community of Coyanosa. Texas's largest vineyard (Mesa Vineyard) and Belding Farms, the state's second largest pecan orchard, are located near Fort Stockton.

The fed cattle industry has served as the backbone for the development of one of the most highly productive agricultural regions in the world. The temperate climate and friendly environmental conditions had led to a steady increase in the fed cattle industry since the industry's initial explosion in the early 70's. The industry serves as one of the largest employers in the region.

Technology is changing the operations of businesses throughout the cluster, from revolutionizing production and harvesting techniques, to new, innovative methods of production such as the Village Farms Greenhouse in Monahans. Economic developers and communities throughout the region must

prioritize and nurture this unique regional competency as a cornerstone for diversification of the regional economy.

The industry group that comprises the cluster is detailed at <http://www.pbceds.com/agribusiness-detail.html>

Economic Impact

- 778 Establishments in the region
- 7.75 Jobs Multiplier
- 75.0% of Jobs are held by males

Industry Requirements: Industry / Amount / In-Region / Out of Region

Crop Production / \$70,852,898 / 25.2% / 74.8%

Animal Production / \$47,350,673 / 7.5% / 92.5%

Other Animal Food Manufacturing / \$42,254,679 / 0.8% / 99.2%

Petroleum Refineries / \$31,716,383 / 50.0% / 50.0%

Farm Labor Contractors and Crew Leaders / \$12,203,748 / 48.0% / 52.0%

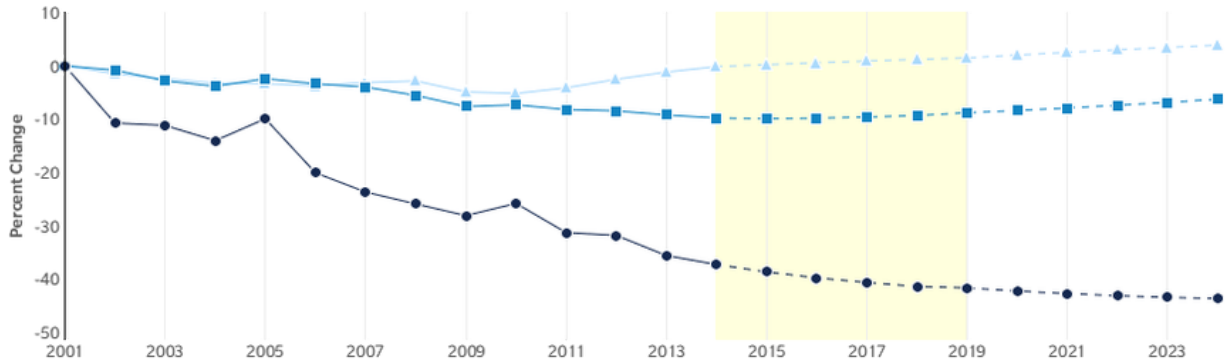
According to Texas Tech University Health Science Center's F. Marie Hall Institute for Rural Health⁶⁴, West Texas (proxy for the Permian Basin region) is the primary source of numerous agricultural products in Texas. The following percent of product are supplied by West Texas:

- 65.8% Cattle/Calves sold
- 67.1% Sheep/Lambs inventory
- 60.2% Corn grain (bushels)
- 85.6% Cotton, all (bales)
- 90.7% Peanuts (pounds)
- 98.0% Sunflower seeds (pounds)
- 88.4% Wheat grain (bushels)
- 66.0% Grapes, wine-producing (bearing acreage of land)

Employment Outlook

In 2014, the region maintained an estimated 3,575 jobs in the Agribusiness, Food Processing and Technology Cluster. While the jobs total is 38% below the national average for a typical region the size of Permian Basin and projected to decline 6.4% from 2014 to 2019, Agribusiness remains a vital component of the local economy due to the abundance of arable land and advanced transportation infrastructure. Average earnings for jobs in the cluster are approximately \$38,636, 20.6% below than the national average.

⁶⁴ <http://www.ttuhsu.edu/ruralhealth/wtxindustry.aspx>



Within the cluster, the occupations with the highest concentration of jobs include:

- 1,286 Farmworkers & Laborers (Crop, Nursery, & Green House)
- 191 Agricultural Equipment Operators
- 139 Farmers, Ranchers, & Other Agricultural Managers
- 114 Farm Equipment Mechanics & Service Technicians
- 112 Farmworkers (Farm, Ranch, & Aquacultural Animals)

Economic Development Catalysts

The City of Seminole, in Gaines County, has a strong agribusiness cluster presence and has developed competencies in cotton and peanut production with the presence of companies such as West Gaines Seed and Delinting (137 employees), Valley Irrigation and Pump (40 employees), and Birdsong Peanuts (20 employees).⁶⁵

Terrell County is home to numerous hunting services⁶⁶ that create a unique seasonal opportunity to generate income for the County from sources outside of the region.

Village Farms International opened a hydroponic greenhouse in Monahans in 2012⁶⁷, bringing with it the potential for 400 jobs and the proprietary Greenhouse Advanced Technology Environmental System (GATES). The development is important as an employment base for the community, but also expands on a regional agribusiness competency that can be leveraged for future cluster growth.

⁶⁵ <http://www.seminolechamber.org/assets/Comm%20Fact%20Sheet%202007-pdf.pdf>

⁶⁶ <http://www.sandersonchamberofcommerce.info/businesses/>

⁶⁷ <http://www.villagefarms.com/AboutVillageFarms/NewsAndPress/Articles/newGH2.aspx>

Research

Resources and research sources utilized in the composition of this CEDS are available at <http://www.pbceds.com/research.html>

Acknowledgements

This Comprehensive Economic Development Strategy (CEDS) is the result of generous donations of time and knowledge from a broad range of regional stakeholders dedicated to the continued growth and prosperity of the Permian Basin region. Many individuals contributed to the development of the CEDS through interviews, group meetings, webinars, online surveys and polls, emails, and the sharing of information and data.

The Permian Basin Regional Planning Commission Economic Development District seeks to realize the vision of an economic development district designation, supports the efforts of the CEDS committee in the plan's development, and is dedicated to achieving the CEDS goals and objectives. The Planning Commission would like to acknowledge the following individuals for their contribution. Many more contributed anonymously through surveys, participation in online polls, and contributions through Twitter.

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- Pamela Welch, Midland Development Corporation
- Zach Gilbert, Midland Development Corporation
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- Mayor Shelly Phillips, City of McCamey
- Virginia Belew, Permian Basin Regional Planning Commission
- Cristal Firestone, Permian Basin Regional Planning Commission

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