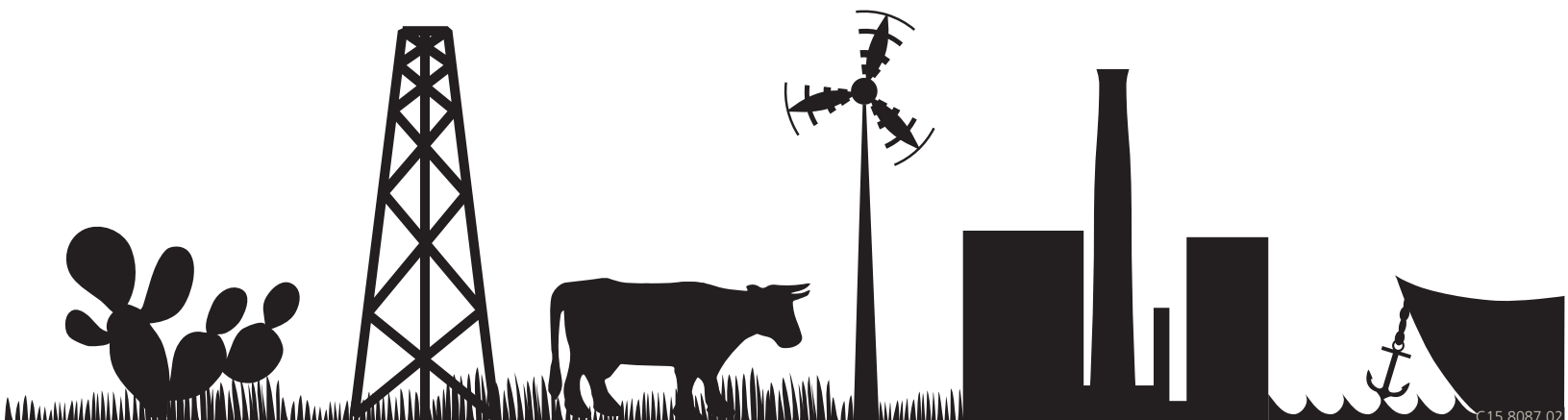




# South Texas Strategic Competitiveness Study

March 2015

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# **South Texas Strategic Competitiveness Report**

**Prepared for:**  
**Economic Development Administration**  
**Austin, Texas**  
**2014**

This Technical Assistance Project was accomplished by the Texas A&M Engineering Extension Service (TEEX) under Project No. 08-06-04809. The statements, findings, conclusions, recommendations, and other data in this report are solely those of the Grantee and any contractor and do not necessarily reflect the views of the Economic Development Administration.



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## I. EDA EXECUTIVE SUMMARY

Knowledge Engineering (KE), the Economic Development, Market Intelligence, and Community Development unit of the Texas A&M Engineering Extension Service (TEEX), conducted an assessment of the global competitiveness of the South Texas Region in order to determine clusters for development and growth that support manufacturing, logistics, and “onshoring” of jobs. This project included a thorough analysis and evaluation of the factors within the region that enhance the strengths of the region, increase manufacturing opportunities, promotion of South Texas, and increase key workforce opportunities. The following are the final report key findings:

- Regional growth is being driven by the surge in oil and gas production in the Eagle Ford Shale (ESF) formation
- Inbound investment for new manufacturing outlay exceeded \$70 billion
- There has been significant enhancements in both healthcare education and medical services across the region
- Emerging clusters within the manufacturing and assembly industries include aviation/space, healthcare, light manufacturing, and the oil/gas service industry
- Increasing housing demand and adequate supporting infrastructure to keep pace with growth remain an emerging concern
- Growth within the oil/gas and manufacturing sectors in the Coastal Bend region has increased pressure to source and train the growing workforce demands; a major impediment is identifying workers that are capable of passing the drug screening requirement for employment
- International trade and logistics with Mexico continues at a steady pace. Some manufactures are shifting assembly of products across the border to Texas to address crime concerns
- Over the past few years there has been increased regional cooperation due to common challenges and growth concerns
- The region is home to two of the nation’s leading sea ports on the Gulf Mexico, Corpus Christi and Brownsville; each with tremendous growth capacity and poised to attract new business and jobs
- Airport facilities across the region are being improved and expanded to attract high-end cargo
- Accessibility to major traffic arteries is a great advantage for companies located in the region
- Branding the South Texas region should be an ongoing endeavor for communities to position their areas for inbound business and the expansion of existing industry
- Increased investment in higher education across the region is planned to address the need for a trained workforce as well as assist in closing the ‘wage gap’
- Water will increasingly become an issue as the region determines alternate sources such as desalination
- The competitive cost of utilities, specifically water and electricity, are positive aspects of the area. Some industries rely on this low cost more than others.



## II. EDA: SOUTH TEXAS INTRODUCTION

Dynamic growth of the Texas economy over the past two years is highlighted by the extensive diversification of business activity and services in the South Texas region. In early 2013, the Knowledge Engineering (KE) group at the Texas A&M Engineering Extension Service (TEEX) was engaged to conduct a strategic global competitive assessment of the fifteen county region of South Texas, for the area south of the Nueces River and extending to the Rio Grande and the Gulf of Mexico.

The primary focus of the study was to conduct an overall strategic competitive assessment of the region and evaluate and identify opportunities in the areas of growth, change, models for attraction of new business and employment, as well as a review of the emerging “industry” clusters across the region. The emphasis of the study was to enhance job creation, regional manufacturing, and private and public resources to brand and market business opportunities. The project team conducted numerous on-site meetings with both the public and private sector stakeholders to include, surveys, Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, data analysis, and detailed literature reviews. This South Texas study does not focus on direct cross border commerce with Mexico (i.e. trade and transportation, maquiladoras, brokerage services), unless such activity was creating jobs, infrastructure enhancements, or investment in the region. However, the annual rise of cross-border trade due to North American Free Trade Agreement (NAFTA) has greatly benefited all of South Texas.

The fifteen south Texas counties included in the study are: Webb, LaSalle, Nueces, Zapata, Kenedy, Willacy, Cameron, Hidalgo, Starr, Jim Hogg, Brooks, Kleberg, Jim Wells, McMullen and Duval. Employment data for each county and significant commercial trends were accumulated from primary sources as well as meetings with city officials, economic development agencies, port authorities, and private sector industry.

One of the overarching trends/impacts has been the meteoric rise of oil and gas activity in the Eagle Ford Shale region, which encompasses direct on-sight drilling and service operations in Webb, LaSalle, Duval, McMullen, and Zapata counties and a secondary impact upon the rest of the region. This Eagle Ford Shale impact included producing one million barrels per day by September 2014, which will have a lasting impact on the future of South Texas and the national economy, addressing energy independence from foreign suppliers.<sup>1</sup>

<sup>1</sup> Laredo Chamber of Commerce, “Vision 2014: Economic Outlook Report” Laredo: May 2014, pp. 1-11; Chris Ramirez, “Local economy in high-energy growth,” *Corpus Christi Caller*, January 14, 2014, p. 1; Steve Clark, “Power Surge: Mexico energy reform could boost Valley,” *Monitor*, June 8, 2014, p. 1; Andrew J. Cassey, Analyzing the Export Flow from Texas to Mexico,” *Staff Papers*, Federal reserve Bank of Dallas, October 2010, pp. 1-16; Pablo Camacho Gutierrez, “How Has NAFTA Affected Laredo?” Laredo Chamber of Commerce, *Vision 2013*, p. 6 noted: “Overall, the effect from NAFTA is a reduction in the barriers to international trade among Canada, Mexico and the U.S.; in other words, an increase in the volume of goods from these countries that cross their common borders was expected to occur as a result of NAFTA.”

**Figure 1: Map of South Texas - 15 County Region**





The following section will highlight key components relating to the dynamics of the South Texas region in the areas of: Current Labor Markets Status, Workforce, Infrastructure, Housing, Water Resources, Healthcare, Education, Manufacturing and Assembly, and Regional Cooperation and Commercial Interaction.

## A. CURRENT LABOR MARKET STATUS

The Texas Workforce Commission released the September 2014 employment reports in October. These reports are based on metropolitan statistical areas (MSA), which are geographical regions with a dense population and similar economics throughout the area. The Corpus Christi, Laredo, McAllen-Edinburg-Mission, and Brownsville-Harlingen MSAs are analyzed and included in the following section.

Unemployment rates have been decreasing at the national, state and regional level with some counties decreasing over 1%. The following table illustrates the significant changes in the percentage of unemployment from September 2013 to September 2014. Rising employment rates and increased energy sector activities will boost economic and consumer confidence and will edge unemployment rates toward continued improvement. The challenge for these MSAs is to continue to develop the education system to fit the needs of the business community and create a talented workforce pipeline.

**Figure 2: Unemployment Trend by Metropolitan Statistical Area (MSA) \***

MSA	Sep-13	Sep-14	Change	Dec-13	Dec-14	Change
Corpus Christi	6.0%	4.9%	-18.3%	5.5%	4.3%	-21.8%
Laredo	6.5%	5.4%	-16.9%	5.9%	4.4%	-25.4%
McAllen-Edinburg-Mission	10.5%	8.5%	-19.0%	10.4%	7.8%	-25.0%
Brownsville-Harlingen	9.9%	8.0%	-19.2%	9.4%	7.2%	-23.4%

*\* For detailed MSA regional information see section VIII. A. MSA Economic Profiles*

### Corpus Christi

The Corpus Christi MSA includes the counties of Aransas, Nueces and San Patricio. As of 2014, the area is projected to have a population of 442,756, which is expected to increase by 3.6% to 458,820 by 2019. The three largest industry sectors in the area are Trade, Transportation and Utilities; Government; and Education and Health Services. The industry sectors with the largest annual percentage increase in employment are Mining, Logging and Construction; Leisure and Hospitality; and Other Services with increases of 8.3%, 6.6% and 5.1%, respectively. The current unemployment rate of 4.9% is the lowest the area has seen since late 2008.

### Laredo

The Laredo MSA covers Webb County. This area is estimated to have a population of 260,411 and is expected to increase by 7.3% to 279,492 in 2019. The largest industry sectors are Trade, Transportation and Utilities; Government; and Education and Health Services. The industry sectors with the largest annual percentage increase in employment are Leisure and Hospitality, Mining,

Logging and Construction, and Other Services with increases of 10.1%, 6.5% and 4.2%, respectively. The September 2014 unemployment rate of 5.4% is the lowest the area has seen since the end of 2008.

#### **McAllen-Edinburg-Mission**

The McAllen-Edinburg-Mission MSA is comprised of Hidalgo County. The area is estimated to have a population of 814,321 and is expected to increase by 8% to 879,729 in 2019. The largest industry sectors are Education and Health Services; Government; and Trade, Transportation and Utilities. The industry sectors with the largest annual percentage increase in employment are Education and Health Services, Other Services, and Professional and Business Services with increases of 4.8%, 3.4% and 2.7%, respectively. The September 2014 unemployment rate of 8.5% is the lowest the area has seen since the end of 2008.

#### **Brownsville-Harlingen**

The Brownsville-Harlingen MSA includes Cameron County Texas. This area is estimated to have a population of 421,852 and is expected to increase by 5.8% to 446,408 in 2019. The largest industry sectors are Education and Health Services; Government; and Trade, Transportation and Utilities. The industry sectors with the largest annual percentage increase in employment are Other Services, Education and Health Services, and Leisure and Hospitality with increases of 5.4%, 4.7% and 3%, respectively. The September 2014 unemployment rate of 8% is the lowest the area has seen since the end of 2008.

**Figure 3: Educational Attainment by MSA**

Education Level	Corpus Christi	Laredo	McAllen-Edinburg-Mission	Brownsville-Harlingen
< Grade 9	9.90%	22.00%	25.40%	23.70%
Grades 9-12	10.70%	13.80%	13.60%	13.30%
High School	27.60%	21.40%	24.30%	24.00%
Some College	25.50%	19.60%	17.00%	18.70%
Associate Degree	6.50%	6.10%	4.20%	5.70%
Bachelors Degree	12.70%	12.40%	11.70%	10.10%
Graduate Degree	7.10%	4.70%	4.30%	4.50%

## **B. WORKFORCE**

The South Texas regional generation of oil and gas has created a windfall of job opportunities and a major demand for a skilled, qualified and trainable workforce. The oil and gas industries have drawn a large number of workers from all across South Texas, the northern U.S., as well as in-bound immigration from Mexico. These workers are attracted to the higher paying manufacturing jobs throughout the Eagle Ford area, the Coastal bend region, as well as light manufacturing employment across all fifteen counties. The attraction of workers to these new job sectors initiated a negative impact upon municipal, school district, and government employees who are attracted to positions paying higher wages. The Achilles heel for the South Texas region is focused on three

primary dynamics: 1) Drug Screening/Testing - workers must be capable of passing a drug screening test; 2) Certifications - workers must have certifications and/or be trainable in order to obtain many of the higher skilled jobs; and 3) Workforce Shrinkage - while the local available workforce continues to shrink, there is a slowdown of in-migration of workers coming from outside the state. J.J. Johnson, Director of Administration for TPCO American Corporation, a seamless steel pipe manufacturer, summarized the concerns and challenges of the region related to industrial growth: "Where do we get trainable workers?"<sup>2</sup>

Concerns for attracting an available skilled workforce for the high demand positions such as welders, electricians, pipefitters, plumbers, and CNC operators, have been at a critical stage not only for the Eagle Ford region, but also in the rapidly growing industrial region around Corpus Christi and in the Rio Grande valley. The Corpus Christi region and three county region around Nueces County has in excess of a combined \$50 billion in industrial work underway and planned. Additionally, the Port of Corpus (POCCA) will began the construction of a new \$1 billion elevated bridge over the waterway into the port and invest \$40 million to dredge the widening of the La Quinta ship channel.<sup>3</sup>

The Brownsville/McAllen region is experiencing labor pressures in a rapidly growing number of industries to include healthcare, incoming investment by SpaceX's orbital launch and space operations at Boca Chica, gradual cross-border migration of light manufacturing/assembly operations, and expanding operations at the Port of Brownsville. Competitive labor rates, inexpensive energy (primarily LNG), and a shift in cost structures across industry have made Texas an attractive location to manufacture and grow business for both the domestic and export markets.<sup>4</sup>

Access to regional education and workforce training remains a critical local issue. To date a number of Community colleges are providing workforce training, however, the low production rate does not meet the projected growth demand.

## C. INFRASTRUCTURE

With growth, expansion, and development, new industries create a corresponding demand for all levels of improved infrastructure to facilitate the growth, movement, safety, communications, and interaction of the region with the rest of the nation.

Roads and bridges have incurred significant damage and degradation, and there has been very little action to keep pace with repair and road conditions due to the increased traffic. The degradation of county roads and requests to the state to provide funding for infrastructure repairs has created concerns regarding the long-term impact of the industrial infrastructure across the region.<sup>5</sup>

<sup>2</sup> "Gone to Texas: Immigration and the Transformation of the Texas Economy," Dallas Federal Reserve, November 2013, pp. 1-17; "A Shared Journey," *New York Times*, at [www.nytimes.com/interactive/2014](http://www.nytimes.com/interactive/2014) ; Interview with J.J. Johnson, Corpus Christi, Texas, Feb. 13, 2013.

<sup>3</sup> Chris Ramirez, "La Quinta dredging saves iron plant [Austria-based Voestalpine group] deal," *Corpus Christi Caller Times*, February 2, 2014, p. 1; Ramirez, "TPCO plant moves to next phase," *Caller*, March 23, 2014, p. 1; Janet Cunningham, "Jobs Today and Jobs Tomorrow," *Shale Magazine*, February 2014, pp. 16-18.

<sup>4</sup> Harold L. Sirkin et al, "The U.S. as One of the Developed World's lowest-Cost Manufacturers," Boston Consulting Group, August 20, 2103.

<sup>5</sup> Vianna Davila, "S. Texas county sues over funds to fix roads," *San Antonio Express-News*, May 5, 2014, p. 1; Ana Campoy, "Drilling Strains Rural Roads," *Wall Street Journal*, July 12, 2012, p. A3.

Another critical element of the Texas economy involves the eleven sea ports on the Gulf of Mexico which collectively handled over 600 million tons of cargo in 2012. Among these ports are the facilities at Corpus Christi and Brownsville. These ports have unique niche markets and are among the fastest growing ports in the region. The Port of Corpus Christi (POCCA) has long been a bulk facility with extensive operation in support of the oil and gas industry. Over the past three years POCCA has rapidly outgrown its available land for dock and warehouse expansion. The port is maximizing land use and repurposing existing facilities. In addition to the rapid growth in trade activity, the port is active in deepening its primary channel (52-ft deep) as well as awaiting a billion dollar replacement of the harbor bridge over the next two years.<sup>6</sup>

In like fashion, the Port of Brownsville has extended operations, added new docks, and is sourcing additional business in both the fabrication of oil platforms as well as a major salvage location for decommissioned U.S. Naval vessels. Infrastructure around the port has been enhanced to allow more access to business from Mexico. The port has ample land and is near the new location at Boca Chica of SpaceX operations which will experience major growth in the upcoming months.<sup>7</sup>

Together the ports are primary generators of both direct and indirect jobs. There will be a need for the relocation of suppliers and industrial services into the region to handle the upcoming growth. Both ports will benefit from the expansion of the Panama Canal and the trans-shipment of industrial and bulk commodities – to include agricultural products as well as steel coils, plates, and slabs. Linkage in the Gulf of Mexico to enhance short-sea-shipping and to establish port-to-port sea bridges to partner ports will drive more business to south Texas ports and have a positive multiplier impact of both the Texas and national economy.<sup>8</sup>

Other infrastructure enhancements across the South Texas region included expanded rail service and the addition of new electrical generating capacity to address the growing demand. For example, rail connectivity from the ports of Brownsville and Corpus Christi will be important to inner harbor operations as well as staging for inland cargo terminals.<sup>9</sup>

## D. HOUSING

Affordable, available housing across South Texas continues to be a major challenge for transient workers flooding the region.

Affordable housing across South Texas continues to be a major drag on locating workers near their jobs, especially in the Eagle Ford Shale region. The rapid housing demand created by the oil and gas activity has spread across the region. The challenge falls into three categories:

- Existing housing was quickly absorbed, especially in the six county area around the Eagle Ford Shale play. Complicating increased demand, existing prices rose and all available

<sup>6</sup> Texas Ports Association, "The Economic Impact of State of Texas Ports and Maritime Industry," Martin Associates, November 2012; Interview with Port Director John LaRue, Corpus Christi, 2014.

<sup>7</sup> The Port of Brownsville, "The Local and Regional Impacts of the Port of Brownsville," Martin Associates, September 2012; Brownsville Economic Development Council, "Brownsville MSA & Matamoros: Market profile 2012," www.BEDC.com, 2012; Interview with Port Director Eduardo Campirano, Brownsville, 2014: Satmex signs agreement to work with Space X," *Brownsville Economic Journal*, Summer 2013, p. 36.

<sup>8</sup> Barry Lawrence, "Texas-Mexico Corridor Consortium," April 2010, pp. 26-30.

<sup>9</sup> Jim Malewitz, "Texas Nuclear Power Plants Seek New Workforce," January 12, 2014, www.texastribune.org.



housing was quickly occupied. By late 2014, due to a building spree, the Rio Grande Valley indicates steady growth in housing inventory.<sup>10</sup>

- The result of this rapid housing shortage and continued demand was the creation of a cross-section of fabricated-temporary housing structures, referred to as “man camps.”
- The third dynamic impacting the region was the shortage of ready-to-build lots. The delay in bringing new lots to market is directly related to the cost of land and infrastructure required. Additional delays were caused by zoning issues, builder’s fear of the market demand, and bankers being cautious to lend, given their memory of the downturn in 2008.<sup>11</sup>

One critical housing shortage component is the availability of affordable homes for teachers, government employees, and service providers that may be on fixed incomes. For example, the problem is very acute in Cotulla and Alice, where the lack of housing has greatly impacted the attraction and employment of teachers for their school districts. A study commissioned by the Alice-Jim Wells County Economic Development Corporation, “showed the city will need housing of 940 units, split between 290 single-family homes and 650 apartments, over the next five years.”<sup>12</sup>

Dozens of temporary locations/structures or “man-camps” composed of various styles of trailers and module structures are often located in highly concentrated groups. Such clusters of worker housing place a strain on the local communities and do not generally lend themselves to family friendly settings. Furthermore, most South Texas communities had no regulations or zoning to address such rapidly rising clusters of pre-fab housing. This growth is a strain on local water and waste water capacity as well as services from trash collection to law enforcement.

The housing news is not all challenging. The flood of industry to the region has created a rapid growth in hotels in the Eagle Ford region, for example Cotulla currently has 17 hotels with over 700 rooms. Hotel-motel revenue stays within the local economy creating a positive multiplier impact for local investment and driving local sales tax revenue upward.

## E. WATER RESOURCES

One of the most critical factors for economic growth and sustainability is water. South Texas in general and the state of Texas in particular has been under the threat of drought, or at least a shortage of supplies of potable water, for nearly a decade. The needs are especially acute in the South Texas/Border Region because of ongoing drought conditions, long-term water management issues in the Rio Grande basin, and new development taking place in the Eagle Ford Shale play. Severe and localized droughts resulted in 2011 being the driest year since record keeping began in 1895. Fresh water is the life blood to our urban areas, in agriculture, and is a key component in the process of oil refinement.<sup>13</sup>

<sup>10</sup> Chris Ramirez, “Coastal Bend home prices on upswing,” Corpus Christi Caller Times, *January 28, 2014*; “Rio Grande Valley Housing” Metrostudy 2Q14,” Metrostudy News, September 25, 2014.

<sup>11</sup> Philip Balli, “Lots few for new houses,” Feb 17, 2014 and Malena Charur, Realtor: Shortage of lots for homes,” February 26, 2014 both in *Laredo Morning Times*.

<sup>12</sup> Nadia Tamez-Robledo, “Schools struggle to find teachers amid Eagle Ford Shale-related housing shortage, wage competition,” Scripps media, August 12, 2014.

<sup>13</sup> Emily Kerr, “Brutal Drought Depresses Agriculture, Thwarting U.S. and Texas Economies,” *Southwest Economy*, Federal Reserve Bank of Dallas, Fourth Qtr., 2012, pp. 10-13.





The demand for water becomes more acute given a number of dynamics across the region:

- There has been a rapid population growth and influx of people into the urban area across South Texas, as well as a corresponding growth in rural areas in the Eagle Ford Shale play due to inbound employment and demand for housing and services.
- The Eagle Ford region, due to the fracking process, is demanding a tremendous amount of water. The Texas Railroad Commission which monitors water use related to oil and gas exploration has noted that for the near term there is “enough water to support oil and gas development.” However, other studies have challenged the increased use of water for drilling.<sup>14</sup>
- Demand for irrigation water has continued and supports a major part of the agricultural sector across the region. Both surface water storage and underground water supplies have diminished over the past decade. An additional factor impacting water is the management and usage in the transboundary aquifers along the Rio Grande. Reservoirs in the Rio Grande basin have been low for over a decade due to the historical shortage of recharge from snowmelt runoff from the Rocky Mountains.<sup>15 1617</sup>

The ongoing debate regarding investment in desalination technology to mitigate the possible shortfall of water resources is an emerging development that will have long-range impact on South Texas competitiveness. The process of removing salt from brackish or saltwater can result in potable water for both industry and residential use.

To move toward the investment in a robust desalination program requires both political will and a long-term vision to invest in the future. Proposition 6, Texas’ Water Fund was approved by voters to allow the transfer of \$2 billion from the State’s Rainy Day Fund to be made available to finance water projects.<sup>18</sup>

### **Water Desalination**

While the region is primarily dependent on surface water, supply is also fed by four underground aquifers. The water from these aquifers is primarily used in agricultural irrigation. In South Texas, the demand for irrigation water is expected to decrease by 16% in 2060 while the demand for municipal use is expected to increase by 124%.<sup>19</sup>

The influx of workers in the Eagle Ford Shale region and seemingly permanent drought has caused a strain on already beleaguered water supplies within the South Texas region. Texas currently has more than 100 desalination plants with around 40% of those being tied to municipalities. Most current operations focus on removing salt content from brackish ground or underground water. The concept of removing salt from seawater is a hot topic and it is speculated that this method will be twice as costly as the current method of operations. The past method of creating usable water

<sup>14</sup> David Porter, “Eagle Ford Task Force Finds South Texas Water Supply Sufficient,” Texas Railroad Commission, January 26, 2012; Chris Ramirez, “Report: [Boston based Ceres group] Water supply hurt by fracking,” Corpus Christi *Caller Times*, March 26, 2014.

<sup>15</sup> Texas AgriLife, “Efficient Irrigation for Water Conservation in the Rio Grande Basin,” Texas A&M, 2012;

<sup>16</sup> “United States-Mexico Transboundary Aquifer Assessment Program,” USGA, 2014

<sup>17</sup> Ari Michelsen, “Drought Watch on the Rio Grande,” Texas A&M El Paso AgriLife Center, April 12, 2014.

<sup>18</sup> Chris Ramirez, “Drought lifts prospects for desalination,” *Caller Times*, March 2, 2014.

<sup>19</sup> <http://twri.tamu.edu/docs/education/2012/em115.pdf>



was to develop reservoirs or wells, which is not as practical today. The solution to this problem will ultimately be unique to each region throughout the state.<sup>20</sup>

There are three main problems to consider when planning for the future of Texas water desalination:

- The cost of the technology is still high when compared to drawing freshwater from traditional sources. While transportation makes up a large part of that cost, energy costs can account for up to 50%, making even coastal plants costly to operate.<sup>21</sup>
- In desalination of brackish groundwater, property rights can be violated in the aspects of exclusivity and specificity.
- The improper discharge of waste brine could cause damage to the local oceanic ecosystem.<sup>22</sup>

With those factors being considered, there are also advances being discovered:<sup>23</sup>

- First, some companies are exploring the possibility of refining the by-product for materials like gypsum, hydrochloric acid and pavement additives that could be useful to industrial endeavors.
- There are also new technologies emerging that help make large-scale projects more economically and environmentally feasible.
  - New filters have been developed for reverse osmosis plants that utilized half the pressure needed for traditional filters. This drop in pressure is estimated to lower energy costs by 15-20%.
  - Forward osmosis uses osmotic pressure rather than energy to force water through membranes. Plants using this technology are already in place in some countries in the Middle East.
  - Capacitive deionization removes salt and other dissolved minerals by passing saline water between two oppositely charged electrodes, which removes the sodium and chloride ions by pulling them through a membrane. This leaves only freshwater behind and is more energy efficient as stored energy can be reused.
  - Electrochemically mediated desalination was developed in part by researchers from the University of Texas at Austin. This is one of the most recent discoveries and has revolutionary implications. This process works by relying on a plastic chip that uses a small electrical field to separate salt from water. While this process is not yet commercially viable, it requires very little energy and is simpler than existing technologies.

There are currently 12 desalination plants in the South Texas and Coastal Bend Regions with over 65% of those operations being located in South Texas. All of these plants use reverse osmosis in their desalination processes and operate at up to 20 million gallons per day.

<sup>20</sup> <http://kxan.com/2014/06/04/is-desalination-texas-water-future/>

<sup>21</sup> <http://www.bloomberg.com/news/2013-05-01/energy-makes-up-half-of-desalination-plant-costs-study.html>

<sup>22</sup> <http://www.worldissues360.com/index.php/the-pros-and-cons-of-water-desalination-plants-3743/>

<sup>23</sup> <http://www.window.state.tx.us/specialrpt/water/gamechangers/desalination.php>

## F. HEALTHCARE

A growing economy creates corresponding pressures and greater demands for healthcare services. South Texas has historically been an underserved region. The impact of the Eagle Ford Shale on the delivery of area-wide healthcare services vary across the region, and the overall development of the shale has placed increased pressure on the areas infrastructure. The increase in population in this region has also given rise to varying healthcare needs. Attention to healthcare sustainability related to growth in the region includes a focus on adequate access to healthcare services, availability, delivery, dependability, and affordability. However, during 2013-2014 major strides were made in the region to enhance medical higher education and increase the number and quality of healthcare facilities.

Healthcare is a growing industry and a vital part of the South Texas economy in metropolitan areas. Healthcare employment in the region is increasing rapidly, and growth in the healthcare industry will continue. The region faces a number of challenging issues in providing healthcare to its residents. A primary concern is the limited access to healthcare facilities and providers, increased number of the uninsured and self-pay patients and a higher-than-average prevalence of chronic diseases and on the job injuries pose difficult and expensive challenges for South Texas businesses, their employees and state and local governments.<sup>24</sup>

**South Texas Counties Without a Hospital and  
Primary Care Health Professional Shortage Areas, 2007**



<sup>24</sup> <http://www.window.state.tx.us/specialrpt/tif/southtexas/healthcare.html>



In the counties without a major university or high population density, healthcare has lagged and many residents are without hospitals or emergency services. Examples of underserved counties include LaSalle, Jim Wells, Karnes, and Kenedy. Given the surge in oil and gas activity there has been a growing demand for primary healthcare services as well as emergency services. While many communities provide ‘clinic,’ services, these do not fully address the growing demand for medical services. Many facilities are open only during the day and do not provide emergency care or trauma care support services. For critical cases, patients have to be transferred to larger metropolitan areas such as San Antonio, Laredo, Corpus Christi, or one of the regional hospitals in the Rio Grande Valley.

Interviews with hospital administrators and board members across the region revealed continued difficulty in attracting and retaining physicians, nurses and other medical professionals. Local educational institutions are producing additional healthcare professionals but not at a rate to keep pace with the growth of the region. This industry presents a prime and vital opportunity for growing employment in the healthcare sector. Since 2000, the growth in local employment attributed to healthcare jobs has increased faster than the state average in every border metropolitan area in the South Texas region.<sup>25</sup>

Nearly 10 percent of South Texas border workers are employed in the home healthcare industry, compared with 2.2 percent statewide. In the 1990s, shares were about the same. The expansion likely reflects high rates of border poverty and chronic disease, along with low accessibility to preventive care and other factors.

Higher public sector spending has largely paid for the expansion. Government transfer payments for medical benefits in the region grew at an inflation adjusted rate of 8.5 percent annually between 2000 and 2010. Federal budget cuts beginning in 2012 abruptly halted spending growth, straining home healthcare agencies that rely on government reimbursements. As a result, home healthcare job growth slowed.<sup>26</sup>

## G. EDUCATION

One very positive trend developing in the South Texas region has included increased investment in higher education. A combination of factors have transpired to enhance affordable educational opportunities as well as attract more investment to the region. One highlight is the Texas A&M University-University of Texas joint agreement to create a medical school in South Texas. These efforts are slated to raise standards across the region as well as provide more access to healthcare.<sup>27</sup>

Access to education is critical to future development of the South Texas workforce. As a historically poor region, a wide earnings gap exists for individuals without education or employable skills. Additional educational attainment drastically reduces the wage gap and increases household

<sup>25</sup> [http://www.window.state.tx.us/specialrpt/tif/southtexas/pdf/07\\_Health\\_Care.pdf](http://www.window.state.tx.us/specialrpt/tif/southtexas/pdf/07_Health_Care.pdf)

<sup>26</sup> Christopher Slijk, “Health Care: Medicaid Surge Along Border Signals Spending Rise,” *Southwest Economy*, Federal Reserve Bank of Dallas, Fourth Quarter 2014, p.14.

[http://www.window.state.tx.us/specialrpt/tif/southtexas/pdf/07\\_Health\\_Care.pdf](http://www.window.state.tx.us/specialrpt/tif/southtexas/pdf/07_Health_Care.pdf)

<sup>27</sup> Reeve Hamilton, “New degree available,” *McAllen Monitor*, February 6, 2014, p. 3.



income and buying power. In a detailed report by the Dallas Federal Reserve Bank, it concluded that, “Education is highly correlated with wages.” Low education equals lower earnings.<sup>28</sup>

Post-high school education has increased the number of programs in a number of critical areas that will impact future jobs in the region. The emergence of a healthcare consortium in the Lower Rio Grande Valley will add a great deal to address the need for medical professional in a broad number of disciplines.

The expansion of the aviation industry in the San Antonio region, addition of drone research centered at Texas A&M University Corpus Christi, and the nation’s largest deal funding SpaceX’s commercial rocket launch facility in Boca Chica at the tip of Texas will result in increased demand for trained aerospace mechanics and technicians. Currently three regional colleges – Coastal Bend College, Texas State Technical College Harlingen, and Del Mar College -- offer limited aerospace programs in avionics, airframe and power plant, and aviation maintenance.<sup>29</sup>

Eagle Ford Shale activity continues to drive job creation in South Texas and the continued demand for increased capacity to train and certify a workforce to fill high demand job opportunities in welding, CNC, electrical, HVAC, and materials handling. Regional colleges have enhanced and developed new programs, yet demand has out stripped supply.<sup>30</sup>

The Council of Governments (COGs) across the region and the Texas Workforce Commission are aware of the education and workforce challenges and together have directed a tremendous amount of effort assisting in programs to expand job training and placement, as reflected in the Coastal Bend Council of Governments, “2011 Comprehensive Economic Development Strategy.”<sup>31</sup>

The Site Selection Group, a strategic location solutions company, compiled a list of the top 20 fastest growing metro areas by potential student population for 2014 through 2019. Potential population is defined as the population between the ages of 18 through 34 that has an education attainment of a high school diploma or equivalent or some college but no degree, and is currently not enrolled in a post-secondary education institution. The South Texas Region includes four of the top twenty areas: Brownsville-Harlingen, McAllen-Edinburg-Mission, Laredo, and Corpus Christi. Six of the top twenty areas in the nation are located in the state of Texas. The South Texas Region is poised for expansion of new campuses due to this projected student availability, competitive presence and employment demand in the area.

<sup>28</sup> Christina English, “For Hispanics, Border Wage Gap Reflects Education, English Divide,1,838” *Southwest Economy*, Federal Reserve Bank of Dallas, third quarter 2013, pp. 16-19.5,294

<sup>29</sup> “The Texas Aerospace & Aviation Industry,” [www.TexasWideOpenForBusiness.com](http://www.TexasWideOpenForBusiness.com), 2014pp. 7-10.

<sup>30</sup> Luis Torres, “Texas Industry Structure: How Much Does Texas Rely on Energy?” College Station: Texas A&M Real Estate Center, June 2013.

<sup>31</sup> Coastal Bend COG, “2011 Comprehensive Economic Development Strategy,” Corpus Christi: June 2011.



**Figure 4: Top 20 Fastest Growing Metro Areas for Potential Student Population 2014-2019**

	MSA	Absolute Change	Percent Change
<b>1</b>	<b>Brownsville-Harlingen, TX</b>	<b>4,137</b>	<b>9.68%</b>
<b>2</b>	<b>McAllen-Edinburg-Pharr, TX</b>	<b>7,917</b>	<b>9.37%</b>
3	Port St. Lucie, FL	3,970	9.30%
4	North Port-Sarasota-Bradenton, FL	5,648	9.12%
5	Naples-Immokalee-Marco Island, FL	2,438	8.71%
<b>6</b>	<b>Laredo, TX</b>	<b>2,404</b>	<b>8.67%</b>
7	Cape Coral-Fort Myers, FL	5,698	8.54%
<b>8</b>	<b>El Paso, TX</b>	<b>8,040</b>	<b>8.12%</b>
9	Ocala, FL	2,852	8.00%
10	Kennewick-Richland, WA	2,304	7.24%
11	Bridgeport-Stamford-Norwalk, CT	5,294	7.15%
12	Yakima, WA	1,838	6.60%
13	Riverside-San Bernardino-Ontario, CA	36,764	6.51%
14	Palm Bay-Melbourne-Titusville, FL	3,526	6.45%
15	Stockton-Lodi, CA	5,514	6.40%
<b>16</b>	<b>San Antonio-New Braunfels, TX</b>	<b>17,441</b>	<b>6.34%</b>
17	Merced, CA	2,006	6.21%
18	Lakeland-Winter Haven, FL	4,450	6.01%
<b>19</b>	<b>Corpus Christi, TX</b>	<b>3,055</b>	<b>5.57%</b>
20	Greeley, CO	1,899	5.52%

Source: Site Selection Group – Strategic Location Solutions <sup>32</sup>

## H. MANUFACTURING AND ASSEMBLY

The increase in manufacturing and assembly across the South Texas region is due to an increase and more diversification in manufacturing. The scope of projects due to the industrial construction boom has lead Jim Lee, Chief Economist at the EDA University Center at Texas A&M Corpus-Christi to conclude, “An industrial renaissance is emerging in South Texas.” The fact and dynamic of this statement is very compelling. <sup>33</sup>

The investment in industrial capital projects and the corresponding demand for construction labor and craft skills was confirmed by the Dallas Federal Reserve who first attributed credit for the surge to the growing energy boom and the refining and petrochemical industries that have added increased capacity. The growth of industry in the Coastal Bend region hallmarks one of the fastest growing economies in the Southwest United States. Furthermore, the current boom dates back to

<sup>32</sup> Josh Bays, “Top 20 Fastest Growing Metro Areas for Potential Student Population.” Site Selection Group Blog, January 16, 2015, <http://info.siteselectiongroup.com/blog/top-20-fastest-growing-areas-for-student-population>.

<sup>33</sup> “The Texas Economy and Employment: Short-Term Forecast Analysis, 2011-2014,” HIS Global Insight, October 5, 2012; Jim Lee, “Resurgence of an Industry,” *Economic Pulse*, Corpus Christi, 2014, p. 1.

2011 when Tianjin Pipe Company or TPCO began construction of a \$1 billion steel mill to produce seamless steel pipes in Nueces County.<sup>34</sup>

An additional dozen projects in the Corpus Christi region will require an estimated 1,300 new construction and craft workers per year on average through the end of 2017. See figure 5.

**“Because of Space X we will see the attraction of new technology and jobs for the state of Texas.”**  
- Governor-elect Greg Abbott, Texas One Dinner, December 4, 2014

**Figure 5: Forecast for Construction Occupations in the Coastal Bend Area**

Occupation	2013	2017	Percent Change	Actual Change	2013 Hourly Wage	Education Level
Construction Laborers	3,175	3,772	19%	597	\$11.66	Short-term on-the-job training
First-Line Supervisors	1,425	1,689	19%	264	\$24.43	Work experience in a related occupation
Operating Engineers & Other Equipment Operators	952	1,200	26%	248	\$15.68	Moderate-term on-the-job training
Carpenters	979	1,153	18%	174	\$15.32	Long-term on-the-job training
Plumbers, Pipefitters, & Steamfitters	1,055	1,221	16%	166	\$18.39	Long-term on-the-job training
Electricians	1,228	1,389	13%	161	\$19.84	Long-term on-the-job training
Construction Managers	663	795	20%	132	\$30.81	Bachelor's degree
Welders, Cutters, Solderers, & Brazers	400	498	25%	98	\$18.80	Postsecondary non-degree award
Heating, AC, Refrigeration Mechanics & Installers	389	483	24%	94	\$17.86	Postsecondary non-degree award
Office Clerks, General	579	670	16%	91	\$11.48	Short-term on-the-job training
Heavy & Tractor-Trailer Truck Drivers	414	498	20%	84	\$15.74	Short-term on-the-job training

Source: Texas Workforce Commission, Lee (2014, and author's calculations)

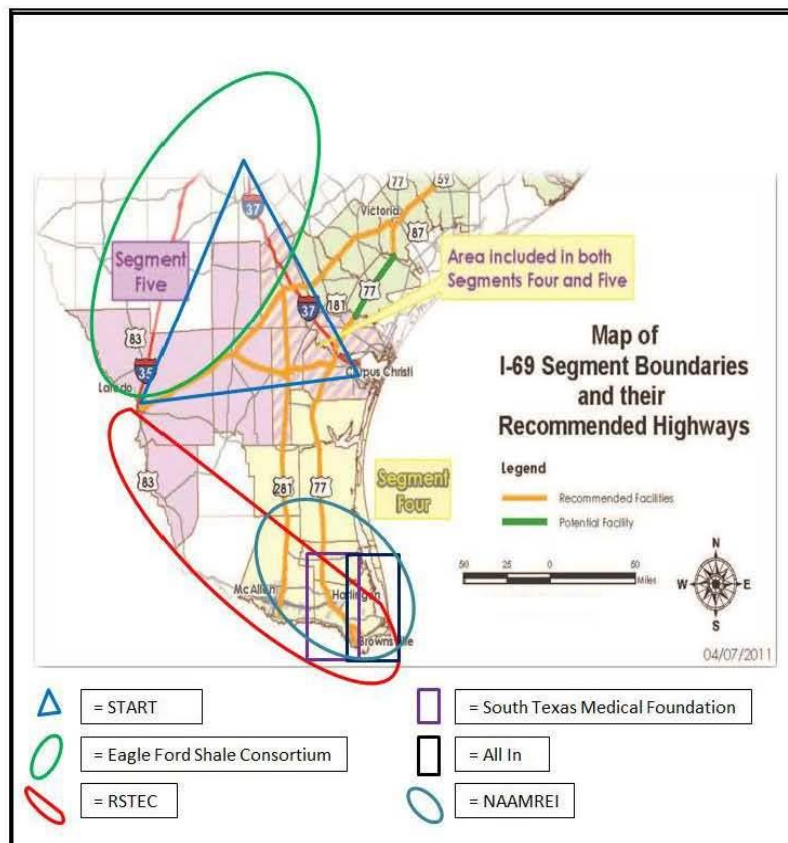
<sup>34</sup> Emily Kerr, et al, “Fed Manufacturing Surveys Provide Insight into National Economy,” *Economic Letter*, Dallas Federal Reserve, October 2014.

The demand for workers is also indicated in the Brownsville region as the Port of Brownsville expands both its construction of off-shore oil rigs and addressed long term contracts to salvage and dismantle decommissioned U.S. Naval vessels, to include three retired aircraft carriers.

The aviation-aerospace industry is an emerging industry sector with one of the estimated fastest growing potentials across the region. The Texas and South Texas economies will be able to take advantage of spin-offs from growing the ten major aviation manufacturing/assembly operations in the state, for example Ft. Worth (Lockheed and Bell), Greenville (L-3 Communications), and San Antonio (Boeing). Three significant developments will attract investment and the demand for skilled jobs: 1) plans of SpaceX to create a launch facility at the mouth of the Rio Grande, 2) the expansion and demand for Maintenance Repair Overhaul (MRO) operations and 3) the recent programs at Texas A&M Corpus Christi to develop and test drones.<sup>35</sup>

Projections for the manufacturing sector are positive. While the overall manufacturing sector employs 10% of the workforce (versus 25% in 1980), advanced manufacturing and on-shore assembly are robust. Manufacturing accounts for about one third of overall U.S. gross domestic product (GDP).<sup>36</sup>

**Figure 6: Map of Regional Trade Organizations**



<sup>35</sup> "The Texas Aerospace & Aviation Industry," [www.TexasWideOpenForBusiness.com](http://www.TexasWideOpenForBusiness.com), 2014; M. Lopez, "Brownsville Could Become Next Chronicle of Space History," [www.bedc.com/node/191](http://www.bedc.com/node/191), July 5, 2012.

<sup>36</sup> Justin Laharg, "U.S.'s Forgotten Economic Engine". [Wall Street Journal](http://WallStreetJournal), Dec. 1, 2014.

## I. REGIONAL COOPERATION AND COMMERCIAL INTERACTION

The past few years have demonstrated an increased awareness of regional cooperation addressing the challenges confronting the South Texas region. The establishment of multi-county arrangements have fostered collaborative environments to cooperate on regional problems, enhance education, partner to attract new business, and a united forum when dealing with state and federal agencies to attract new funding and infrastructure improvements.

The primary regional organizations include:

### **Rio South Texas Economic Council (RSTEC)**

The Rio South Texas Economic Council (RSTEC) is a public and private association of economic development interests within the four southernmost Texas counties (Starr, Hidalgo, Willacy, and Cameron). The mission is to pool resources to enhance knowledge of the area's many assets, enhance the area's competitiveness, strengthen the local economy, unify as a region to attract capital investment and jobs, and increase market access in both Mexico and the United States. These activities include a joint marketing effort and the development of a regional economic development strategic plan. The partners have identified the following regional economic development goals to guide the collaboration process:

- Unify and coordinate regional marketing efforts
- Develop a strategy for economic development and tourism along opportunity corridors
- Optimize trade opportunities from cross-border economic activities
- Oversee regional economic development strategic planning and identify implementation strategies
- Provide a forum for discussion of pressing issues facing regional economic development
- Provide education and training for the purpose of strengthening community economic development efforts <sup>37</sup>

### **Eagle Ford Shale Consortium**

The consortium representing 20 South Texas county collaborative partners was created as a direct result of the economic impact of the oil and gas exploration within the Eagle Ford Shale to address issues and plan for the sustainable future of the communities' growth, infrastructure, workforce training, and economic development. The primary objectives of the consortium are to develop and foster effective lines of communications with the oil and gas industry and local communities, coordinate workforce and education efforts to improve employment of dislocated and underemployed workers, coordination and collaboration to procure additional resources to benefit the workforce and community development efforts, and to maximize the economic opportunities available to communities within the region. <sup>38</sup>

<sup>37</sup> <http://www.riosouthtexas.com/rio>

<sup>38</sup> <http://www.eaglefordconsortium.org/>



### **South Texas Alliance for Regional Trade (START)**

The South Texas Alliance for Regional Trade (START) is a cooperative effort formed among three Texas Ports, Laredo, Corpus Christi and San Antonio, to strengthen the region's response to logistics and transportation needs. The coalition promotes the missions of the Ports and opportunities for cooperation in areas impacting the region such as trade, transportation, and economic development through joint marketing and communication efforts. START uses strategic partnerships to turn regional strengths into viable opportunities. The team works collaboratively to provide integrated and comprehensive support services including customs/brokerage; build-to-suit warehousing, manufacturing and office facilities; workforce development; and helping newcomers make important business connections with prospects, suppliers and other support services in the region and abroad. There are four key business sectors supported by START partners: Energy, International Trade Logistics, Aerospace and Military.<sup>39</sup>

### **North American Advanced Manufacturing Research and Education Initiative (NAAMREI)**

The focus of this initiative is to develop a world-class advanced manufacturing industry in the Rio South Texas Region. The initiative also seeks to develop rapid response advanced manufacturing capabilities through a variety of applied research, development, and demonstration programs and services through The University of Texas-Pan American's Rapid Response Manufacturing Center. The group includes over 60 partners in business, education, economic development, finance, government and industry. NAAMREI has research, development and demonstration capabilities available to help companies plan, design and prototype their future products. Other areas of support to enhance manufacturing include entrepreneurship support, creating a world-class talent workforce pool, bringing together diverse education partners, developing and recruiting a skilled talent pool for the new jobs in demand for the advanced manufacturing industry, and providing early-stage company incubation resources.<sup>40</sup>

### **Binational Border Economic Development (BiNED)**

Binational Border Economic Development (BiNED) is an integrated, innovative and competitive binational US/Mexico border economic mega-regional initiative focused on advanced, rapid response manufacturing. The US/Mexico Border economies need to work together as a single mega-region in order to fully capture the full economic potential of the region. The BiNED can further promote the message that the border is open for business and serve as a catalyst for new suppliers, manufacturing and creation of value-added job creation.

## **III. INDUSTRY CLUSTERS**

For the South Texas region to succeed and to continue its success for years to come, it is important to fully understand the impact that a cluster has for an industry and the region. This section presents the definition of clusters, cluster strategies and a summary of current Texas clusters. It is important to keep in mind the amount of integration required for a cluster and region to succeed. This integration bridges the idea of clusters with all other elements like the market analysis, the SWOT analysis and the supply chain analysis.

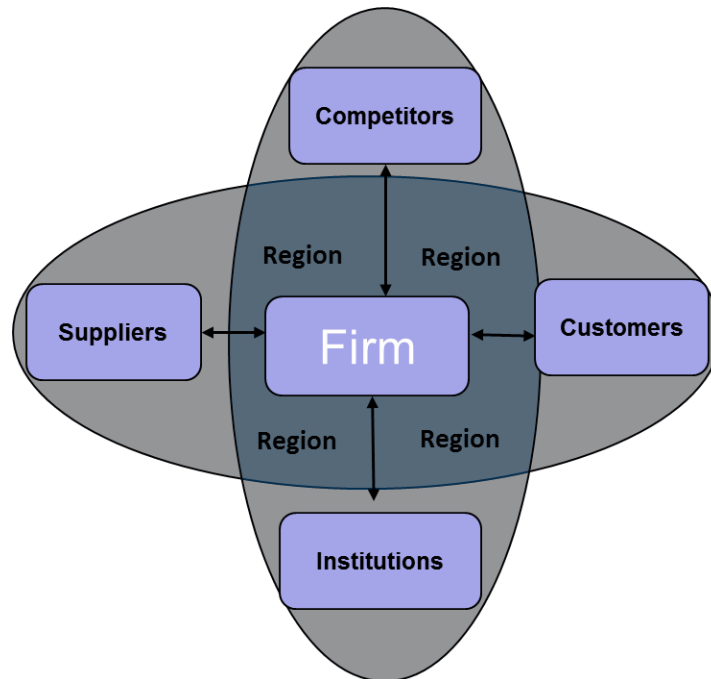
<sup>39</sup> South Texas Alliance for Regional Trade. <http://www.southtexastrade.com/wp-content/uploads/START-overview-Jan-15-2013.pdf>

<sup>40</sup> <http://www.naamrei.org/>

## A. DEFINITION

An industry cluster is defined as a geographic concentration of competing, complementary, or interdependent firms that do business, cooperate and compete between each other. These firms and industries have a common market, products, suppliers, needs or opportunities (Porter M., 2000).<sup>41</sup>

**Figure 7: Industry Cluster in a Region**



Source: *Location, Location: The Geography of Industry Clusters*, Schiele (2008)<sup>42</sup>

Clusters incorporate other industries and other entities important to the development, operation and growth of the whole sector. Examples of such other entities are the Government, economic development departments, universities, research institutions and training providers. Government and economic development departments play the role of moderator and regulator of the region; the universities and research institutions provide trained workforce and perform research for new technologies.

One industry sector needs to obtain supplies, transportation, and outsource work, etc. from other sectors. The supply chain is part of the infrastructure and a main condition that a region can offer. Other industry clusters, companies, industry sectors or institutions establish the integration of the supply chain. Clusters may include foreign firms if they make permanent investments and have significant presence in the region (Porter M., 2000).

Industry clusters are important in a region because they lead to economic growth and production efficiencies. Economic growth is reflected in more job opportunities, increased wages, more

<sup>41</sup> Porter, M. Location, competition, and economic development: Local clusters in a global economy. *Economic development quarterly*, 14(1), (2000) pp.15-34.

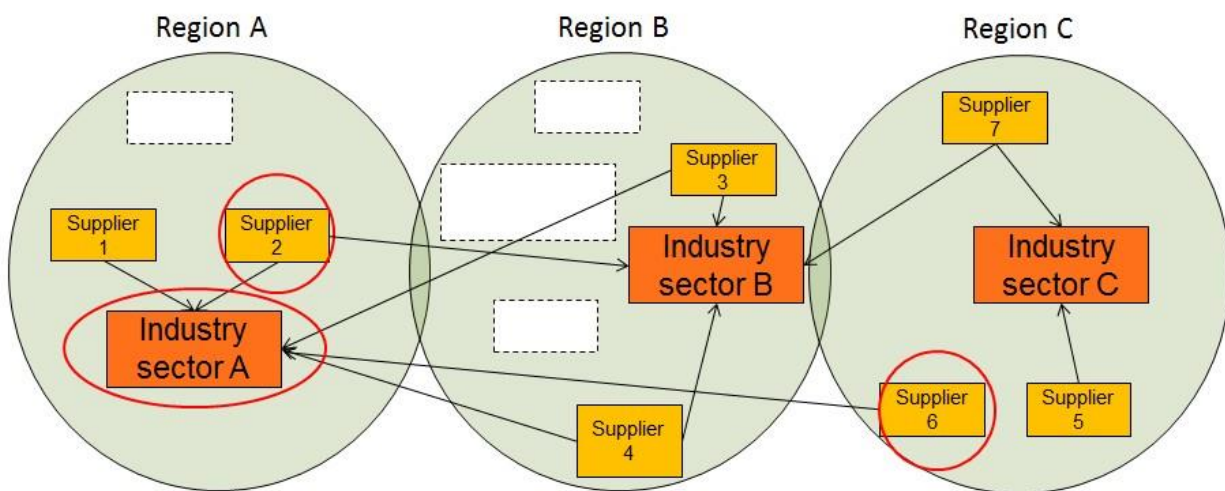
<sup>42</sup> Schiele, H., Location, location: The Geography of Industry Clusters. *Journal of Business Strategy*, (2008) pp.29-36.



infrastructure resources, such as education and improvements in quality life styles in the region. The production efficiencies permit the reduction of costs, improvement in production and innovation.

The importance of a cluster in terms of analysis is that it allows the capture of more information than other types of analysis, for example industry categorization. A cluster exposes important linkages between companies and industries, competitions and collaborations, opportunities and gaps of the region. These are important factors when attracting companies to the region. Regions can attract companies by offering a strong supply chain, collaboration, competition and market opportunities, or by showing the gaps that can still be fulfilled.

**Figure 8: Identifying Gaps in the Supply Chain**

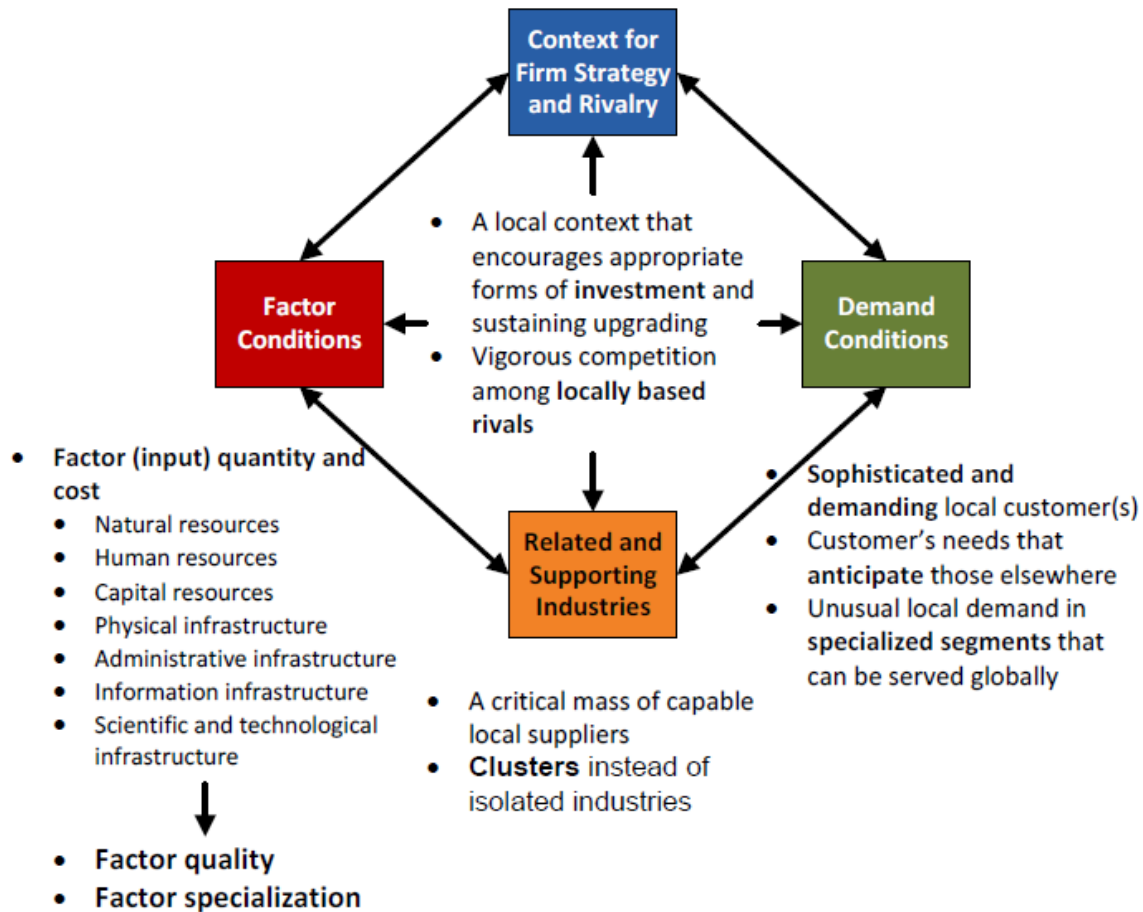


*Source: Global Supply Chain Laboratory, Texas A&M University*

Porter, professor at Harvard Business School, created a diamond model that offers insights into industry clusters and competitiveness (Porter M., 2000).

In the assessment and identification of gaps and factors impacting the flow of trade and supplies in the supply chain, it is critical to link commerce and industry clusters across regions as noted in Figure 8. The diamond model in Figure 9 provides a look at factors and the dynamics needed to better manage and expand movement of goods and services across any given region. The key components or 'factors' include: infrastructure, labor force, educational attainment, market size, customer needs, maturity, mix clusters, and sophistication of local suppliers. As demand increases, consideration of these factors become more important for existing suppliers as they recognize the need for service expansion and new supplier attraction when addressing new innovative industry clusters, such as the emergence in South Texas of a robust aviation/space sector.

Figure 9: The Porter Diamond Model



Source: Michael Porter, *Institute for Strategy and Competitiveness*, Harvard Business School. Porter (2000)

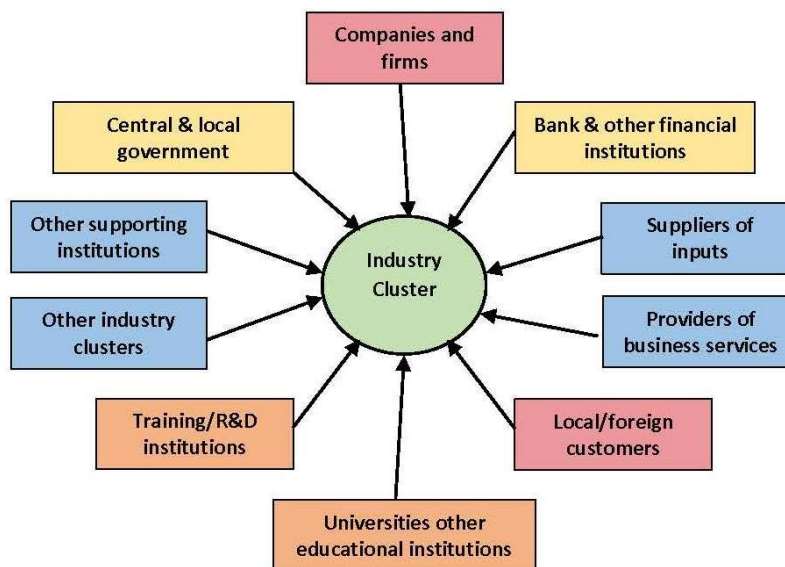
## B. FACTORS

Porter's model considers four important factors in an industry cluster.

- **Factor conditions offered by the specific region:** These are the resources and infrastructure the region offers and may become the strengths or threats for companies. Strong supply chains could be an example of what makes a region attractive for any company. For example, labor force is an important factor for companies and regions may establish educational and training infrastructure in order to provide skilled labor force.
- **Demand conditions offered by the region:** These are the local customers, size of the market, customer's needs, etc. All the needs that companies need to satisfy.
- **Relation and support with other industries and firms:** This is how companies interact to collaborate and compete for the key factors and demand conditions.
- **Context of strategy and rivalry between firms in the region:** Shows how companies take advantages of the factor conditions. Also, how they respond to threats and rivalry with other firms. Competition is an important factor generated by the existence of industry clusters.

As aforementioned, industry clusters are formed by different components; each component supports and contributes to the development of the industry cluster. The next figure presents a summary of these components.

**Figure 10: Industry Cluster Components**



*Source: T-MEX Consortium, Texas A&M University adapted from Tambunan (2009)*

- **Central and local government:** They refer to different institutions focused on economy development. Their main role is to provide incentives and regulations to attract new companies and firms. Additionally, central and local governments are in charge of enhancing the infrastructure of the region. Finally, they should promote and support educational, research and training institutions.
- **Bank and other financial institutions:** They provide the financial resources for investments. At the same time, they should stimulate investments into the region by offering easy access to financial resources.
- **Supplier of inputs and providers of business services:** These components consist of company providers of materials and services that firms in the cluster need in order to produce. They constitute the supply chain infrastructure.
- **Other supporting institutions and other industry clusters:** Other industry clusters and other institutions that support firms business. In the same way, different industry clusters collaborate among them.
- **Training/R and D institutions, universities and other educational institutions:** These institutions provide the training, knowledge, education and skills required by the industry cluster. Some industry clusters require specific training or skill levels.

## C. INDUSTRY CLUSTERS AND COMPETITION

One of the factors considered by Porter in his diagram is the rivalry between firms in the region. This rivalry leads to companies competing for the resources and the market. In the context of economy and production growth, competition has several advantages.

### **Increase productivity**

Competition leads to increased productivity. Companies may need to produce more in order to satisfy the whole market. Some companies do not take advantage of the unsatisfied demand. Additionally, competition in the context of industry clusters facilitates the productivity by providing access to specialized inputs and employees. With the existence of industry clusters, adequate labor force is easier to find in the region, as well as specialized inputs and suppliers.

Industry clusters lead to the development of research and information infrastructure in a specific region. The research and information facilitates the development of new production techniques for companies. Industry clusters also facilitate the access to complementary outcomes such as, better living opportunities for employees and access to marketing resources.

Incentives, access to institutions and public goods are factors that lead to increases in productivity. Governments usually provide better incentives to companies with better production rates; this allows companies to produce and satisfy the demand and to receive better growth opportunities. Additionally, it is more feasible for companies to recruit employees already trained by public institutions supported by the government. This may reduce the expenses and time required to train employees on the job.

### **Increase innovation**

Industry clusters provide a clear perception of new customer needs. For companies it is easier to obtain detailed information regarding customer requirements, leading to a quicker response to such needs.

Similarly, companies integrated in an industry cluster may have access to new technological, operating and delivering possibilities. These new resources open opportunities for companies to develop innovative products. Finally, the cluster analysis is useful in identification of gaps in the supply chains allowing companies to cover these gaps by innovating their products and services.

## D. STIMULATE NEW BUSINESS FORMATION

The existence of an industry cluster in a region may be a sign of a healthy economy and abundance of resources. New businesses are attracted by these factors because they are looking for a market to serve and resources that may facilitate the business formation. The cluster analysis identifies gaps in services or products that new companies can cover. These gaps represent the market that new companies need.

Financial resources are more abundant in regions where industry clusters exists. New companies may also receive provide support and incentives from local government to fund new business or expansion.



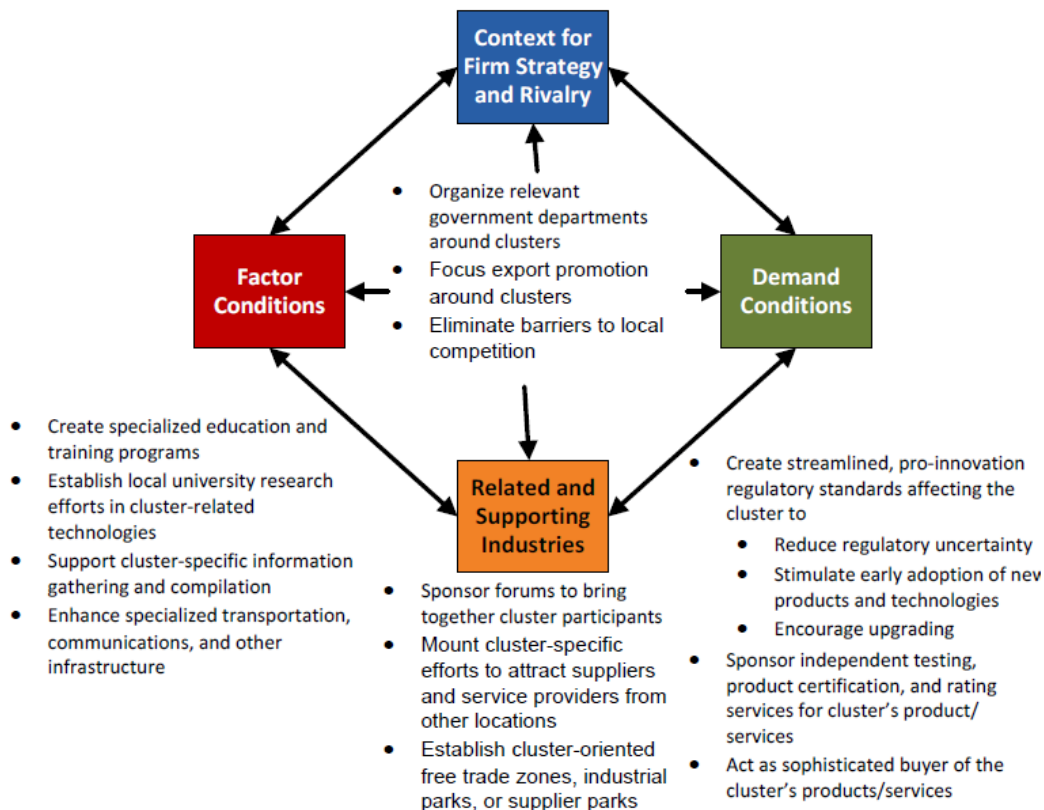
## E. THE ROLE OF GOVERNMENT

Government and other institutions (such as an economic development corporations, utilities, etc.) play the role of mediators among companies, suppliers, and other parties. Similarly, they are the main facilitators to attract and develop industry clusters. They provide the infrastructure, incentives and regulations to achieve economic growth.

The process of creating and sustaining an industry cluster starts with government and economic developers recognizing that a cluster is forming and then focusing on strengthening the cluster by supporting the infrastructure needed for the cluster. This might include removing regulations, offering opportunities, eliminating inefficiencies and relaxing constraints that impede the growth and sustainability of the cluster (Porter M., 2000). It is essential that regional leaders, local economic developers and government institutions understand that certain groups of companies that perform well in the region might improve the local economy as well. The value of understanding industry clusters is supported in this report also by assessing the strengths, opportunities, threats and weaknesses of the South Texas region and by identifying some gaps in targeted sectors in some supply chains.

The next figure shows some specific roles of the government and how it supports industry clusters in the region.

**Figure 11: Government Influences on Cluster Development and Upgrading**



Source: Michael Porter, Institute for Strategy and Competitiveness, Harvard Business School. Porter (2000)



- **Factor conditions:** These are the infrastructure and the resources the government can offer to support an industry cluster. Government has to create, facilitate or enhance the creation of infrastructure and resources. There are several conditions that can be improved in order to facilitate the success of an industry cluster. For example, supply of appropriate trained personnel, promotion and support of the local research, creation of physical infrastructure matched with cluster needs, and facilitation of the flow of information.
- **Demand conditions offered by the region:** Government can support the demand conditions by offering the regulatory standards that improve the quality of the products and services and stimulate the innovation and creation of new products.
- **Relation and support with other industries and firms:** Government may facilitate the communication, share information and support industry programs to attract suppliers. The creation of industrial parks is a good example of the support to industries that leads to attraction of suppliers.
- **Context of strategy and rivalry between firms in the region:** Government should facilitate the competition between companies, creating classification and incentives for them.

## IV. SWOT

### SWOT Analysis

To better understand the possibilities and challenges of each city in the South Texas region a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis was conducted to provide a thorough understanding of the opportunities and challenges of the region. This SWOT analysis, while not an exhaustive analysis, will provide a general overview of each city.

Ultimately, the success for the region is to have organic and continued growth in the counties, cities and towns. This growth should be economical growth (greater revenues and economic activity), population growth and overall improvement of life for its residents.

### Major Cities

The study has focused on four major cities located in the South Texas region. The cities are a representation for the area, however, the research team fully understands the importance of the surrounding cities. The four major cities used for the study are: Brownsville, Corpus Christi, Laredo and McAllen.

It was important to assess the current status of each city; therefore, an analysis was done at the beginning of the project to fully ascertain where each city stands based on infrastructure, schools, employment, etc. This analysis is not included in this report because the information was used as a base or starting point to evaluate each city, however main findings were considered in the following analysis. The following figures provide the SWOT analysis for all four cities.



## A. BROWNSVILLE SWOT ANALYSIS



**Figure 12: Brownsville SWOT Analysis**

*Source: Port of Brownsville web link and Port Authorities*

## B. CORPUS CHRISTI SWOT ANALYSIS



**Figure 13: Corpus Christi SWOT Analysis**

*Source: Texas A&M University Global Supply Chain Lab*



## C. McALLEN SWOT ANALYSIS



**Figure 14: McAllen SWOT Analysis**

*Source: Texas A&M with information from McAllen Economic Development Council*

## D. LAREDO SWOT ANALYSIS



**Figure 15: Laredo SWOT Analysis**

Source: LDF and Global Supply Chain Lab

## E. PHARR SWOT ANALYSIS



**Figure 16: Pharr SWOT Analysis**

Source: Pharr Economic Development Strategic Plan; TEEX, February, 2015.

## V. CONCENTRATION AND LOCATION QUOTIENT

The industries that yield a large sales and employee count were further analyzed with a location quotient. The location quotient determines which goods and services are produced in a region.

**Figure 17: Location Quotient Equation**

$$\frac{\text{Specific Industry Emp}_{MSA}}{\text{Specific Industry Emp}_{USA}} * \frac{\text{All Emp}_{USA}}{\text{All Emp}_{USA}}$$

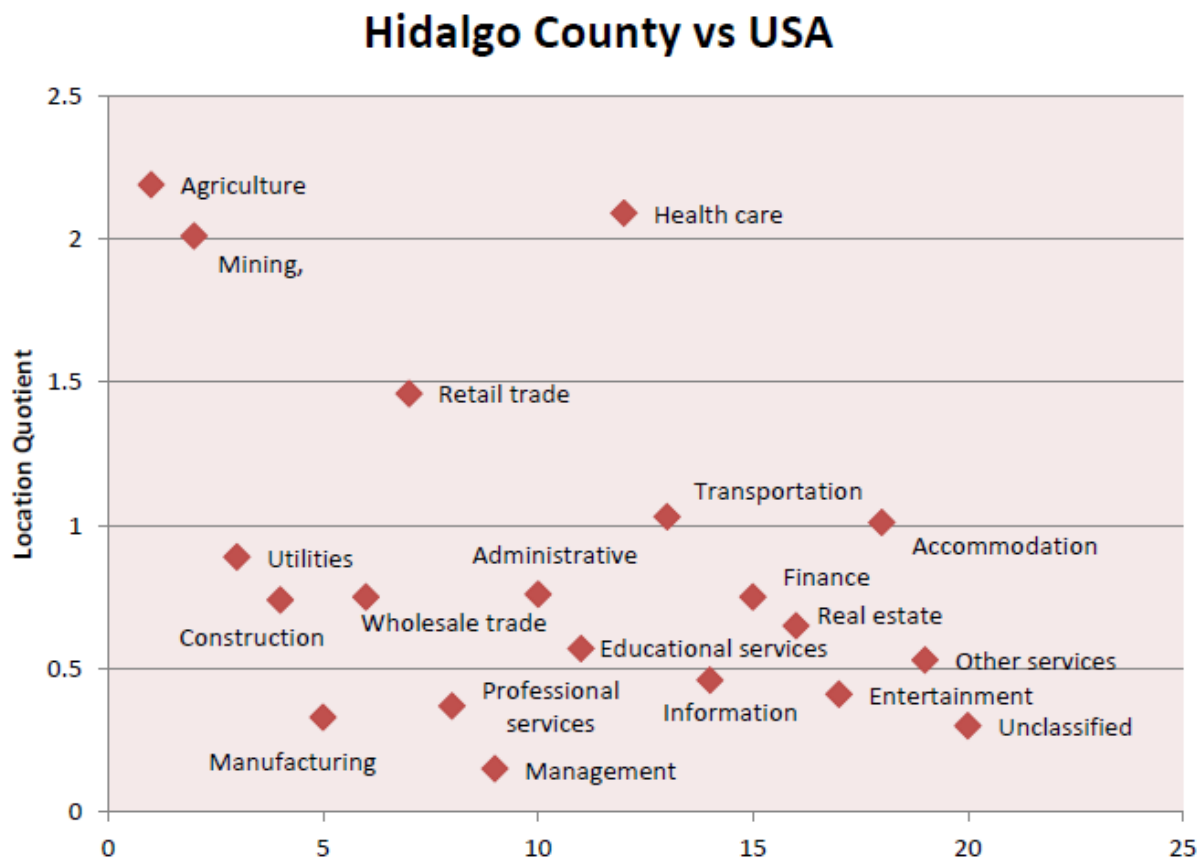
Source: Blair, J. P. (1995). *Local Economic Development Analysis and Practice*.  
 London: SAGE Publications.

The location quotient compares the region to a reference economy. In this case, the reference economy is the United States. This equation is a simple frequency identifier which determines how concentrated an industry is compared to a reference economy. The following figures show the location Quotient for each of the four main counties, Hidalgo, Webb, Nueces, and Cameron, with the reference economy (United States).<sup>43</sup>

As noted, each of these counties are the center of commercial activity for the counties surrounding each location. Trade across the South Texas Region has diversified over the past decade. The return of manufacturing and assembly operations to Texas have had a positive impact by attracting new suppliers to the region and creating value-added jobs. “Mining” on each chart refers to oil and gas exploration – thus, note such energy activity dominates activity in Nueces, Webb, and Hidalgo counties, but not Cameron.

<sup>43</sup> Location Quotient Equation, Blair, 1995.

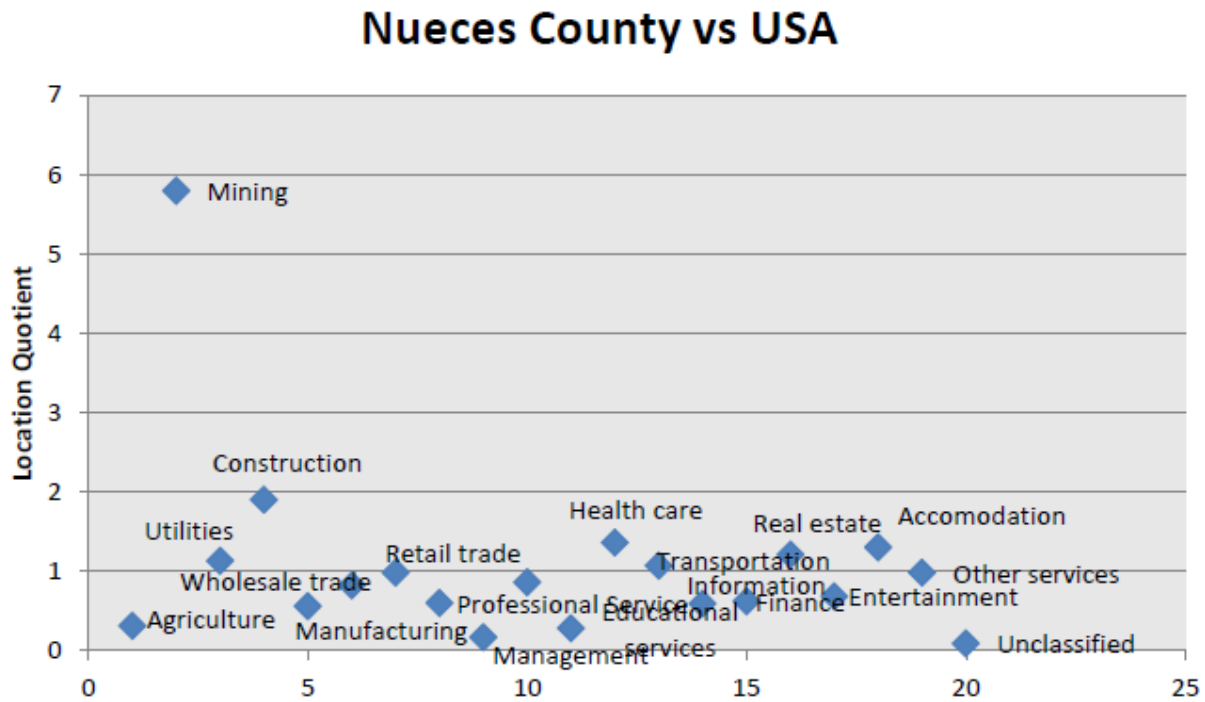
Figure 18: Location Quotient, Hidalgo County\* vs. USA



Source: Produced by Global Supply Chain Laboratory, Texas A&M University with data from the Bureau of Labor Statistics, Location Quotient Calculator

\*Hidalgo County is comprised of the following cities: Alamo, Alton, Alton North, Donna, Edcouch, Edinburg, Elsa, Granjeno, Hidalgo, La Joya, La Villa, McAllen, Mercedes, Mission, Palmhurst, Palmview, Penitas, Pharr, Progreso, Progreso Lakes, San Juan, Sullivan City, and Weslaco.

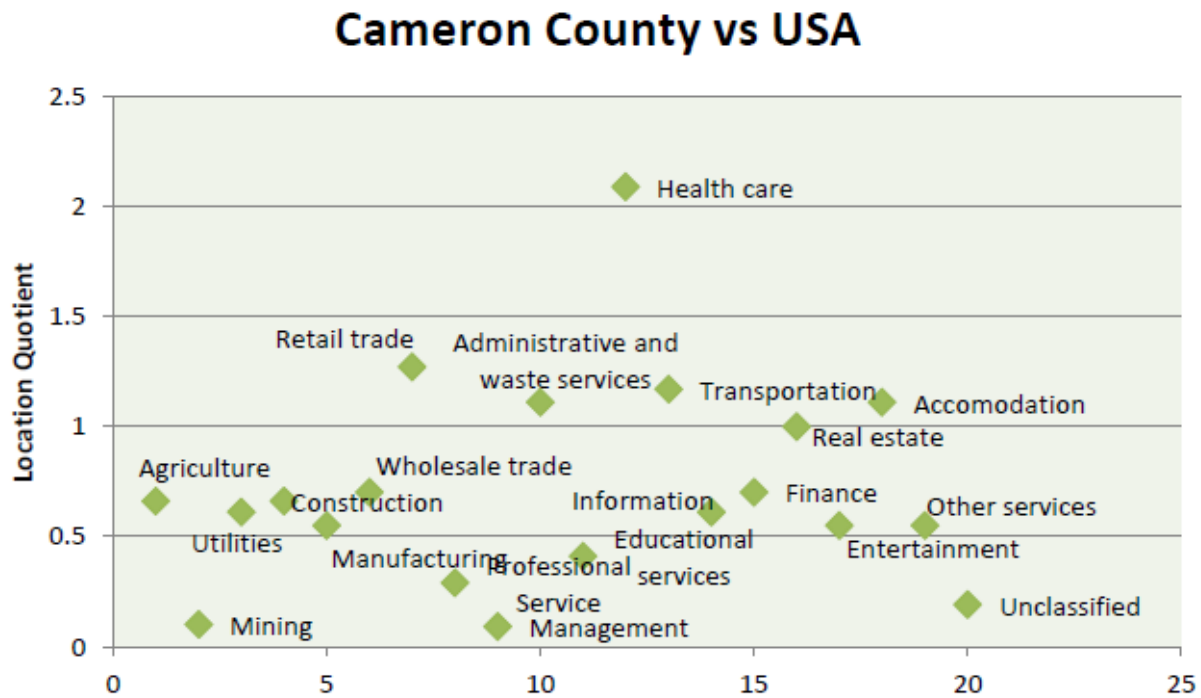
**Figure 19: Location Quotient, Nueces County\* vs. USA**



Source: Produced by Global Supply Chain Laboratory, Texas A&M University with data from the Bureau of Labor Statistics, Location Quotient Calculator

\*Nueces County is comprised of the following cities: Agua Dulce, Aransas Pass, Bishop, Corpus Christi, Driscoll, Ingleside, Petronila, Port Aransas, Portland, Robstown, and San Patricio.

Figure 20: Location Quotient, Cameron County\* vs. USA

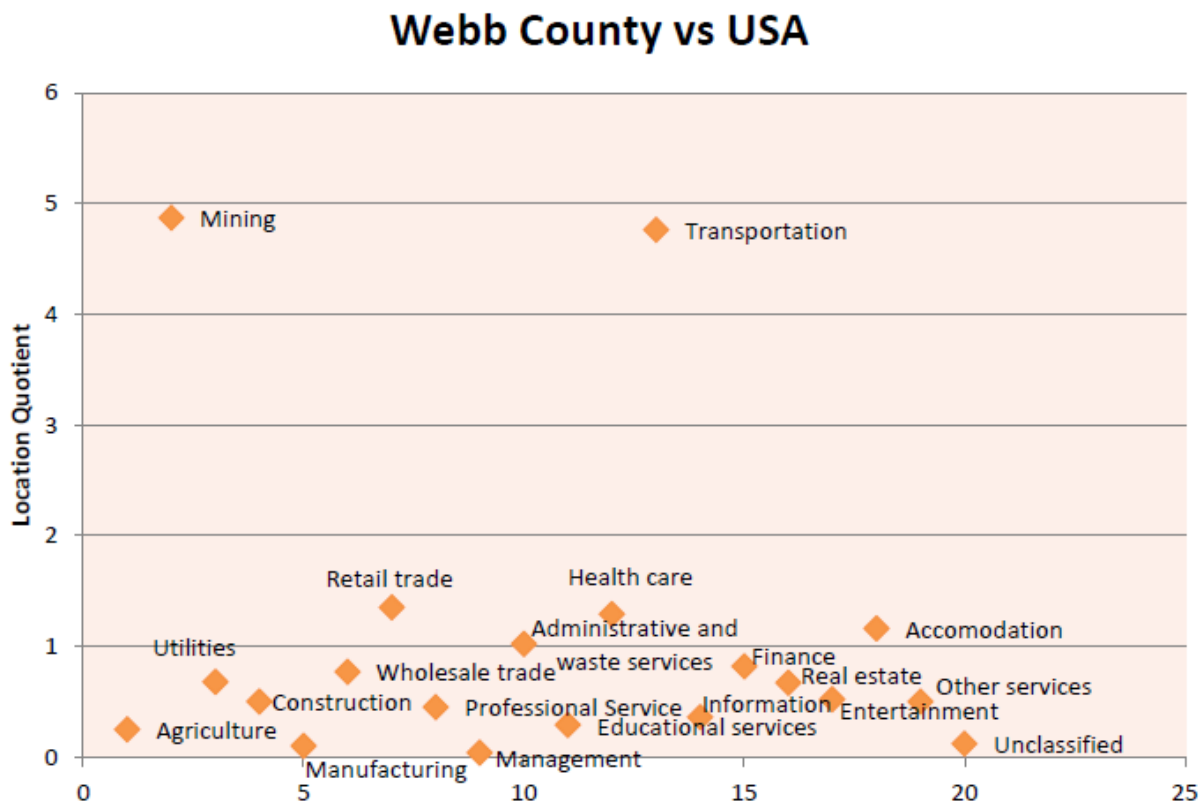


Source: Produced by Global Supply Chain Laboratory, Texas A&M University with data from the Bureau of Labor Statistics, Location Quotient Calculator

\*Cameron County is comprised of the following cities: Arroyo Alto, Bayview, Brownsville, Combes, Harlingen, Indian Lake, La Feria, Laguna Vista, Los Fresnos, Los Indios, Primera, Port Isabel, Palm Valley, Rancho Viejo, Rangerville, Rio Hondo, San Benito, Santa Rosa, and South Padre Island.



Figure 21: Location Quotient, Webb County\* vs. USA



Source: Global Supply Chain Laboratory, Texas A&M University

\*Webb County is comprised of the following cities: Aguilares, Dolores, El Cenizo, Laredo, Larga Vista, Las Tiendas, Rio Bravo, and Webb.

A Location Quotient higher than one indicates a higher concentration than the United States. Furthermore, a rather high quotient like mining for Webb County (4.87) and Nueces County (5.79) may indicate a competitive advantage for that particular industry (Figure 23, Figure 21). These charts identify nominal industries from which to begin supply chain mapping and lead to cluster integration analysis.

As part of the location quotient analysis, the team wanted to establish the percentage of employment in each region to fully understand current trends in each city and the South Texas region as a whole. Figure 24 to Figure 27 represent the employment percentage of the four main counties in the area of study.



## VI. BEST PRACTICES

### A. SKILLS DEVELOPMENT

During the assessment of the dynamic growth across the South Texas region it became very apparent that the main challenge to the region was the lack of a skilled workforce. Given the continued in-bound investment in oil and gas, manufacturing, and logistics services there is a significant demand for ‘skills’ enhancements in multiple industries. Across the region employment opportunities have been created that did not previously exist. The employment demands for skilled workers has proven to be a leading concern for both the private and public sector.

As noted in the industry clusters section highlighted above, the rapid rise of the oil and gas sector since 2012 has placed increased labor demands on all industry sectors. Texas and South Texas in particular has benefited from a steady flow of in-bound labor. Individuals attracted to the booming Texas economy generally arrive with some skills, training, and certifications which has allowed them to be absorbed into the workforce in the areas of value-added manufacturing, transportation, and healthcare. However, the demands in the support services sectors such as truck transportation, maintenance and repair, allied healthcare, and basic welding and fabrication, have continued to be a challenge to fill the increasing number of job openings.

Best practices to address the pent-up demand for a skilled workforce for the growth in South Texas will require an even greater focus on value-added training and specifically training targeted to the skills needed by the industry in the region. Regional workforce boards and community colleges across the region are assisting with training, yet cannot meet the growing demand. A case in point: The projected need for certified welders in the Coastal Bend area between Corpus Christi and Brownsville will exceed over 1,000 welders by 2015-2016. Current programs recruiting, screening, and training welders in all of South Texas only train and certify about 100 welders per year. The two main obstacles to adding welders are: 1) the limited number of training classrooms and instructors to educate the numbers in demand and 2) the cost of recruiting and screening students capable of passing both the drug screening and criminal background check.

**Figure 22: South Texas Industry Sectors with Welder Shortages**

Welders are need in South Texas in the following sample industry activity sectors:	
• Fabrication and repair	• Aircraft MRO
• Bridge building	• Pipeline installation
• Oil fields structures – installation and repair	• Oil and gas production facilities
• Ship building, demolition and repair	• Off-shore rig operations and repair
• Light manufacturing	• Construction

The key to solving or addressing such near-term demand is three fold:

- A greater focus to increase funding to the Texas Workforce skills training programs that address the actual needs of employers in the region. This strategy needs to be a 'pull' program where Texas Workforce Commission (TWC) trains and certifies in a very timely way to current needs, and not just 'push' out workers in traditional stayed programs that do not meet the qualifications for the skilled jobs in demand.
- Training programs in community colleges, TSTC and TEEX need to work together to leverage up their combined resources to train-to-the-demand of the employer. These programs tend to be territorial and many programs are ineffective due to poor entry level screening, dropout rates, and low numbers that actually complete skills programs with certification.
- The private sector must be at the table, both with matching resources, a clear message on what they need in terms of skills needed and certifications, as well as the availability of on-site facilities to provide 'classrooms' and trained instructors.

The demand for a skilled workforce impacts a broad cross-section of areas of employment in the region. Looking forward there needs to be a collection of data regarding skill sets needed by industry and the current programs available to provide such training. This data would also include available capacity (i.e. classrooms and instructors), location, course time-frame, certifications, and cost.

## **B. BRANDING AND MARKETING THE REGION**

Over the past few years there has been a heightened realization that the South Texas region should be branded as a dynamic economic 'region' to attract in-bound investment. The region as a whole – with the sum of all its parts – offers a great deal more than any one single item. Major strides have been made with collaboration among educational institutions, especially in the area of healthcare and regional economic development groups, such as NAAMREI. Across the 15 county area many differences arise, however as communities and industries pool resources and expertise more commonalities arise to provide overall strength, ideas, vision, and purpose. As has been noted, the entire region has been impacted by the boom of the Eagle Ford Shale oil and gas play, and will continue to be impacted for years to come. The continued demand for workforce, training, education and infrastructure impacts all of South Texas. From the oil boom, secondary waves have occurred in the economic growth and demands of the manufacturing sectors in the Coastal Bend. For example, there is increased demand for healthcare, logistical pressures as more and more suppliers locate in the region, and increased concerns around safety and security.

To fully brand a region requires a dynamic awareness of the complexities of industries that are critical for 'inbound' investment, job creation, and attraction of industry as well as services such as suppliers and value-added manufacturing. Branding is not a 'slogan' or cute billboard, but instead an orchestrated-planned strategy to position your city, community and region to be attractive to new investment. Cities and economic agencies in the region have a number of promotional programs and outreach activities that should be continued and enhanced. This can be accomplished by a number of means to include:



- The current ongoing efforts of promotion by cities, Economic Development Councils (EDCs), universities and companies across the region touting their success stories and business friendly environment should be enhanced and placed on a schedule to routinely package the message of the region; these efforts include state-of-the-art websites as well as a well-crafted marketing messages.
- Promotional efforts require a constantly fresh message, even though many communities within the region compete with each other, no one community or county can provide all the jobs needed by the growing employment demand and thus, cooperation in the various trade associations such as NAAMREI is needed.
- Such trade organizations and communities should encourage the solicitation and attraction of 'inbound' "fam" – familiarization tours and visits by potential customers – manufactures, suppliers, buyers, tourist, and government agencies – to promote and highlight the strengths of the region.
- Such inbound visits should include two critical groups: site and facility location managers such as KPMG or LFM Corporate Location Solutions and the editorial staffs from economic-site promotion publications such as *Area Development*.
- The growing university and community college sector is a key magnet. These institutions should increase their efforts to be "ambassadors" to tell the greater story of South Texas and encouraged to highlight the region, its communities, workforce, and dynamic opportunities.
- Out-bound 'fam' tours to Washington, D.C. to interact with the agencies should be held at least annually as well as periodic targeted marketing visits to major metro areas across the nation to 'sell' South Texas and the key emerging sectors of: healthcare, manufacturing/assembly, logistics, as well as aviation/space/MRO.
- Such outbound marketing visits should be timed to coincide with major industry trade shows such as:
  - Comdex (Computer Dealer's Exhibition)
  - CES (Computer Electronics Show)
  - Annual bio-medical shows, such as BIO 2015 held in June 2015 in Philadelphia
  - CeBit (computer tech show in Hanover, Germany - for those looking to attract the international market).
- Understanding the current dynamics and needs of 're-shoring' a company that is departing a foreign country to 'come home' to Texas – have an action team in place to address suppliers, site location, machinery requirements, logistics dynamics, and work-force training.
- There is a need to know the supplier and infrastructure network strengths and weaknesses – companies locate where they can produce and assemble in real-time at competitive cost and supported by just-in-time logistics and support systems.
- The greatest near-term challenges for the years to come will be the ability to provide a skilled workforce for the demands of the industry expanding and locating to South Texas – there is no one solution to this growing problem that includes not only training but also housing, education, and healthcare needs.

## VII. OBSERVATIONS/NEXT STEPS

The dynamic growth over the past few years a reflection of the opportunities and challenges that face the region in the upcoming years. In this regard there a number of next steps for the region to emphasize and consider:

### A. INFRASTRUCTURE

The challenge throughout the state of Texas in general and in South Texas in particular will be the constant efforts to address all aspects of ‘infrastructure’. From roads to ports, electrical power availability to internet access, the current growth will demand a continued focus to maintain and improve all infrastructure. Addressing these needs will require constant contact with funding sources. Highway funding will require contact with both the state and federal level. In the case of electrical and internet services there needs to be a robust-continued process to determine needs assessments across all jurisdictions. City and county officials need to maintain vigilant contact with the economic development organizations in the region as well as encourage existing industry and potential new industry to be as transparent as possible with growth plans and employee needs. Officials should expect a continual reshoring of companies relocating to South Texas to take advantage of both the maquiladora program as well as a desire to move closer to both domestic just-in-time suppliers and customers.

### B. HEALTHCARE

The growth and demand for healthcare both now and into the future will be one of the greatest demands in the region. South Texas is one of the fastest growing regions in the nation in terms of demographics. A combination of an aging population as well as an increase in population growth due to inbound labor and a high birth rate will necessitate expanded healthcare services. Major strides have been made in recent years with the increase in university level medical education. Still there is a shortage of physicians, nurses, and medical staff. This nationwide trend will become even more acute in South Texas. Educating and retaining healthcare professionals to meet the demand will be a continual challenge.

### C. SPACE-AVIATION CLUSTER

Other than the region-wide dramatic impact of the Eagle Ford oil and gas play, the emergence of the space and aviation sector in South Texas promises to become a major growth and job sector. Across the region there is currently a cross section of aviation firms accounting for over 2,000 jobs in assembly and MRO work supporting countless suppliers. The entrance of Space X, a new industrial supplier of space travel and resupply located in Corpus Christi, has designated the South Texas region as a major player and drone testing area. Both these segments – space and drones -- are cutting edge technologies and industries that will demand a new level of educated workforce and supplier base. Furthermore, in addition to jobs, these space/aviation endeavors will attract new direct investment, promote technology transfer to other industries, assist with enhancement to the universities, and provide students in South Texas with a daily glimpse and excitement for the future not seen since the days of the Apollo Moon Program! The commercial age has arrived in South Texas.



Around this new space-aviation cluster should be the enhancement of science and math in classrooms across the region, student site visit to these new companies, the rise of active science clubs, and engagement with the national robotics competition that provides ideas and encouragement for the next generation of engineers and value-added skills in the space arena.

## **D. WORKFORCE**

Training and maintaining a workforce across a broad cross section of industries both currently active in the region and moving to the region, such as the growing aviation/space industry, will present an ongoing skills availability dynamic that is being felt across the state. Texas is in a dynamic ten year growth cycle, which means South Texas will be competing for jobs across the state as well as the entire Southwest. The combination of a decreasing unemployment rate in the region and the ability to identify and train potential employees that can pass the drug screening and background tests will be an impediment. Community grass-roots effort may be needed to implement and coordinate strategies such as: 1) An informational program at all grade levels from K-12, not just a focus on STEM, to provide continuous positive efforts to inform students at an early age of potential opportunities and job requirements in the future workforce. 2) Community colleges need to work closer with industry, which they are beginning to do, to address the needs of the employer's as well as skills and certifications required.

## **E. REGIONAL COLLABORATION**

As noted in the report, collaboration across the region will be pivotal in addressing the future needs and growth of South Texas. Most are aware of the regional dynamics and that the means to address growth transcends city and county lines. An obvious growth area is the workforce. As outlined, there are a number of ongoing organizations already gathered to address key concerns and issues. These efforts should be continued by the individual organizations that cut across numerous county lines and considerations given to region wide forums, meeting for example every six months, to bring all these organizations together for an update. The meeting could rotate and be hosted by a different organization for each meeting. Such a gathering would provide an enhanced means to further 'brand' the region as well as a periodic review of common challenges and action items needed to better enhance the image and business friendly nature of the region. For example, speakers could include the perspective and observations by industry executives (already in the regions or looking to locate in the region) and site location consultants (with their overview of the competitive landscape concerning company investment, expansion, and relocation to South Texas).

An additional consideration is to maintain a close watch on the support services needed by the emerging changes in the energy laws and privatization in Mexico, which will open up a tremendous oil field directly south of the Rio Grande. Infrastructure needs, a skilled workforce, and suppliers will play a big role in the development of this new field.





## VIII. STAKEHOLDER UPDATES

### A. LOCAL AND REGIONAL CONFERENCES

- Logistic Cities Conference, Laredo, May 28-30, 2013:** This conference was an opportunity to visit with city and county leaders and a number of business leaders; to include Carlos Villarreal, City Manager; Olivia Varela, Executive Director of the Laredo Development Foundation; Rolly Ortiz, Board Member of the Laredo Development Foundation; Carlo Molano, community business member of B&W Commercial Real Estate; Jose Palacios, Vice President of Texas Community Bank; Kurt Kraus, Black Diamond Energy; and Arturo Garcia, Programs Administrator, City of Laredo. The key topics of the conference were well suited to our task and project, as they addressed suppliers, regional branding, and attracting new business through connections with more diverse trade partners, infrastructure, and jobs.
- First Regional Presentation to Laredo Manufacturer's Association – EDA South Texas Presentation – September 24, 2013.** Agenda included below:

#### 20<sup>th</sup> Annual Logistics and Manufacturing Symposium "Trade Corridors - Pathways to Prosperity"

The role of NAFTA trade corridors in strengthening trade and bringing three economies closer together

Laredo, TX

Conference Draft Agenda  
As of September 18, 2013

Tuesday, September 24, 2013 – Day I / Welcoming Reception		
6:30 pm to 8:30 p.m.	Laredo Community College Fort McIntosh Campus, Visual & Performing Arts Bldg	Symposium Welcoming Reception Sponsored by: Laredo Community College Welcoming Remarks: <ul style="list-style-type: none"> <li>Dr. Juan L. Maldonado, President, Laredo Community College</li> </ul> Master of Ceremony: Rolando Ortiz, President, Laredo Development Foundation Speaker Introduction: Guillermo Treviño, Laredo Development Foundation Keynote Speaker: <ul style="list-style-type: none"> <li>Honorable Paula Caldwell St-Onge, Consul General of Canada to the South Central United States</li> </ul>
Wednesday, September 25, 2013 – Day II		
Location: Texas A&M International University – 5201 University Blvd.		
7:30 am to 9:00 am	2 <sup>nd</sup> Floor	Registration- LDF Booth 1
7:30 am to 8:45 am	Student Center Ballroom B&C	Symposium Opening & Exhibitor Acknowledgements Logistics & Manufacturing Association – Port Laredo Breakfast Meeting Sponsored by: Falcon International Bank Moderator: Ivan Rodriguez, Business Director – Border Team, Marketing and Sales, Union Pacific Railroad Keynote Speaker: <ul style="list-style-type: none"> <li>Dr. John A. Adams, Jr. Business Development Manager, Texas A&amp;M University, Texas Engineering Extension Service – "Insights from the EDA Competitiveness Study on Manufacturing and Jobs in South Texas."</li> </ul>
8:50 am to 9:00 am	Student Center, Ballroom A	Symposium Welcoming Remarks: <ul style="list-style-type: none"> <li>Dr. Ray Keck, President, Texas A&amp;M International University</li> </ul>
9:00 am to 9:45 am		Session I: Twenty Years of Trade and Investment Growth in the NAFTA Bloc Presentation by: <ul style="list-style-type: none"> <li>Ralph Biedermann, Managing Director – Mexico Consulting Associates, The MRB Group</li> </ul>
9:45 am to 10:00 am		Mid-morning Break Sponsored by: Texas Community Bank
10:00 am to 10:45 am		Session II: Changing the Face of Customs since NAFTA's Implementation Presentation by: <ul style="list-style-type: none"> <li>Leman G. Bown, Jr., Managing Director, Regulatory Compliance, FedEx Trade Networks Transport &amp; Brokerage, Inc.</li> </ul>

\*\*\*Agenda is subject to change\*\*\*

1



**20<sup>th</sup> Annual Logistics and Manufacturing Symposium**  
**“Trade Corridors - Pathways to Prosperity”**  
 The role of NAFTA trade corridors in strengthening trade and bringing three  
 economies closer together  
**Laredo, TX**  
 Conference Draft Agenda  
 As of September 18, 2013

10:45 am to 11:00 am		Exhibitor Viewing Break – 2 <sup>nd</sup> Floor Rotunda Sponsored by: International Bank of Commerce
11:00 am to 11:45 am	Student Center, Ballroom A	Session III: 3PL Presidents Panel – The Dominant Position of Laredo and Detroit in Cross-Border Trade Moderator: Gerald Schwebel, Executive Vice President, Corporate International – International Bank of Commerce Presentation by: <ul style="list-style-type: none"> <li>Craig Roeder, Chief Executive Officer, ProTrans International</li> <li>Alex Cessac, Chief Operating Officer, W.W. Rowland Trucking Company</li> <li>David Weiner, Senior Trade Commissioner, Consulate General of Canada in Dallas, Texas</li> </ul>
12:00 pm to 1:15 pm	Student Center, Ballroom B&C	Laredo Development Foundation Luncheon Meeting Sponsored by: Killam Development, Ltd. Moderator: Rolando Ortiz, President, Laredo Development Foundation Keynote Speaker: <ul style="list-style-type: none"> <li>Dr. Wolfgang Kneer, President and CEO, MBtech North America</li> </ul>
1:30 pm to 2:15 pm	Student Center, Ballroom A	Session IV: Meeting the China Challenge to Manufacture in Mexico Presentation by: <ul style="list-style-type: none"> <li>Ralph J. Watkins, CEO, Americas Trade Analysis, LLC</li> </ul>
2:15 pm to 2:30 pm		Mid-afternoon Break Sponsored by: Texas Community Bank
2:30 pm to 3:15 pm		Session V: Economic Impact of NAFTA Presentation by: <ul style="list-style-type: none"> <li>Jesus Cañas, Business Economist, Federal Reserve Bank of Dallas – “Border Update/Outlook on the Economic Effects of NAFTA Along the U.S. - Mexico Border.”</li> </ul>
3:15 pm to 3:30 pm		Symposium Closing Remarks

\*\*\*Agenda is subject to change\*\*\*

2



- **AEP Texas Economic and Business Development Forum, EDA-South Texas Regional Presentation (October 24, 2013 – Weslaco, TX)**

On October 24, 2013, the AEP (American Electric Power) Texas Economic and Business Development Forum “Growing Our Region” Conference was held in Weslaco, TX, in partnership with the Rio South Texas Economic Council. John Adams presented a 45 minute overview of TEEX’s early findings and relayed the impact the Eagle Ford Shale has had on growth, jobs, and industries within the region. Over 100 EDC, city and county leaders, and utility’s representatives were in attendance. This was the second of four planned sub-regional presentations of the EDA-South Texas Competitiveness Project. Conference agenda follows:



**“Growing Our Region”  
 AEP Texas Economic and Business Development Forum  
 (In partnership with the Rio South Texas Economic Council)**

**Thursday, October 24, 2013  
 Knapp Medical Conference Center  
 1401 E. Eighth St. Weslaco, Texas 78596**

**Agenda:**

**8:15a.m. - 9:00 a.m.**

Registration, Refreshments and Continental Breakfast

**9:00 a.m. - 9:15 a.m.**

*Welcome and Introduction*

E. Ray Covey, Manager Economic & Business Development, AEP Texas  
 Steve Ahlenius, President/CEO, McAllen Chamber & Chairman, RSTEC

**9:15 a.m. - 10:00 a.m.**

*AEP Economic and Business Development Roles and Programs*

Mark James, VP – Economic & Business Development, AEP  
 E. Ray Covey, Manager Economic & Business Development, AEP Texas

**10:00 a.m. - 10:30 a.m.**

*Electric Transmission Texas and AEP Texas Investments in the Region*

Calvin Crowder, President – Electric Transmission Texas, LLC  
 Tom Coad, Manager Distribution Services, Pharr North Service Center, AEP Texas

**10:30 a.m. - 10:45 a.m.**

*Office of the Governor Economic Development and Tourism*

S. Leticia Flores, Regional Representative

**10:45 a.m. - 11:00 a.m.**

*Texas Department of Agriculture*

Phyllis Varnon, Field Representative – Texas Dept. of Agriculture Marketing Division

**11:10 a.m. - 11:30 a.m.**

*Texas A&M Engineering Extension, TEEX*

Dr. John A. Adams, Jr., Business Development Mgr. for Knowledge Engineering at Texas A&M TEEX

**11:30 a.m. - 12:30 p.m.**

Lunch

**12:30 p.m. - 3:30 p.m.**

*InSite Consulting*

Rob Cornwell, Principal with InSite Consulting  
 Tonya L. Crist, Principal with InSite Consulting


**3:30 p.m.**

Conclude

- **Eagle Ford Center for Research, Education and Outreach Fall Workshop, Cotulla, TX (November 15, 2013)**

John Adams presented “City of Cotulla Economic Analysis Report” to the Regional Economic Development workshop in conjunction with the City of Cotulla and Texas A&M Kingsville. There were over 110 EDC and city and county leaders in attendance. John Adams provided an update and highlights of the South Texas EDA project. One key component and focus for the conference was the ongoing impact of the Eagle Ford Shale on the region as well as concern over business growth, attraction, infrastructure, and attraction of workers to fill jobs.

Preliminary findings presented at the regional meeting included early observations indicating there is indeed a transition occurring in South Texas. One of the main forces is the Eagle Ford Shale play and the corresponding services and infrastructure needed to support the oil and gas production. All areas of the region are being impacted by the demand for workers, hotel space, and support equipment. In the case of labor, the need is for a skilled labor workforce, or at least a trainable labor workforce capable of passing the drug testing requirements. Increased demand for a skilled workforce will also be needed in the Coastal Bend region south of Corpus Christi, which is adding some \$25 billion in manufacturing facilities – increased employment opportunities are occurring for both the construction phase and the more permanent manufacturing phase. And finally, there has been the rise of a number of expanding clusters, such as healthcare in deep South Texas and an emerging aviation sector, highlighted by the potential that will follow the location of Space X launch facilities at Boca Chica. Both sea and land ports continue to be very busy, with outgoing trade shipments as well as transshipment of inbound items. This was the third of four planned sub-regional presentations of the EDA-South Texas Competitiveness Project. Conference agenda follows.

 <p><b>Eagle Ford Center for Research, Education and Outreach Fall Workshop</b> Innovative Transportation and Water Technologies for a Sustainable Eagle Ford Development City of Cotulla Convention Center   November 15, 2013</p>	
9:30 – 10:00	<b>Registration, Networking and Continental Breakfast</b>
10:00 – 10:20	<p><b>Welcome and Introductions</b> Mayor Jose Javier Garcia, City of Cotulla County Judge Joel Rodriguez, La Salle County Dr. Stephan J. Nix, Dean of the Frank H. Dotterweich College of Engineering, TAMUK Dr. Mohamed Abdelrahman, Associate Vice President for Research and Graduate Studies, TAMUK</p>
10:20 – 12:20	<p><b>Innovative Transportation Panel</b> (Chairs: Dr. Joseph Sai and Dr. Dazhi Sun, TAMUK)</p> <p><i>"Policies &amp; Procedures Drive Transportation Solutions"</i> (20 minutes) William Lowery, P.E., Director, Transportation Training Program Texas A&amp;M Engineering Extension Service (TEEX)</p> <p><i>"Unmanned Aerial Vehicle (UAV) Application in Road Condition Monitoring"</i> (20 minutes) Dr. Somayeh Asadi, Dr. Mals Nijim, &amp; Dr. Selahattin Ozcelik, TAMUK</p> <p><i>"Oilfield Material Recycling: Rules, Regulations, Benefits and Limitation in Texas"</i> (20 minutes) Bart Huffman, Vice President, Huffman Hydrocarbon Engineering, LLC</p> <p><i>"Mechanical Concrete: A Cost Saving "Green" Solution for South Texas Energy Roadways"</i> (20 minutes) Jeff Labenz-Hough, Associate Vice President, HDR Engineering, Inc.</p> <p>Panel Discussion: Please use Index cards provided to write down your questions for Q&amp;A. (40 minutes) Additional Panelists: Roger Lopez, Manager, Southwest Research Institute (SwRI) Dr. Cesar Quiroga, Manager, Texas A&amp;M Transportation Institute (TTI) Michael C. Riojas, P.E., Senior Project Engineer, S&amp;B Infrastructure, LTD David Salazar, Director of Maintenance, TxDOT Laredo District Cindy Saldana, Transportation Engineer, TxDOT Laredo District Cynthia Rodriguez, Administration Specialist, Southwest Area Regional Transit District</p>
12:20 – 1:50	<p><b>Lunch and Poster Viewing Session</b> (Chair: Dr. Kim Jones, TAMUK)</p> <p>Lunch, Recognition of Sponsors, Networking &amp; Poster Viewing (60 minutes)</p> <p>Keynote Speakers: <i>"Transportation and Water Issues in the Eagle Ford Development"</i> (10 minutes) Larry Dovalina, City Administrator, City of Cotulla</p> <p><i>"City of Cotulla Economic Analysis Report"</i> (10 minutes) Dr. John Adams, Program Director, Texas A&amp;M Engineering Extension Service (TEEX)</p> <p><i>"What can TAMUK do for South Texas?"</i> (10 minutes) Dr. Mohamed Abdelrahman, Associate Vice President for Research and Graduate Studies, TAMUK</p>

- **Reinvesting in American Manufacturing Conference, Houston, TX (December 3-5, 2013)**  
John Adams attended the Reinvesting in American Manufacturing conference in Houston, TX and gained great insight concerning trends, technology demands, as well as workforce training needs.

- **PLANNING AND DELIVERY OF SOUTH TEXAS COMPETITIVE TRADE CONFERENCE - South Texas Economic Competitiveness Conference – Cotulla, TX (May 6, 2014)**

The Texas A&M Engineering Extension Service (TEEX) in cooperation with the U.S. Economic Development Administration conducted the region-wide, day-long South Texas Economic Competitiveness Conference event attended by over 70 stakeholders from 20 communities across South Texas. The purpose of the event was to report findings and to present topics and trends critical to the growth and opportunities in the region highlighted by key selected speakers. All presentations are available for viewing and may be accessed at the following website: <https://teex.org/Pages/services/competitiveness-study-economic-impact.aspx>. Conference agenda follows.

Growth of job opportunities and the rebound of the manufacturing sector were among the findings discussed at the conference. TEEX studied the 15 Texas counties below the Nueces River, an area historically known as the Nueces Strip. The 18-month study centered on the competitive opportunities for jobs, attraction and expansion of the manufacturing sector, and methods for expanding the supplier base across the region.

A cross section of expert presenters highlighted the key issues impacting the region to include the oil and gas boom, demand for housing, growth and jobs, need for skills training and workforce to address the jobs demand, area competitiveness, Eagle Ford Shale impact and trade, education, health care and future opportunities.

Speakers included Gary Sera, Agency Director at TEEX, John Adams, Knowledge Engineering Program Director at TEEX who presented the top ten trends for the region (see below), Dr. Barry Lawrence, Director of the Global Supply Chain Laboratory at Texas A&M University who presented supply chain opportunities and mapping in South Texas, and Dr. Harold Hunt of the Texas A&M Real Estate Center, who discussed the trends and opportunities in the Eagle Ford Shale.

Economic consultant Tom Stellman, President of TIP Strategies, discussed the skills gap in Texas manufacturing. Additional speakers included Mike Carrell, Frost Bank Regional President addressing how to bring businesses to South Texas and Eduardo Campirano, Director and CEO for the Port of Brownsville spoke to future opportunities at the Port of Brownsville. Jose Javier Garcia, Mayor of Cotulla, and Judge Joel Rodriguez, LaSalle County Judge provided welcoming remarks.

Investment across the region is the highest in the history of South Texas, exceeding over \$40 billion in projects across 15 counties. In addition to the oil play, the Coastal Bend around Corpus Christi is adding investment from five large foreign firms planning to produce pipes, steel, plastics, and secondary petroleum products.



## Top 10 Competitive Trends in South Texas Region

Based on TEEX's work on the project to date, John Adams' presentation focused on the Top 10 Competitive Trends in the region:

1. Eagle Ford drives inbound investment
2. Demand for skilled employees
3. Region wide infrastructure demand
4. Coastal Bend boom
5. Increase in suppliers relocation in region
6. On-shoring of returning manufacturers
7. Small-business growth
8. Ongoing demand for health-care services
9. Continued need to improve education at all levels
10. Regional Collaboration

May 6th, 2014

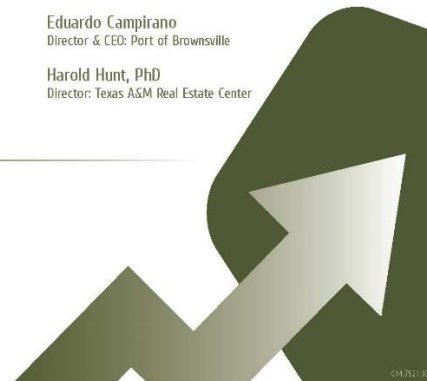


**ECONOMIC**  
Development

KNOWLEDGE  
Engineering

## South Texas Economic Competitiveness Conference Agenda

9:15	Registration: coffee, juice and pan dulce	
10:00	Opening Welcome	<p>Gary Sera Director: Texas A&amp;M Engineering Extension Service</p> <p>Jose Javier Garcia Mayor of Cotulla</p> <p>Judge Joel Rodriguez La Salle County Judge</p>
10:15	South Texas: The Supply Chain Connection	<p>Dr. Barry Lawrence Director: Global Supply Chain &amp; Laboratory/ Chair: Industrial Distribution, Texas A&amp;M</p>
11:00	Bringing Business to South Texas	<p>Mike Carrell Regional President: Frost Bank</p>
11:40	Lessons Learned: Top Ten Trends in South Texas	<p>John Adams, PhD Project Manager, Texas A&amp;M Engineering Extension Service</p>
12:30	Lunch sponsored by AEP	<p>Ray Covey Manager American Electric Power</p>
1:00	Texas Manufacturing Trends	<p>Tom Stellman President: TIP Strategies</p>
1:40	Land, Sea and Air: The Future	<p>Eduardo Campirano Director &amp; CEO: Port of Brownsville</p>
2:20	Trends and Opportunities in the Eagle Ford Shale	<p>Harold Hunt, PhD Director: Texas A&amp;M Real Estate Center</p>
3:00	Closing	





- **Eagle Ford Consortium Conference, San Antonio, TX (April 21 – 23, 2014)**

Patrick McMahon attended the Eagle Ford Consortium in San Antonio, Texas. The conference included industry, community, and economic leaders focused on the impact and growth of the energy sector across South Texas. Information garnered from the conference included the following:

- Three (3) major concerns for the future are infrastructure repair, affordable housing, and addressing the needs for additional medical services.
- The potential water shortages and the need to address securing water supplies for the populations.
- New oil and gas businesses such as desalinization and pipelines will be coming into the state.
- Local institutions of higher education are taking advantage of the oil and gas industry growth by offering courses and programs specifically targeted toward the desired workforce.

## A G E N D A

### Driving the 21<sup>st</sup> Century Texas Economy: Sustainable Oil & Gas Communities

#### MONDAY, APRIL 21, 2014

NOON	REGISTRATION OPENS & EXHIBITOR SET-UP Bridge Hall
6:00-9:00 PM	<b>Chairman's FIESTA River Parade Reception</b> Lonesome Dove Room * San Antonio Convention Center Sponsored by AEP Texas

#### TUESDAY, APRIL 22, 2014

TIME	TRACK	TOPIC
7:00-8:00		Registration, Exhibits & Networking in Bridge Hall
8:00-8:15	Welcome Color Guard National Anthem	Leodoro Martinez, Chairman; Eagle Ford Consortium Trinity University Police Department Erica Gonzaba; Gonzaba Medical Group
8:15-8:45	Opening Breakfast Welcome Introduction Keynote Speaker	County Judge Nelson Wolff, Bexar County Dr. Ricardo Romo, President; University of Texas at San Antonio Red McCombs, Owner; McCombs Enterprises <b>COMMUNITY: At the Heart of Every Business</b>
8:45-9:45	Panel Introduction Moderator Senator Leticia Van de Putte, Dist. 26	<b>Eagle Ford Shale Legislators</b> Leodoro Martinez, Chairman; Eagle Ford Consortium Senator Juan "Chuy" Hinojosa, Dist. 20 Senator Carlos Uresti, Dist. 19
9:45-10:15	BREAK	Exhibits and Networking
10:15-10:45	Introduction Keynote Speaker	Suzanne Scott, General Manager; San Antonio River Authority Chairman Carlos Rubinstein, TX Water Dev. Board <b>The Future of Water in Texas</b>
10:45-11:15	Introduction Keynote Speaker	Dana Sigalos, Lower 48 Stakeholder Relations Manager, ConocoPhillips Greg Leveille, Unconventional Reservoirs Technical Manager ConocoPhillips <b>The Lifespan of a Shale Play</b>
11:15-11:25	Presentation	State Representative Lyle Larson, Dist. 122 Eagle Ford Energy EXPO 2015
11:25-12:15	BREAK	Exhibits and Networking
12:15-1:30	Luncheon Introduction Keynote Speaker	Congressman Henry Cuellar Mayor Julian Castro, City of San Antonio
1:30-2:00	BREAK	Exhibits and Networking

2:00-3:30 Breakout A Sessions

<b>Healthcare</b> <b>Room 203B 2<sup>nd</sup> Floor</b> <b>Moderator</b> Rebecca Brune, Vice President; Methodist Healthcare Ministries Dr. Thomas Tunstall, Research Director; UTSA Ted Day, Vice President Strategic Planning & Business Development; University Health System Haley Curry, Director of External Affairs; South Texas Energy & Economic Roundtable	<b>2013 Eagle Ford Healthcare Resource Assessment: The Starting Point</b>
<b>Safety</b> <b>Room 008A River Level</b> <b>Moderator</b> Scott Tompkins, Talisman Energy Clif Cameron, Risk Systems International Sgt. Jason Reyes, Texas Department of Public Safety Chris Ashcraft, South Texas Energy & Economic Roundtable Danny Magee, Director of Transportation Operations; Texas Department of Transportation, Laredo District Joel Aud, Intelligence & Counterterrorism Division; Texas Department of Public Safety	<b>Road Safety: Strategies Going Forward</b>
<b>Eagle Ford Shale Communities</b> <b>Room 202B 2<sup>nd</sup> Floor</b> <b>Moderator</b> Robert Velasquez, Director; University of Texas at San Antonio; Eagle Ford Shale Community Development Program Jameene Yvonne Banks, Associate Attorney with Denton, Navarro, Rocha, Bernal Hyde and Zech, P.C. Barbara Magor Deel, Vice President; American Investment Planners, LLC Jaime Martinez, UTSA Senior International Business Specialist Richard Kunz, Owner; Avalon Park Texas John Facey, Assistant Director; UTSA Eagle Ford Shale Community Development Program	<b>Project Finance &amp; Land Use Planning</b>
<b>Shale Regions</b> <b>Room 202A 2<sup>nd</sup> Floor</b> <b>Moderator</b> Jeff Labenz-Hough, Program Manager; HDR Inc. Leodoro Martinez, Chairman; Eagle Ford Consortium Victor Carrillo, Chairman; West Texas Energy Consortium Bruce Pearson, City Manager; City of Pleasanton Ken Becker, Vice Chairman; West Texas Energy Consortium Jim Teal, County Judge; McMullen County Merle Taylor, City Manager; City of Snyder	<b>The Eagle Ford &amp; West Texas Consortiums-Conversation and Collaboration</b>
<b>Infrastructure and Natural Resources</b> <b>Room 204A 2<sup>nd</sup> Floor</b> <b>Moderator</b> Tony Arce, Manager of Community Affairs; AEP Texas Bobby Waid, Manager of Special Projects; Medina Electric Co-op Brad Bierstedt, Asst. to the General Manager; Karnes Electric Co-op Larry Powell, Director of Engineering; Rio Grande Electric Co-op Robert Knowles, Supervisor of Distribution System Planning, AEP Texas	<b>Electric Utilities-It's All About Connecting!</b>

**Workforce/Education**  
**Room 204B**  
**Moderator**  
 Dr. Federico Zaragoza, Vice Chancellor Economic & Workforce Development; Alamo Colleges  
 Gary Shelman, Dean of Career & Technical Education;  
 Palo Alto College, Alamo Colleges  
 Jennifer Yancey, Vice President College Advancement & External  
 Affairs; Victoria College  
 Orlando Zepeda, Assistant to President for Special Projects,  
 Laredo Community College,  
 Johnny Guzman, Dean of College of Applied Sciences;  
 Southwest Junior Community College  
 Katie Sherman, Coordinator; General Industry, Continuing Education  
 Coastal Bend College  
 Dan Korus, Interim Assistant Dean; Del Mar Community College

**Housing**  
**Room 008B River Level**  
**Moderator**  
 Tammye Trevino, HUD Regional Administrator  
 Bart Braselton, Executive Vice President; Braselton Homes  
 Mark Mayfield, Executive Director; Marble Falls Housing Authority  
 and CEO Texas Housing Foundation  
 Bryce Maretzki, Director of Strategic Planning & Policy;  
 Pennsylvania Housing Finance Agency  
 Dr. Harold Hunt, Real Estate Center; Texas A&M University

3:30-4:15 **BREAK** Exhibits and Networking

4:15-5:15 **Breakout B Sessions**

**Healthcare**  
**Room 203B 2<sup>nd</sup> Floor**  
**Moderator**  
 Rachel Gonzales-Hanson, CEO; Community Development Health, Inc.  
 Keila D. Castillo, Epidemiology Supervisor, City of Laredo Health  
 Department  
 Patricia Cigarroa Keck, Director of Student Health Services,  
 Texas A&M International University

**Safety**  
**Room 008A River Level**  
**Moderator**  
 Ludivina Solis, Human Resources Business Partner; Lewis Energy Group  
 Jaime Canales, Webb County Commissioner  
 Danny Rios, Senior Vice President; S&B Infrastructure  
 David Salazar PE, Director of Maintenance; Texas Department of  
 Transportation, Laredo District

**Eagle Ford Shale**  
**Communities**  
**Room 202B 2<sup>nd</sup> Floor**  
**Moderator**  
 Dr. Francine Romero, University of Texas at San Antonio, Dean; College of Public Policy  
 Jameene Yvonne Banks, Associate Attorney with Denton, Navarro,  
 Rocha, Bernal Hyde and Zech, P.C.  
 Barbara Magor Deel, Vice President; American Investment Planners,  
 Jaime Martinez, UTSA Senior International Business Specialist  
 John Facey, Assistant Director; UTSA Eagle Ford Shale Community  
 Development Program

<b>Shale Regions</b>	
<b>Room 202A 2<sup>nd</sup> Floor</b>	
<b>Moderator</b>	
Maria Eugenia Calderon-Porter, Director of the Binational Center at Texas A&M International University	
<b>The Mexican Shale in "Play!"</b>	
Antonio Juarez Alvarado, Economist Universidad Nacional Autonoma de Mexico	
Dr. Rogelio Montemayor Seguy, Former Governor of the State of Coahuila; Currently leads the Cluster of Coahuila	
Manuel Manzanilla Velasquez, Owner; Trev On Industrial Solutions	
<b>Infrastructure and Natural Resources</b>	
<b>Room 204A 2<sup>nd</sup> Floor</b>	
<b>Moderator</b>	
Tim Trevino, Interim Co-Executive Director; Alamo Area Council Of Governments	
<b>Issues and Demand to Infrastructure in the EF Region</b>	
Dr. Richard Tangum, Professor of Architecture and Planning, UTSA	
Dr. Juan Gomez, Deputy Director; UTSA Texas Sustainable Energy Research Institute	
Peter Bella, Natural Resource Director; Alamo Area Council Of Government	
<b>Workforce/Education</b>	
<b>Room 204B 2<sup>nd</sup> Floor</b>	
<b>Moderator</b>	
Elizabeth "Betty" Sifuentes, Director Workforce Systems; Middle Rio Grande Development Council	
<b>Building a Pipeline of Qualified Workers through Collaboration-Innovative Oil and Gas Solutions</b>	
Alicia G. Carrillo, Ph.D., Director Career & Technical Education; United ISD	
Rogelio Trevino, Executive Director; Workforce Solutions South Texas	
Ken Carlson, Deputy Executive Director; Workforce Solutions Alamo	
Orrin Garcia, Manager of Information & Technical Services, Workforce Solutions Alamo	
Mike Milson, Director of Business Services; Workforce Solutions Golden Crescent	
Amy Kiddy Villarreal, WIA Contract Manager/Performance Analysis/Labor Market Information, Workforce Solutions Coastal Bend	
<b>Housing</b>	
<b>Room 008B River Level</b>	
<b>Moderator</b>	
Gil Gonzalez, Director Rural Business Program; University of Texas at San Antonio	
<b>Eagle Ford Shale Investment Opportunities</b>	
Jennifer Kolbe, Executive Director La Vernia Municipal Development District	
Dale Fowler, President Victoria Economic Development Corporation	
Raul Perez, Maverick County Development Corporation	
Victor Garza J.D., Executive Director Refugio County Community Development Foundation	
Jim Gray, City Manager; City of Ingleside	
5:15	<b>ENJOY FIESTA ON YOUR OWN</b>
<b>WEDNESDAY, APRIL 23, 2014</b>	
7:30-8:00	Breakfast, Exhibits & Networking
8:00-8:10	<b>Welcome</b> Leodoro Martinez, Chairman; Eagle Ford Consortium
8:10-8:15	<b>Opening Remarks</b> County Judge Joel Rodriguez, La Salle County

		Chairman, Middle Rio Grande Development Foundation
8:15-8:45	<b>Introduction Keynote Speaker</b>	Rebecca Viagran, San Antonio Councilwoman Chairman Andres Alcantar, Texas Workforce Commission <i>Innovations &amp; Partnerships Advancing the Skills of the Oil and Gas Workforce</i>
8:45-9:30	<b>Panel Moderator</b>	<b>Trends: Short and Long Term Stakeholder Outlook in the Shale</b> Chris Ashcraft, Vice-President; South Texas Energy & Economic Roundtable Johnnie Howard, Area Sales Manager; Weatherford Michael Garcia, Director Human Resource Operations; Lewis Energy John Tobin, Senior Technical Specialist; CoastalFlow Measurement Company Steve Webb, Operations Manager South Texas; Allied Oilfield Services Donald Kaminski, Allied Oilfield Services
9:30-10:15	<b>Panel Moderator</b>	<b>South Texas Energy Transportation</b> Silver Vasequez, Quatro Strategic Solutions Matt Barr, Cheniere Energy Frank Brogan, Managing Director, Port of Corpus Christi Authority Barton Simpson, Live Oak Rail Road
10:15-10:45	<b>BREAK</b>	Exhibits & Networking
10:45-11:15	<b>Introduction Keynote Speaker</b>	Railroad Commissioner David Porter Dr. Guillermo Dominguez, Commissioner National Hydrocarbon Commission, Mexican Federal Government <i>Mexican Energy Reform</i>
11:15-12:00	<b>BREAK</b>	Exhibits & Networking
12:00-1:15	<b>Luncheon Introduction Keynote Speaker</b>	Judge Jim Huff, Live Oak County Rod Skaufel, President North America Shale Production; BHP Billiton Petroleum <i>Driving the 21<sup>st</sup> Century Texas Economy: Sustainable Oil &amp; Gas Communities</i>
1:15-2:00	<b>BREAK</b>	Exhibits & Networking
2:00-2:30	<b>Introduction Keynote Speaker</b>	State Representative Richard Pena Raymond, Dist. 42 Dr. Bryan W. Shaw, P.E., Chairman Texas Commission on Environmental Quality <i>TCEQ Update of the Eagle Ford Shale</i>
2:30-2:40	<b>Closing Remarks and Sponsor Recognition</b>	Leodoro Martinez, Chairman; Eagle Ford Consortium
2:40	<b>Closing Reception Celebration and Grand Prize Drawings</b>	Entertainment by: Palomino Mariachi, Palo Alto College-San Antonio



- **Texas Energy Summit 2014 (May 21 – 22, 2014)**

John Adams attended the Texas Energy Summit 2014 conference held in Laredo, TX. Industry, community, and economic leaders focused on the impact and growth of the energy sector across South Texas. The summit included discussions and presentations regarding contracts and investments for Mexico's energy reform, logistics and development opportunities for business and government sectors, risks and opportunities in the global economy, economic development trends, and Eagle Ford Shale experiences and opportunities for the future. The conference agenda follows:

**TEXAS ENERGY SUMMIT 2014  
 CONFERENCE TOPICS  
 (May 22/23, 2014)**

<b>LAREDO ENERGY ARENA &amp; TAMIU</b>	
<b>Wednesday May 21, 2014</b>	
12:00 pm to 6:30 pm	Registration and booth set up
5:30 pm to 7:00 pm	<b>Welcome Cocktail / Signature of MOA with Confederación Patronal de la República Mexicana (COPARMEX) (TAMIU, Helen Richter Watson Gallery/ Killam Library) /</b> <ul style="list-style-type: none"> <li>• Dr. Ray M. Keck, III, President of Texas A&amp;M International University</li> <li>• Act. Juan Pablo Castañón Castañón, National President, COPARMEX</li> </ul>
<b>Thursday May 22, 2014</b>	
7:30 am to 8:45 am	Registration (Laredo Energy Arena)
9:00 am to 9:45 am	<b>Welcoming Presentation: Laredo Energy Arena</b> <ul style="list-style-type: none"> <li>• Raul G. Salinas, Mayor of the City of Laredo</li> <li>• Carlos Villarreal, Laredo City Manager</li> <li>• Dr. Ray M. Keck, III President of Texas A&amp;M International University</li> <li>• Leodoro Martinez, President of the Eagle Ford Shale Consortium</li> </ul>
10:00 am to 10:30 am	<b>Presentation.</b> Contracts and Investment Formats: Mexico's Energy Reform <ul style="list-style-type: none"> <li>• Dr. Guillermo Dominguez, Commissioner of the National Hydrocarbons Commission (CNH), Mexico City.</li> </ul>
10:30 am to 10:45 am	<b>Q&amp;A</b>
10:45 am to 11:15 am	<b>Presentation.</b> Logistics and Development Opportunities for Business and Government Sector Dr. Marcos Guayasamin- Project ZEDE Pacific Refinery and Petrochemical Park – Ecuador
11:15 am to 11:30 am	<b>Q&amp;A</b>
11:30 am to 1:00 pm	<b>International Trade Show exhibits</b> Laredo Energy Arena
1:00 pm to 2:00 pm	Luncheon (Laredo Energy Arena)
2:15pm to 3:15 pm	<b>Presentations and panel.</b> Risks and Opportunities in the Global Economy. Mexico's Socio-Economical & Political Landscape. <ul style="list-style-type: none"> <li>• Moderator: Alberto Tovar, El Financiero</li> <li>• Jonathan Ruiz, economist from El Financiero</li> <li>• Jesus Cañas, economist from the Federal Reserve Bank Dallas Branch</li> </ul>
3:15 pm to 3:45	<b>Q&amp;A</b>
Small Business Development Center (SBDC) Ongoing Presentation every (2) hours	



3:45 pm to 4:45 pm	<b>Presentation and panel.</b> Economic Development: Trends and Opportunities of the Mexican Energy Reform. <ul style="list-style-type: none"> <li>• Dr. Rogelio Montemayor, President of the Mine and Petroleum Cluster of Coahuila</li> <li>• Antonio Juarez, Director of the Mexican Association of Petroleum Service Companies. AMESPAC</li> <li>• Javier Zenteno, Partner of the law firm Zenteno-Lira Mora Attorneys.</li> <li>• Juan Carlos Solis, Coordinator of the Commission of Administrative Law, Mexican Law Association A.C.</li> <li>• Juan Acra, COPARMEX</li> </ul>
4:45 pm to 5:00 pm	Q&A
<b>Friday May 23, 2014</b>	
9:00 am to 9:45 am	<b>Bi-national Welcoming Presentation (Laredo Energy Arena)</b> Moderator: Leodoro Martinez, Chairman of the Eagle Ford Shale Consortium <ul style="list-style-type: none"> <li>• Henry Cuellar, U.S Representative for Texas's 28th Congressional District</li> <li>• Jorge Morales Cerón , Activo Integral Brugos, Pemex Exploration and Production</li> <li>• Ricardo Martínez Sierra, Activo Integral Burgos, Pemex Exploration and Production</li> <li>• Javier Medina Malagón, Legislative Connection, Pemex General Management.</li> <li>• Hector Garcia Garcia, Mexican Representative for Nuevo Leon's 11th District, President of the Burgos Basin</li> <li>• Amira Gomez Tueme, Mexican Representative for Tamaulipas</li> </ul>
9:45 am to 11:00 am	<b>Presentation.</b> General Panorama for the Region Eagle Ford Shale: Experiences and Visualization of the Future. Introduction by Maria Eugenia Calderon-Porter, Director of the TAMU Bi-national Center <ul style="list-style-type: none"> <li>• David Porter, Rail Road Commissioner</li> <li>• Jesse Thompson, Business Economist, Federal Reserve Bank, Dallas Branch</li> </ul>
11:00 am to 11:30 am	Q&A
11:30 am to 12:00 pm	<b>Presentation.</b> International Opportunities in Laredo TX. <ul style="list-style-type: none"> <li>• Carlos Villarreal, Laredo City Manager</li> </ul>
12:00 pm to 1:00 pm	Luncheon (LEA)
1:00 pm to 2:00 pm	<b>Presentation and panel.</b> <ul style="list-style-type: none"> <li>• Development Hubs. Socio-Economic Impact, City Models and Developmental Projects from Eagle Ford Shale. Experiences from the Cities and Counties in Eagle Ford Shale Region. Moderator: Leodoro Martínez, Chairman of the Eagle Ford Shale Consortium</li> <li>• Richard Raymond, Texas House of Representatives 42<sup>nd</sup> District</li> <li>• Larry Dovalina, Cotulla City Manager</li> <li>• Jaime Canales, Webb County Commissioner, Special commissioner of the Eagle Ford Shale Workforce and Surveillance Committee</li> </ul>
9:00 am to 6:00 pm	<i>Exhibitions and pavilions from Mexico. Exhibitions and booths from Eagle Ford Shale.</i>

SCHEDULE SUBJECT TO CHANGE

- **Fall TEDC BEDC (Basic Economic Development Course) in Austin (September 9-12, 2014)**

Attended the Fall TEDC BEDC (Basic Economic Development Course) in Austin, which attracted 60 economic development professionals from across Texas, many representing South Texas City, County, and EDC board members.

The TEEX Economic Development Program, in partnership with the Texas Economic Development Council (TEDC) and the International Economic Development Council (IEDC), coordinates the course for entry-level economic development professionals. Participants leave with a comprehensive understanding of the keys of successful economic development. The course also serves as the equivalent to IEDC's *Intro to Economic Development Course*, the first step in becoming an IEDC Accredited Economic Development professional. See Attachments for the BEDC Course Schedule.



Basic Economic  
Development Course  
(BEDC)  
Course Schedule  
September 9 – 12, 2014

Hilton Garden Inn  
500 N. IH 35  
Austin, TX



Tuesday, September 9	Wednesday, September 10	Thursday, September 11	Friday, September 12
8:30 – 9:00 a.m. Registration	7:30 – 8:00 a.m. Breakfast Provided – Classroom	7:30 – 8:00 a.m. Breakfast Provided – Classroom	7:30 – 8:00 a.m. Breakfast Provided – Classroom
9:00 – 10:15 a.m. Welcome / Orientation <i>Lisa Mutchler &amp; Bill Lacy</i>	8:00 – 10:00 a.m. Business Finance & Capital Market Programs <i>Russell Gallahan</i>	8:00 – 10:00 a.m. Business Retention & Expansion <i>Tom Long</i>	8:00 – 10:00 a.m. Managing Economic Dev Organizations <i>Tom Mullins, Joe Newman, &amp; Charisse Bodisch</i>
10:15 – 10:30 a.m. Break	10:00 – 10:15 a.m. Break	10:00 – 10:15 a.m. Break	10:00 – 10:15 a.m. Break
10:30 – 11:45 a.m. Introduction to Economic Development <i>Alysia Cook</i>	10:15 – 12:15 p.m. Business Attraction & Marketing <i>Hunter Hilburn</i>	10:15 – 12:15 p.m. Workforce Development <i>Kent Andersen</i>	10:15 – 12:15 p.m. Ethics & Economic Development <i>Michael Meek</i>
11:45 – 1:00 P.M.	12:15 – 1:30 P.M.	12:15 – 1:30 P.M.	Home Sweet Home!
1:00 – 3:00 p.m. Community Development <i>Alysia Cook</i>	1:30 – 3:30 p.m. Strategic Planning <i>Steve Gilbert</i>	1:30 – 3:30 p.m. Real Estate Dev & Reuse <i>Eric Davis</i>	
3:00 – 3:15 p.m. Break	3:30 – 3:45 p.m. Break	3:30 – 3:45 p.m. Break	
3:15 – 5:15 p.m. Analyze & Profile a Community <i>Karen Beard</i>	3:45 – 5:45 p.m. Entrepreneur & Small Business Development <i>John Adams</i>	3:45 – 4:30 p.m. Site Selector <i>Jubal Smith</i>	
		4:30 – 5:15 p.m. ED Trends - Discussion <i>Tom Stellman</i>	
6:30 p.m. Dinner on your own or group for those interested in eating together ☺	6:00 – 7:30 p.m. BEDC Networking Reception	6:30 p.m. Dinner on your own or group for those interested in eating together ☺	

Version 07.30.14

- **Laredo Development Foundation Competitive Assessment Report – Presentation and Delivery – Laredo, TX (September 11, 2014)**

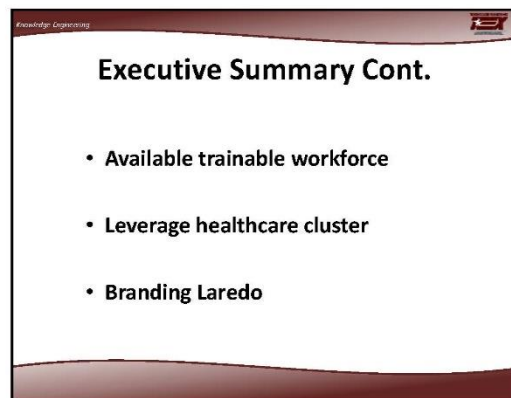
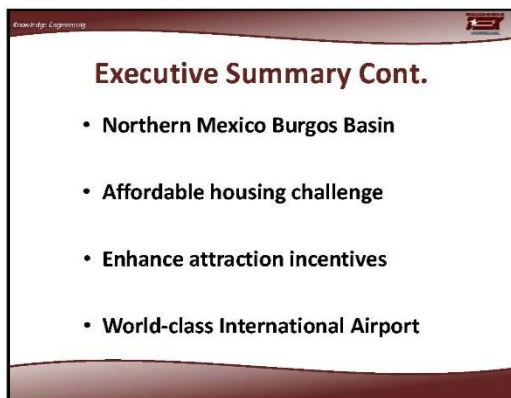
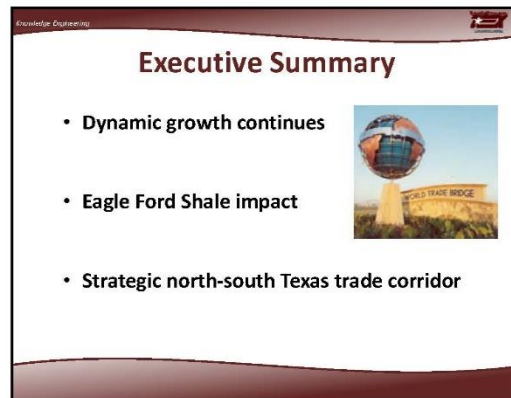
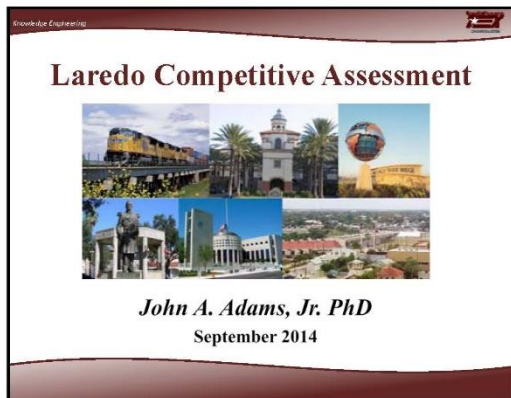
To assess the growing demands on the region, the Knowledge Engineering, Economic Development unit of TEEX, provided a presentation and final report of findings and recommendations for the development of a business retention, expansion, and attraction strategy for the Laredo Development Foundation (LDF). The assessment highlighted a number of key factors which outline opportunities for growth and expansion within the region. Strategies, long-term vision and recommendations were addressed in the areas of healthcare expansion, attracting affordable multi and single family housing, market sectors, employment, oil and gas, manufacturing, aviation, international trade, and general diversification of the local economy. A copy of the presentation follows:



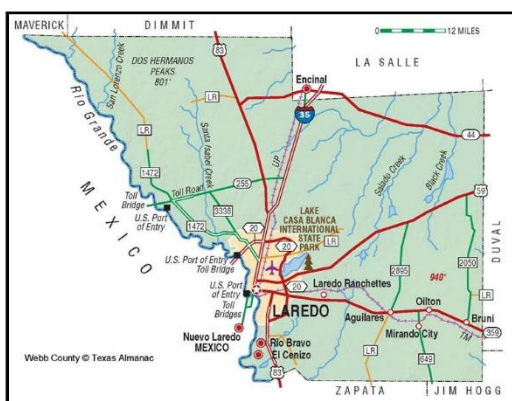
## Laredo Development Foundation Competitive Assessment

Presented by:  TEXAS A&M ENGINEERING  
EXTENSION SERVICE









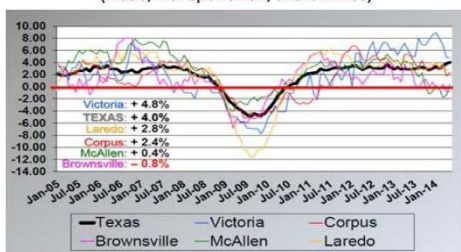
## Laredo Labor Force Data

Data Series	Jan 2014	April 2014	July 2014*
Civilian Labor Force	101.9	101.7	101.5
Employment	95.6	96.5	95.2
Unemployment	6.3	5.3	6.3
Unemployment Rate	6.2	5.2	6.3

Source: U.S. Bureau of Labor Statistics

\* Preliminary

## Employment Growth Rate (Trade, Transportation, and Utilities)

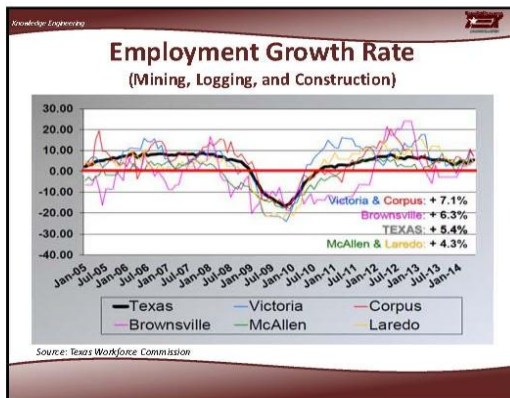


Source: Texas Workforce Commission

## Laredo Employment and Growth Rate

Job Sector	No. of Jobs	% of Total Jobs	Job Growth (May '13 - May '14)
Trade, Transp., & Utilities	29,800	30.7%	+2.8%
Local Government	17,300	17.8%	+1.8%
Education & Healthcare	14,400	14.8%	-1.4%
Leisure & Hospitality	10,400	10.7%	+6.1%
Professional & Bus. Serv.	7,400	7.6%	-3.9%

Source: Texas Workforce Commission



- Knowledge Engineering
- ### Targeted Market Sectors
- Medical-Healthcare
  - Automotive
  - Oil and Gas
  - Advanced Manufacturing
  - Aviation Services

- Knowledge Engineering
- ### Healthcare
- Regional service cluster
  - Extended healthcare – VA
  - Education– UT Health Science Center, LCC, & TAMIU
  - Advanced manufacturing/assembly

- Knowledge Engineering
- ### Automotive
- Cross-roads to North-South trade
  - On-shoring of manufacturing
  - Supplier-assembly and distribution
  - Site locations for automotive



Knowledge Engineering

### Oil and Gas

- Eagle Ford Play multi-year
- Burgos – Northern Mexico
- Supplier hub for Mexico
- Advanced tech center and training



Knowledge Engineering

### Advanced Manufacturing

- Impacts all industries
- Value-added workforce
- Public-private collaboration
- Medical products design and assembly
- CNC, 3D printing, QC and cloud

Knowledge Engineering

### Aviation

- Laredo International – strategic location
- Aviation light manufacturing
- MRO and flight safety
- Drone operations: R&D



Knowledge Engineering

### Laredo International Airport



★ Sites available for new aviation or MRO companies



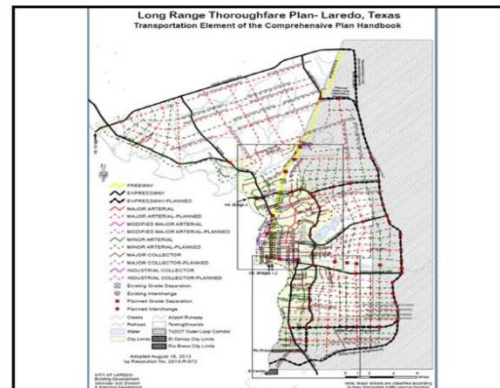
- Threats**
- Public-private cooperation
  - Government regulation
  - Diversification of local economy
  - Infrastructure and congestion

- Weaknesses**
- Long term vision
  - Affordable land and housing
  - Incentives to attract business
  - Quality of life

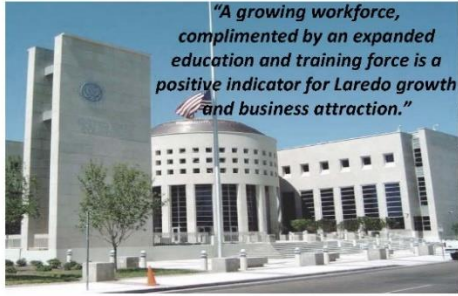
- Strengths**
- The North American logistics hub
  - Young workforce
  - Ample water
  - Strong relationships between Laredo and Nuevo Laredo
  - Growing healthcare sector

**Opportunities**

- Enhanced healthcare sector
- Oil and gas “bridge” to Mexico
- Airport strategic location
- Expand supplier base and light manufacturing

*“A growing workforce, complimented by an expanded education and training force is a positive indicator for Laredo growth and business attraction.”*



- **The North American Advanced Manufacturing Research and Education Initiative (NAAMREI) Summit in Harlingen, TX (January 29, 2015)**

John Adams was the keynote speaker making a presentation on “South Texas Economic Sustainability” at the NAAMREI summit in Harlingen. The Summit featured a unique consortium of regional executives that will delve into regional infrastructure needs, economic sustainability, and aerospace growth opportunities. The Conference Agenda follows:



**NAAMREI Regional Manufacturing Summit**  
January 29, 2015 7:45am – 3:00pm

**Location:** Texas State Technical College University Center  
2424 Boxwood, Harlingen, TX 78550

## Agenda

<b>7:45am – 8:30am:</b>	Registration & Breakfast
<b>8:30am – 9:00am:</b>	<p>Welcome—Carlos Margo, Associate Dean, South Texas College Office of Industry Training and Economic Development and Executive Director for NAAMREI</p> <p>Greeting and Introductory Remarks—Dr. Stella Garcia, President, Texas State Technical College—Harlingen.</p> <p>The NAAMREI Alliance—Dr. Guy Bailey, President, The University of Texas Rio Grande Valley</p>
<b>9:00am – 10:45am:</b>	<p><b>Panel 1 – Regional Infrastructure Needs (Roads and Bridges)</b> (Mike Willis, Facilitator)</p> <ol style="list-style-type: none"> <li>1. Pilar Rodriguez, Executive Director, Hidalgo County Regional Mobility Authority</li> <li>2. Pete Sepulveda, Executive Director, Cameron County Regional Mobility Authority</li> <li>3. Juan Lerma, RGV Switching Company</li> </ol>
<b>10:45am – 11:00am:</b>	Break
<b>11:00am – 11:45am:</b>	<p><b>Panel 2 – Regional Infrastructure Needs—Sea Ports</b></p> <ol style="list-style-type: none"> <li>1. Eddie Campirano, Director and CEO, Port of Brownsville</li> <li>2. Port of Harlingen</li> </ol>
<b>11:45am – 12:30am:</b>	Lunch (provided by Harlingen Manufacturers Association)
<b>12:30pm – 1:00pm:</b>	<p><b>Guest Speaker: Dr. John Adams, Texas A&amp;M Engineering Extension Office South Texas Economic Sustainability</b></p> <p>Introduction by Leticia Flores, Valley Regional Representative from the Office of the Governor for Economic Development &amp; Tourism</p>
<b>1:00pm – 2:30pm</b>	<p><b>Panel 3 – Aerospace Cluster Growth Opportunities</b></p> <ol style="list-style-type: none"> <li>1. Space X</li> <li>2. United Launch Alliance</li> <li>3. Brownsville Economic Development Corporation</li> <li>4. Harlingen Economic Development Corporation</li> </ol>
<b>2:30pm</b>	Final remarks, Norwood Fedie, President, Harlingen Manufacturers Association
<b>2:30pm – 3:00pm</b>	Tour of TSTC Manufacturing Labs (or ULA)

## B. MEDIA AND REGIONAL PROMOTION

A combination of local city and economic development groups along with regional organizations have enhanced the awareness and opportunities for doing business in South Texas over the past two years. The localized message is conveyed by a combination of EDCs, chambers of commerce, and tourism attraction efforts. The website and promotional materials have been developed and are in place, and staff have been well trained to answer general inquiries.

The attraction and expansion of manufacturing, suppliers, training and education, and healthcare services needs to include a regional focus. Investment and employment is driven today more so by the dynamics of a 'region' and thus the resources and supplementary services that can be provided for daily operations. Communities across South Texas, and particularly the number of cities in close proximity in the Rio Grande Valley, are very competitive. This competition is very healthy and draws attention to the regions employment needs, educational attainment and investment opportunities.

Another media focus area that will continue to grow in importance includes information, web sites, and out-reach of educational entities across the region. Given the demand for job training in the advanced manufacturing and healthcare industries, the universities and community colleges will need to participate and have a major role in helping shape the overall message for South Texas. An additional organization that will need to play a critical role is Texas WorkForce Commission due to their capability in assisting and assessment of job availability and training. TWC tracks monthly data focusing on employment trends and provides timely information and tools for addressing the employment needs of the region.

Regional organizations across South Texas, such as RSTEC, NAAMREI, and START, are entrenched in the region and should strongly consider a more active role not only in fostering regional cooperation but also promoting the strengths of the region. Due to the growing advanced manufacturing, space and aviation sectors, a larger promotional focus should be placed on enhancing attention to this new industrial shift. Promotional activities would attract additional domestic and international business, investment, jobs, and suppliers, some would likely shift operations to co-locate either with *maquiladora* operations and/or to the growing space industry.

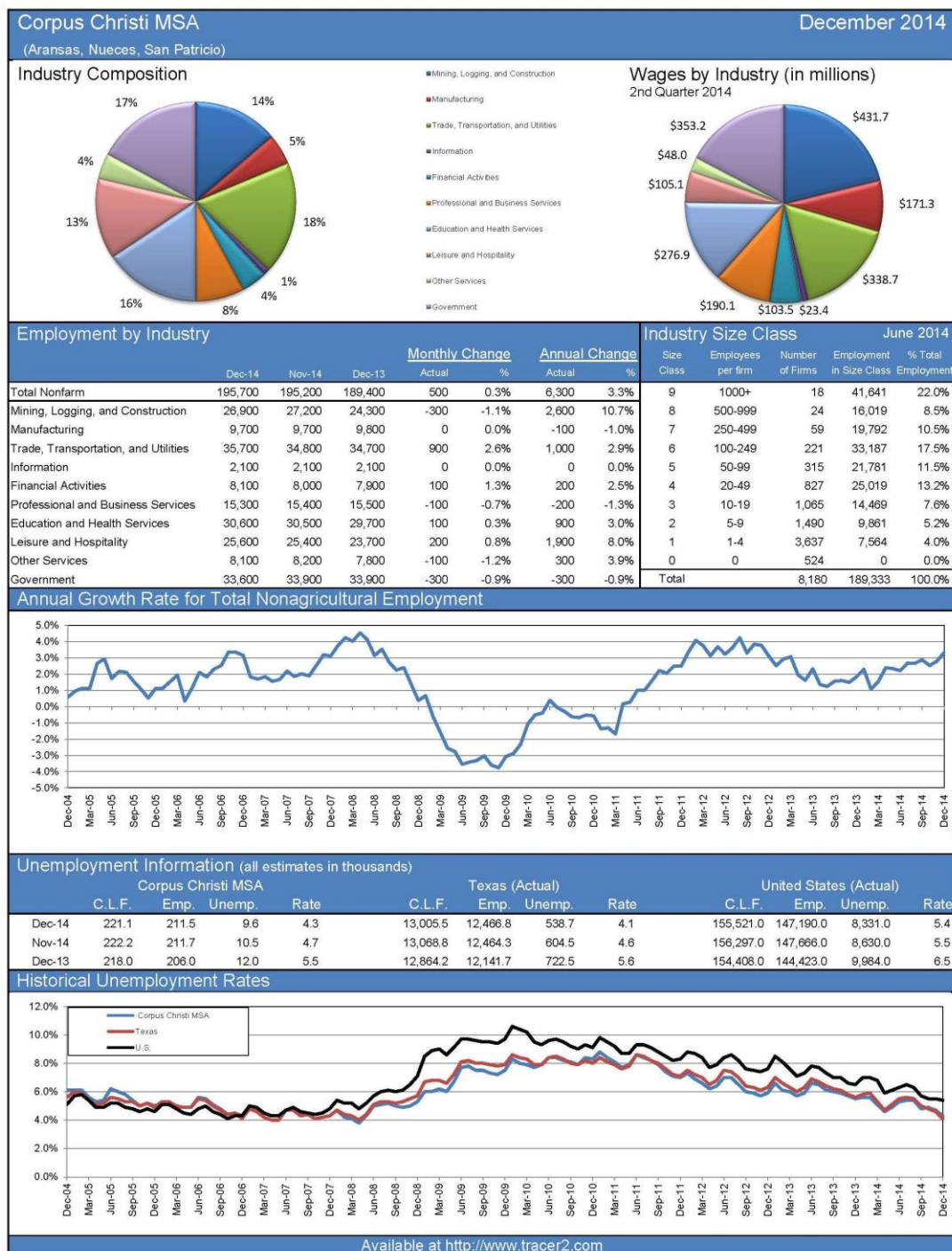
Furthermore, the attraction and promotion strategy of the region, as well as the entire state of Texas, must be mindful of the ongoing global trend of 're-shoring,' the return of industry manufacturing from 'off-shore' back to US domestic locations, which has grown yearly since 2013. The prospects for attracting US and foreign manufacturing and oil and gas support services to support the energy sector of South Texas is clearly demonstrated by the heightened investment in the Eagle Ford Shale area and Coastal Bend region as well as companies locating manufacturing, salvage, distribution, and supply operations along the Rio Grande.



## IX. ADDENDUMS

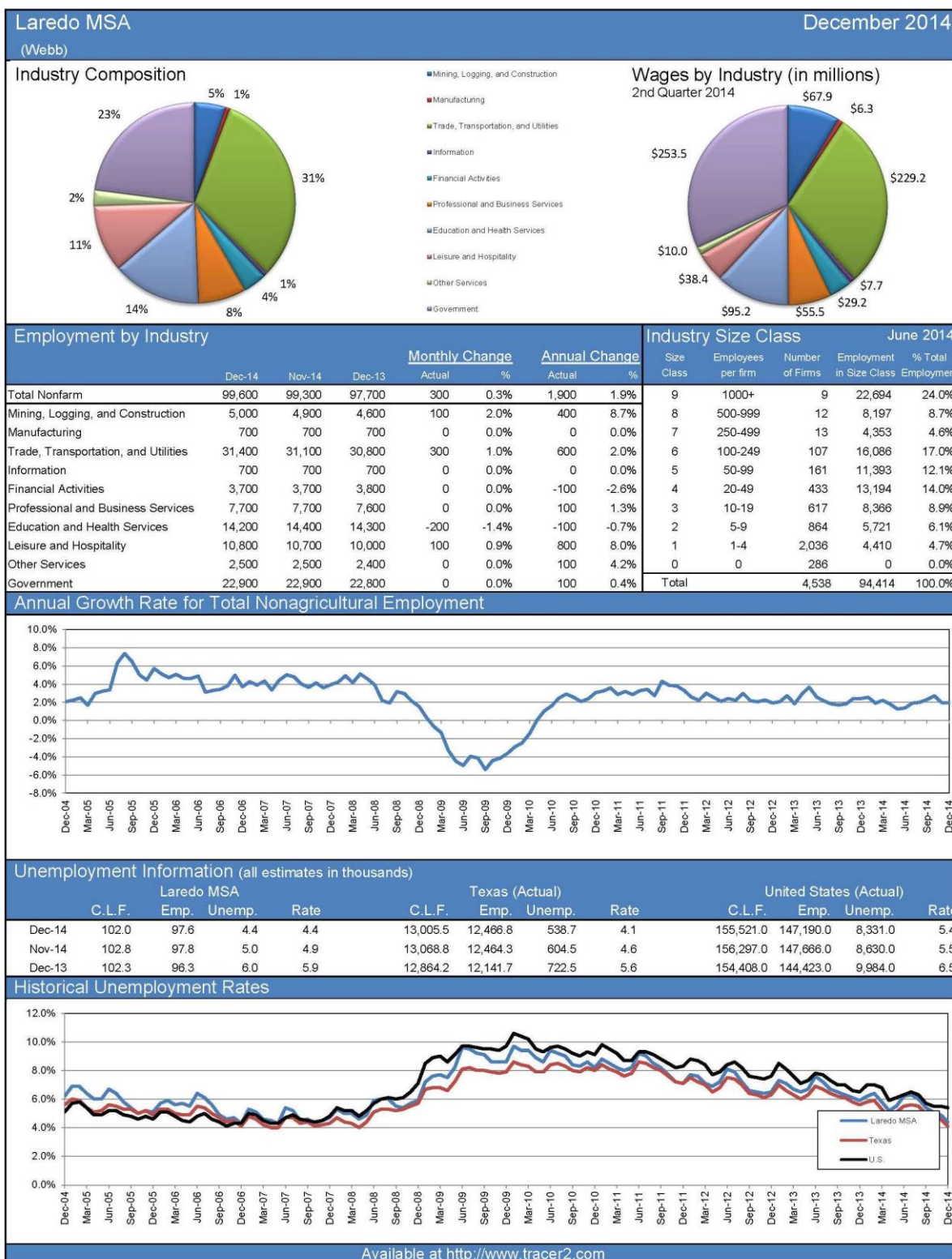
### A. MSA ECONOMIC PROFILES

#### Corpus Christi

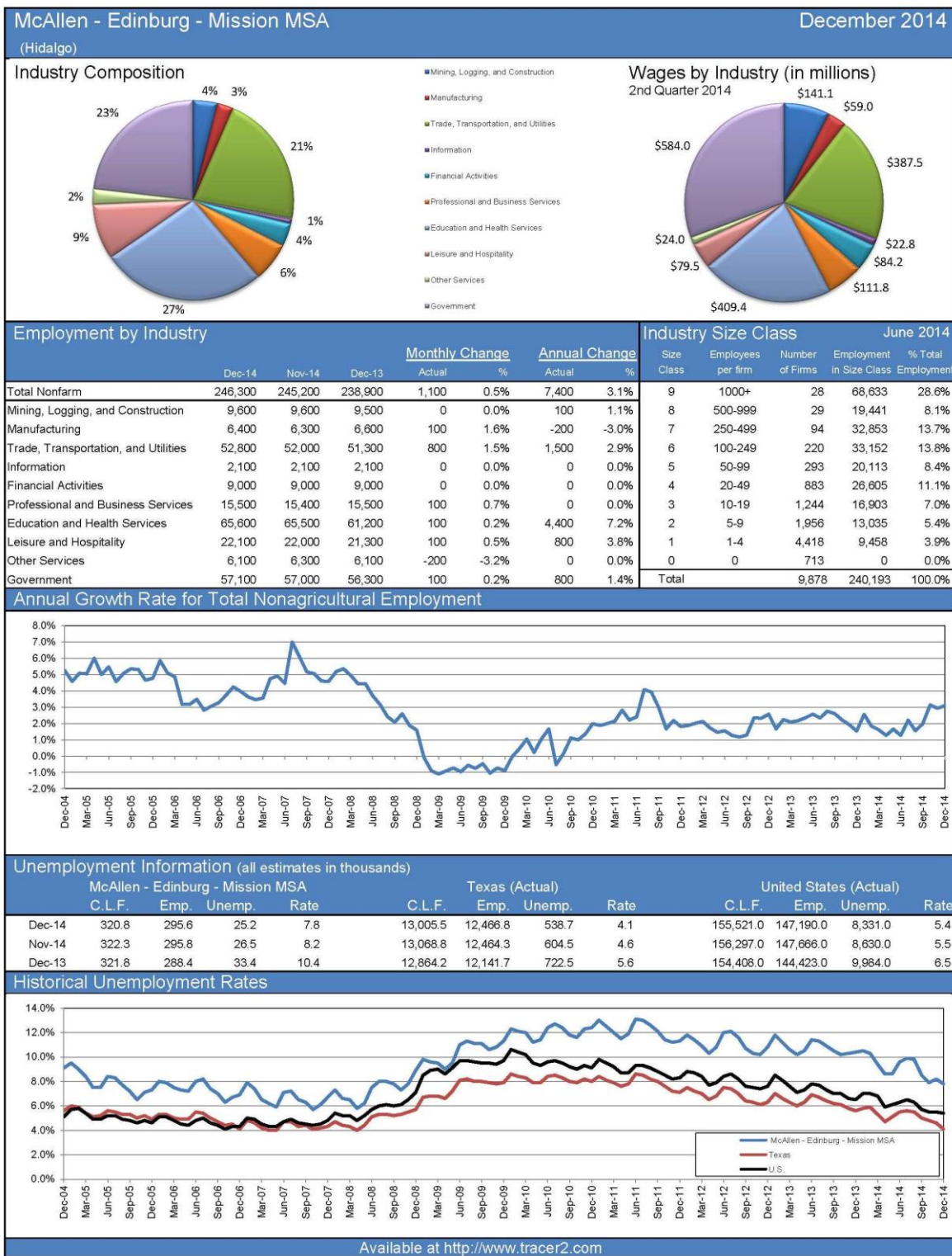




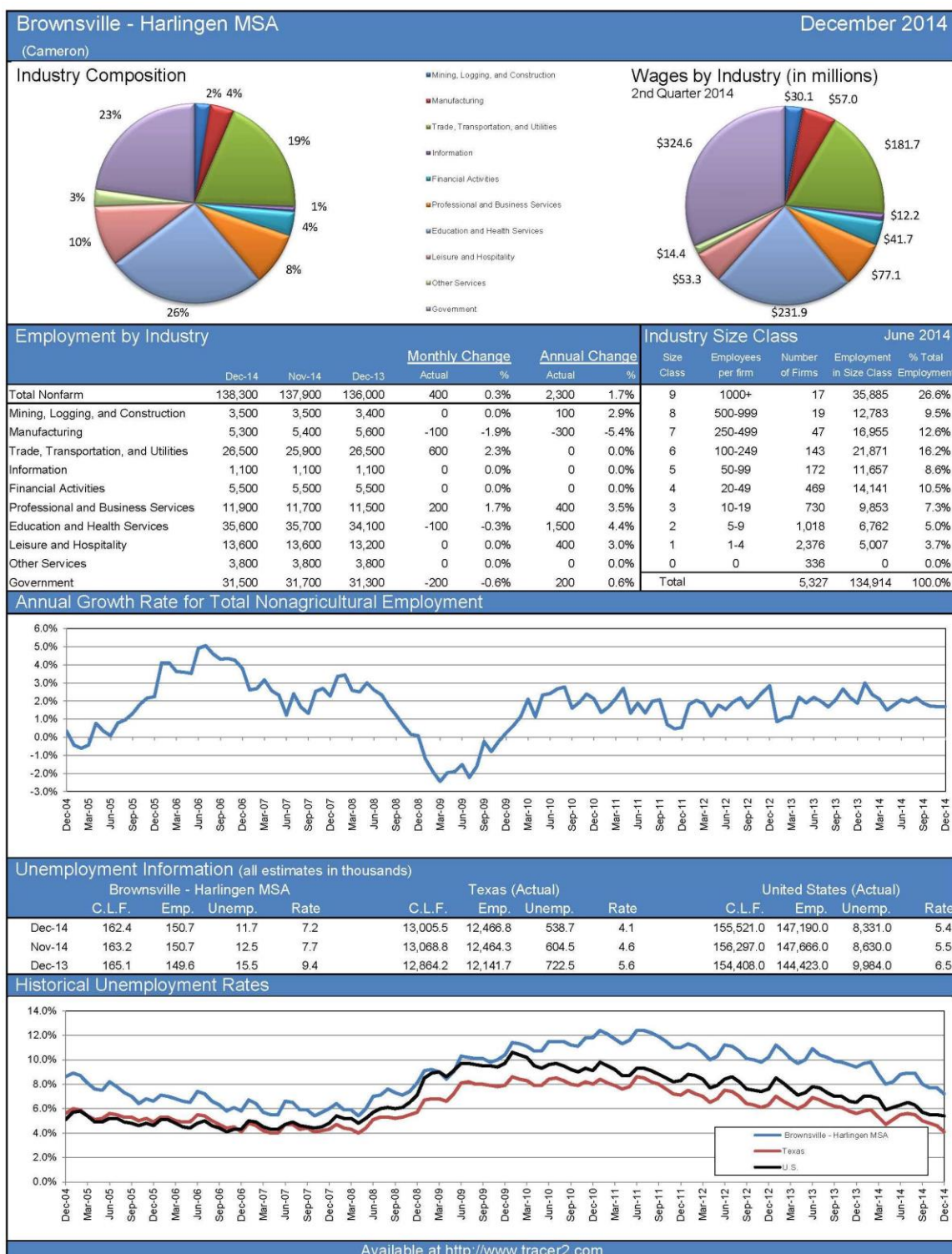
## Laredo



## McAllen-Edinburg-Mission



## Brownsville/Harlingen





## B. MSA ECONOMIC PROFILES

### South Texas Workforce Development Area (WDA)

