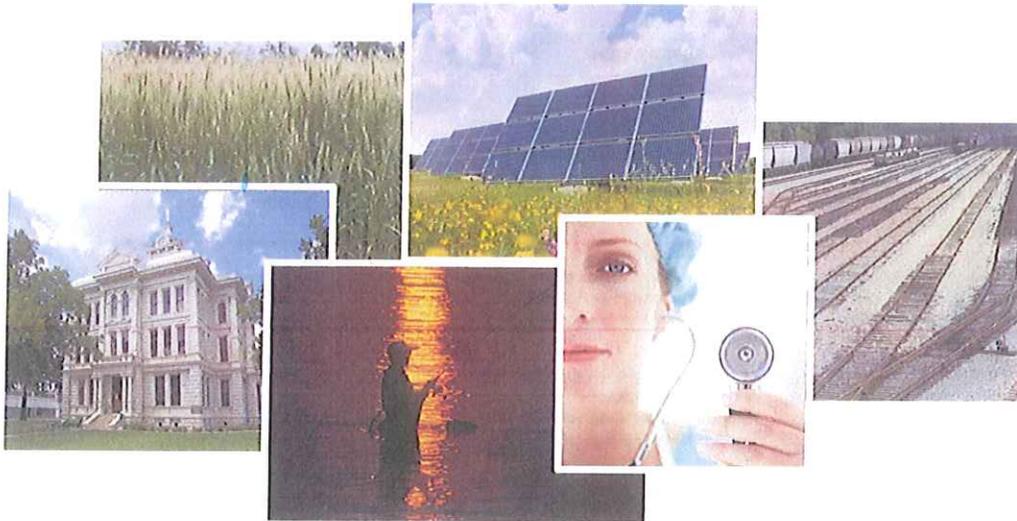


# An Economic Strategy for the REV-UP Region

Prepared for the Revitalization and Utilization Planning (REV-UP) Council | June 2011



TIP  
strategies



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REV-UP Region

## About this work

This study was 100-percent funded with federal funds under a US Department of Labor National Emergency Grant awarded to the Central Texas Workforce Development Board (doing business as Workforce Solutions of Central Texas).

The solution was created by the grantee and does not necessarily reflect the official position of the US Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

## About TIP

TIP STRATEGIES, INC. (TIP) is a privately held Austin-based economic development consulting firm committed to providing quality solutions for public and private-sector clients.

Established in 1995, the firm's primary focus is strategic economic development planning. In addition, TIP has experience with entrepreneurship, target industry analysis, workforce, and redevelopment.

Our methods establish a clear vision for economic growth. Community leaders across the country have embraced the TIP model of Talent, Innovation, and Place to achieve successful and sustainable economies.



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In addition, significant input was provided by individuals throughout the region through Advisory Committee workshops held in July and December 2010 and town hall meetings held in four locations in March and April 2011. We are grateful to those individuals who took the time to share their insights.

### REV-UP Council Members

NAME & TITLE	ORGANIZATION	REV-UP COUNTIES COVERED
<b>Central Texas</b>		
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Frank Summers	County Judge (former)	Milam
Susan Kamas, Executive Director	Workforce Solutions of Central Texas	Bell, Milam
Jerry Halster, Director	Central Texas Workforce Centers	Bell, Milam
Jim Reed, AICP, Executive Director	Central Texas Council of Governments	Bell, Milam
<b>Rural Capital</b>		
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Al Lopez, Planner	Workforce Solutions of Rural Capital Area	Lee, Williamson
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<b>Brazos Valley</b>		
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Cindy Jerman, Workforce Development Coordinator	Workforce Solutions of Central Texas (Rockdale Center)	Milam

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removing barriers to small business owners, providing training and networking opportunities, and facilitating access to capital. The creation of an on-line portal – a website that provides a single point of access to the region's service providers and resources – could help link rural counties with resources available in the three metropolitan areas and elsewhere in the state. Improving access to high-speed Internet is an essential foundation for a successful entrepreneurship initiative.

- **Position the region for energy-related projects.** National security concerns, global climate change, and volatile gas prices continue to fuel interest in renewable energy sources. The REV-UP region is well-positioned to benefit from this trend. Energy-related research at Texas A&M (including bioenergy) and the University of Texas (the Energy Institute), coupled with the aggressive pursuit of clean energy and clean technology investment in the region, should continue to drive dollars and talent to the area. Strategies to capture energy-related growth include raising awareness of the region and its assets among energy-related agencies in Washington. This effort should extend beyond the US Department of Energy to include the Department of Agriculture and the Economic Development Administration. Supporting training needs for the "green economy" and creating an environmentally friendly profile for the region are related strategies.
- **Strengthen agricultural opportunities.** The REV-UP region has a long agricultural tradition. Not only does agriculture make an important contribution to the local economy, it provides a quality of life that defines large parts of the region. Helping to ensure the viability of this sector should be a priority. The focus of this recommendation is on connecting farmers and producers with the opportunity to access new markets. For commercial producers, helping raise awareness about industrial markets for sorghum, one of the region's key crops, is an example. For smaller farms, the emphasis is on linking locally grown products with metropolitan areas and ensuring that best practices are available in areas such as sustainable farming, energy efficiency, and succession planning. Examples of the former include leveraging the "locavore" movement and promoting community supported agriculture.
- **Continue to pursue catalyst project for Alcoa site.** The REV-UP Council is not in a position to know Alcoa's plans for the 35,000 acres they own in Milam County. Nor are they charged in any way with marketing the property or acting on Alcoa's behalf. However, the presence of a shuttered facility can serve as a constant reminder of a difficult event. Furthermore, the reuse of brownfield facilities typically takes place over an extended period of time. Given the long planning horizon that is likely to be required for a project of that scale, the sooner the community becomes engaged in thinking about its reuse, the better. While it did not materialize, the Velocita Holdings proposal to build a "green" city on 11,000 acres of the Alcoa site, is an example of a catalyst project that would have the potential to transform the regional economy. Exploring options on a similar scale should be part of the implementation of this plan.
- **Ensure infrastructure is in place to support strategies.** In order to realize success in the recommended sectors, both traditional and nontraditional infrastructure needs must be met. The region is fortunate to have some strong infrastructure assets – a network of highways that are part of the Texas Trunk System (and one road, US 190, that is of strategic interest nationally), a concentration of freight rail, and low-cost electrical power (relative to other parts of the nation). Maintaining these assets should be the foundation of the regional strategy. However, two areas merit special consideration. First is access to broadband. The ability to access high-speed internet services has become central to the way business is conducted. Perhaps most important to the region's future opportunities is the issue of water. While much of the area has ample groundwater, the state's approach to water marketing makes it difficult to ensure

that sufficient supplies will remain in the rural areas to accommodate future development. Demand from the state's metropolitan area is placing increasing pressure on water availability in rural areas. Failure to secure adequate supplies could severely limit the ability of some counties to develop in the future.

### Conclusion

These recommendations serve as the jumping off point for the REV-UP project. Over the coming months, the Advisory Committees described above will take these ideas and refine them. The ultimate goal will be to identify a single project or a cluster of strategies for which additional funding can be pursued. The REV-UP planning process has demonstrated the ability of the member communities to work together on a continuing basis and has already strengthened relationships among key players in the region.

Two principles should guide the implementation phase. First, is a recognition of the role of workforce in the regional economy. The REV-UP region was identified based on its shared workforce – Alcoa employees. As a result, a common thread throughout these sectors must be ensuring the availability of a trained and flexible workforce. Nurturing and attracting talent is perhaps the most fundamental issue for creating long-term, sustainable economic vitality in the 21st Century. The underpinning for each sector strategy should be leveraging regional organizations and resources to build a talent pool that meets the needs of local companies, as well as those that are targeted for the future.

The second guiding principle should be to place a premium on rurally focused initiatives. This recommendation should not be construed as minimizing the importance of the metropolitan areas. There is no question their success drives that of the outer regions. However, the impact of the Alcoa layoffs was greatest on the rural counties. Furthermore, the metropolitan areas – Austin-Round Rock, Killeen-Temple, and Bryan-College Station – have their own economic agendas which would be difficult for the REV-UP process to influence. Concentrating on better linking the rural counties to those agendas will pay off for all parties.

The REV-UP region represents a unique opportunity to bring together multiple organizations and communities under a common goal. The REV-UP leadership, along with those individuals who have volunteered their time to serve as advisors to the process, should be commended for their foresight. Combining the resources of the region represents the best approach to capitalize on available opportunities and revitalize the economies of the communities most affected by Alcoa's closure. The sector strategies outlined in this document provide a framework for accomplishing these goals.

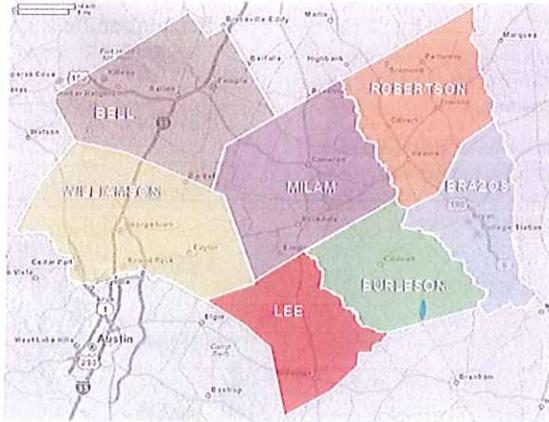
## 2: Economic Assessment

To provide a common framework for our recommendations, we began by compiling demographic and economic data on the region. These data were supplemented by focus groups with area leaders as well as our understanding of region and of relevant economic and demographic trends.

### About the data

A number of data sources were used to prepare this analysis.

- **Population.** Historical estimates of population by county are from the U.S. Census Bureau; projections were prepared by Moody's Analytics.
- **Unemployment.** Data are from the U.S. Bureau of Labor Statistics' household survey (obtained via Moody's Analytics).
- **Employment & occupation.** Employment and occupational analyses were performed using Strategic Advantage, a suite of web-based analysis tools created by Economic Modeling Specialists Inc. (EMSI). Unless as otherwise noted, figures represent "complete" employment, rather than the "covered" employment typically produced by state and federal workforce agencies. Unlike covered employment, which includes only those industries covered by unemployment insurance, complete employment includes estimates of all industries. Employment data are presented in accordance with the North American Industry Classification System (NAICS, pronounced "nakes"). The system was developed under the direction and guidance of the Office of Management and Budget as the standard for use by Federal statistical agencies in classifying business establishments for the collection, tabulation, presentation, and analysis of statistical data describing the U.S. economy. Occupational data are categorized using the Standard Occupational Classification (SOC) system.



Throughout this section, we highlight commonalities and differences between the urban counties (defined here as Bell, Brazos, and Williamson) and the nonurban or rural counties (Burleson, Lee, Milam, and Robertson). Burleson and Robertson Counties are technically part of a metropolitan statistical area and might, therefore, be thought of as urban. However, they are share more commonalities with Milam and Lee Counties than with Bell, Brazos, and Williamson, so for the purposes of this analysis, we have grouped them accordingly.

### DEMOGRAPHICS

Figure 2.1

- A wide gulf in population size separates the seven counties. Four have fewer than 25,000 residents. The other three have well above 100,000.
- The smaller counties tend to have older populations, with a higher share over the age of 65.
- Net migration patterns also vary. Only two of the counties netted new inbound movers during the 12 months ending in June 2009.

### Demographic summary

Demographic fundamentals in the 7-county region as of mid-year 2009

	Bell	Brazos	Burleson	Lee	Milam	Robertson	Williamson
Total population	285,787	179,992	16,570	16,231	24,628	15,706	410,696
Share of population age 65+	9.3%	7.6%	17.6%	16.4%	17.0%	16.8%	8.7%
Share of population under age 20	34.0%	29.5%	25.9%	28.9%	28.2%	28.9%	30.8%
Share of population of working age, 20-64	56.7%	62.9%	56.5%	54.8%	54.8%	54.3%	60.5%
Hispanic share of population	20.2%	21.9%	17.6%	22.1%	22.6%	18.4%	21.6%
Crude birth rate births per 1000 residents	19.9	14.9	13.6	12.4	14.9	14.6	16.3
Crude death rate deaths per 1000 residents	6.5	5.0	9.3	9.1	10.1	11.0	4.7
Net migration rate movers per 1000 residents	-12.8	+18.3	-4.6	-2.6	-14.3	-4.0	+25.6

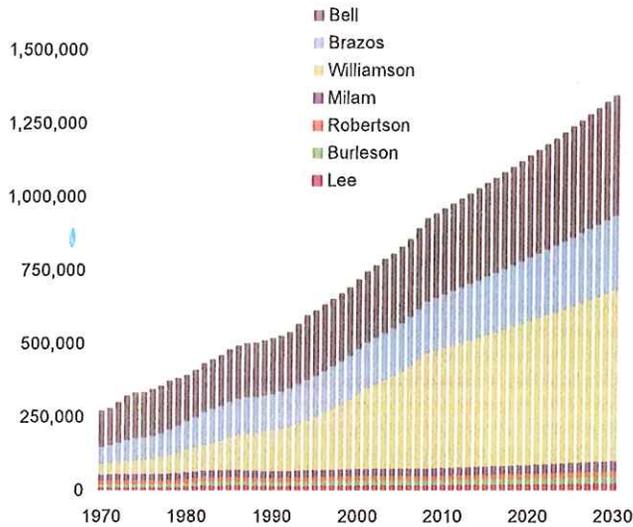
SOURCES: U.S. Census Bureau, 2009 estimates; Moody's Analytics

DEMOGRAPHICS

Figure 2.2

- In 1970, the combined seven-county REV-UP region had a population of about a quarter-million.
- Today the REV-UP region's population is rapidly closing in on the 1 million threshold, with nearly 400,000 more residents expected over the next two decades.

Population history and forecast  
7-county REV-UP region\*



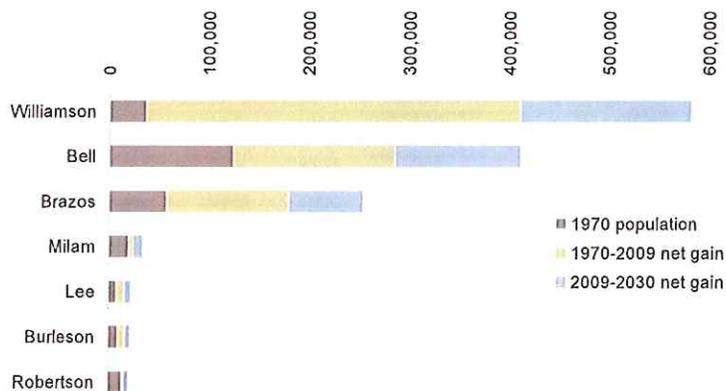
\*NOTE: The REV-UP region includes Bell, Brazos, Burleson, Lee, Milam, Robertson, and Williamson counties.  
SOURCES: U.S. Census Bureau (history); Moody's Analytics (forecast)

DEMOGRAPHICS

Figure 2.3

- Over the past 40 years, Williamson has rocketed past Bell and Brazos Counties to become the region's largest in terms of population.
- The region's three urban counties accounted for about 92 percent of the population as of 2009, with the four rural counties together representing the remaining 8 percent.
- All seven counties are expected to add population over the next 20 years.

2030 population projections for REV-UP counties



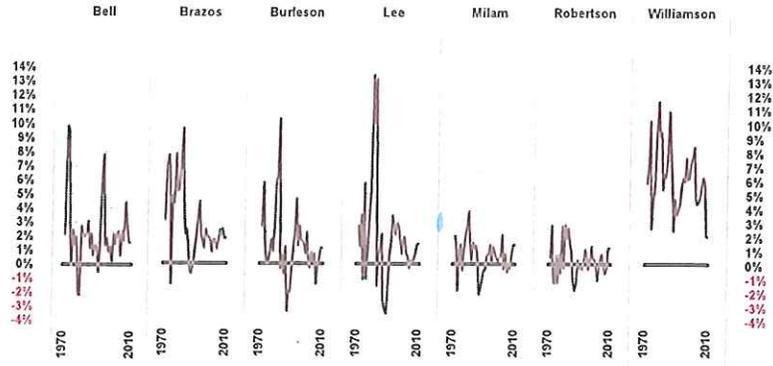
SOURCES: U.S. Census Bureau (history); Moody's Analytics (forecast)

DEMOGRAPHICS

Figure 2.4

- Williamson is the only REV-UP county to have experienced consistently positive population growth during the past 40 years.
- The other counties have seen more sporadic spurts of growth, especially in the 1970s and 1980s when energy prices added more volatility to local Texas economies.
- Bell County's growth fluctuations have often coincided with U.S. military deployments, including Vietnam (early 1970s), Iraq (early 1990s), and Afghanistan and Iraq (since 9/11).

Annual historical population growth rates for the REV-UP counties



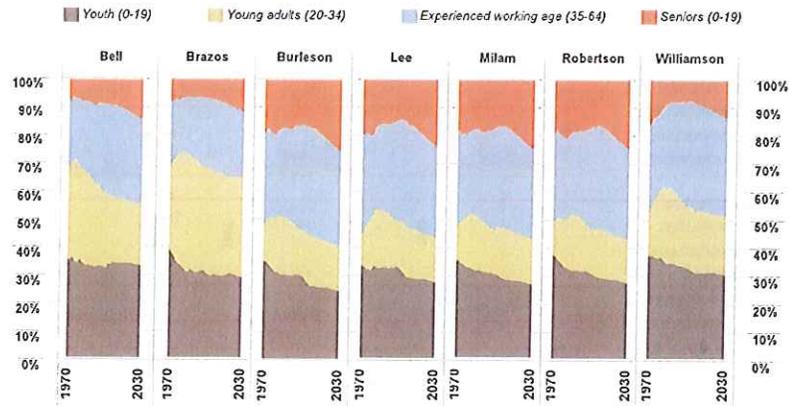
SOURCES: U.S. Census Bureau via Moody's Analytics

DEMOGRAPHICS

Figure 2.5

- Changes in county populations across age cohorts follow roughly similar patterns to the U.S. overall.
- Two notable exceptions, however, can be picked out. First, Brazos County's college-town orientation gives it a particularly large segment of 20-34 year-olds. Second, suburban growth in Williamson has kept the relative expansion of the senior population curtailed. Williamson is the only one of the seven counties that will have a smaller share of seniors in 2030 than it did in 1970.

Population distribution by age in the REV-UP counties



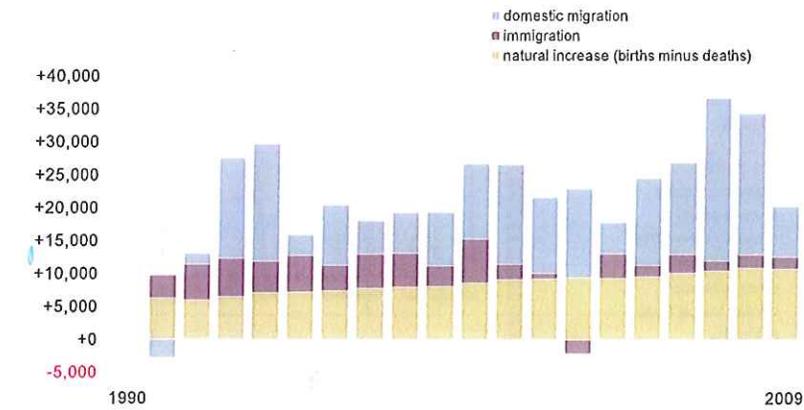
SOURCES: U.S. Census Bureau via Moody's Analytics

MIGRATION & MOBILITY

Figure 2.6

- The natural increase (births minus deaths) in the REV-UP region's population has risen steadily for the past two decades from 6,000 to 11,000 annually.
- Domestic migration has been an important, though volatile, component of the seven-county region's growth.
- The region as a whole picked up 25,000 new residents from domestic migration in 2007 as the economy peaked. Two years later in 2009, domestic in-migration had been squeezed below 8,000.

REV-UP region's components of population growth



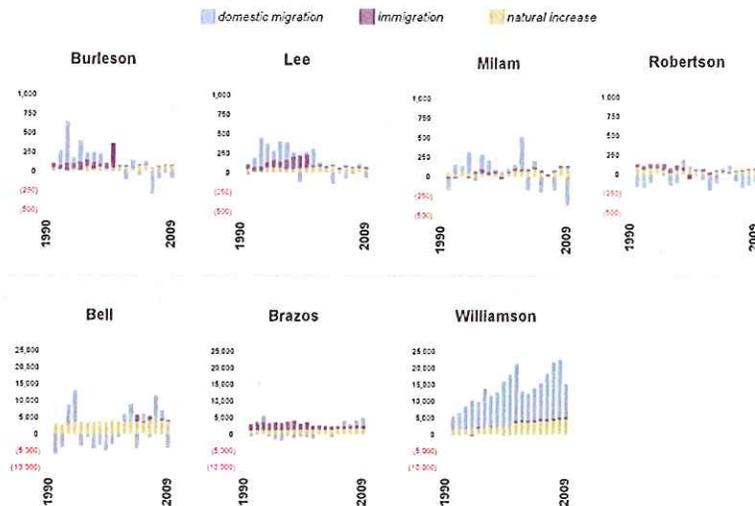
SOURCES: U.S. Bureau of the Census; Moody's Analytics

MIGRATION & MOBILITY

Figure 2.7

- Components of population growth differ dramatically across the seven counties, with the four more rural counties experiencing little net change relative to the much larger urban counties.
- In the three more urban counties, migration has played an important role, especially domestic migration into Williamson and foreign migration into Brazos. The presence of Fort Hood creates more volatile migration patterns in Bell County than the other metro counties.

Components of population growth in the individual REV-UP counties



SOURCES: U.S. Bureau of the Census; Moody's Analytics

NOTE: Different scales are used in the charts for the nonurban counties (Burleson, Lee, Milam, and Robertson) than for the urban counties (Bell, Brazos, and Williamson) to facilitate viewing of the various components of growth.

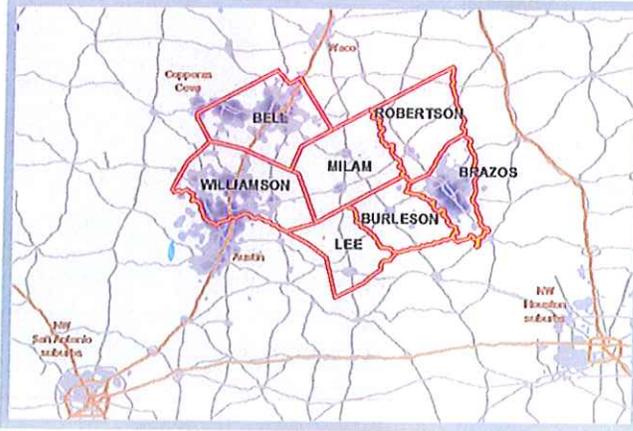
MIGRATION & MOBILITY

Figure 2.8

- The job base in the 7-county REV-UP region relies mostly on a workforce from within the region itself.
- Commuting patterns, however, show that the region pulls in outside workers from adjacent areas like Austin, Copperas Cove, and Waco as well as a few workers from as far away as the northwest suburbs of Houston and San Antonio.
- Milam County is uniquely located at the center of the region's three urban counties.

**REV-UP labor shed**

Where workers live who are employed in the 7 REV-UP counties



SOURCES: U.S. Bureau of the Census, Local Employment Dynamics (LED) database, 2008

MIGRATION & MOBILITY

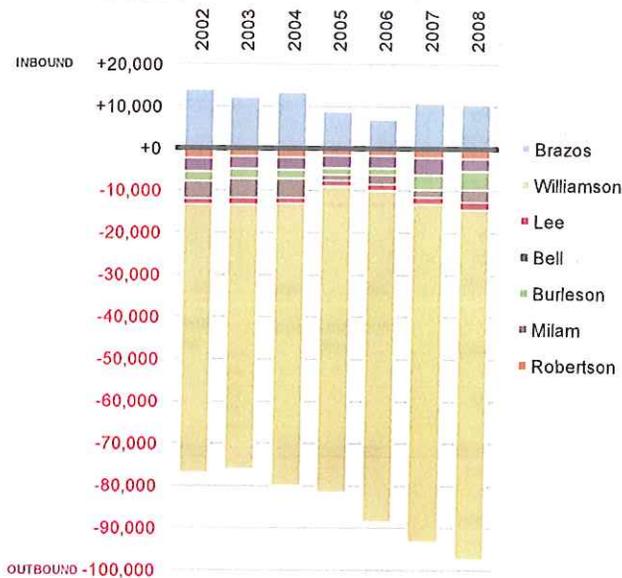
Figure 2.9

- Among the seven REV-UP counties, only Brazos pulls in more inbound commuters than outbound. This net gain of commuters is to be expected given Brazos's role as the core county of the Bryan-College Station metropolitan area.
- The remaining six counties are home to more employed residents than jobs. In other words, these counties produce a net outbound commuter flow. This is especially true in Williamson, where a large share of jobholding residents commute into Austin (Travis County).
- Despite the fact that Bell is the core county of the Killeen-Temple-Fort Hood metro area, the county still experiences a small net outflow of commuters. This is likely the result of its location in the I-35 corridor, which makes it relatively easy for Bell County residents to commute to jobs in Austin or Waco.

**Net daily commuter flow to (from) REV-UP counties**

REV-UP has more employed residents than jobs

Total net commuter inflow (outflow)



SOURCES: U.S. Bureau of the Census, Local Employment Dynamics (LED) database, 2002-2008

MIGRATION & MOBILITY

Figure 2.10

- Job-holding residents within the seven-county REV-UP region experience some degree of cross-county commuting within the region.
- Among the seven counties, the commuting flow is strongest between Williamson and Bell counties.

Commuting patterns *among* the REV-UP counties, 2008

An inter-connected region and workforce

= number living and working in the same county

		Commuting to...						
		Bell	Brazos	Williamson	Milam	Lee	Robertson	Burleson
Commuting from...	Bell	59,740	1,153	3,355	333	<84	60	<36
	Brazos	787	51,416	<583	114	89	425	396
	Williamson	3,689	<1153	45,204	400	84	<45	<36
	Milam	827	347	571	3,735	103	141	79
	Lee	<159	244	247	159	2,203	<45	58
	Robertson	92	1,584	<80	83	<80	1,241	40
	Burleson	<105	2,038	<105	109	97	50	1,205

NOTE: Some commuting data have been suppressed. Where this has occurred, a "<" sign indicates the suppression cut-off and thus the maximum possible number of commuters.

SOURCES: U.S. Bureau of the Census, Local Employment Dynamics (LED) database, 2008

MIGRATION & MOBILITY

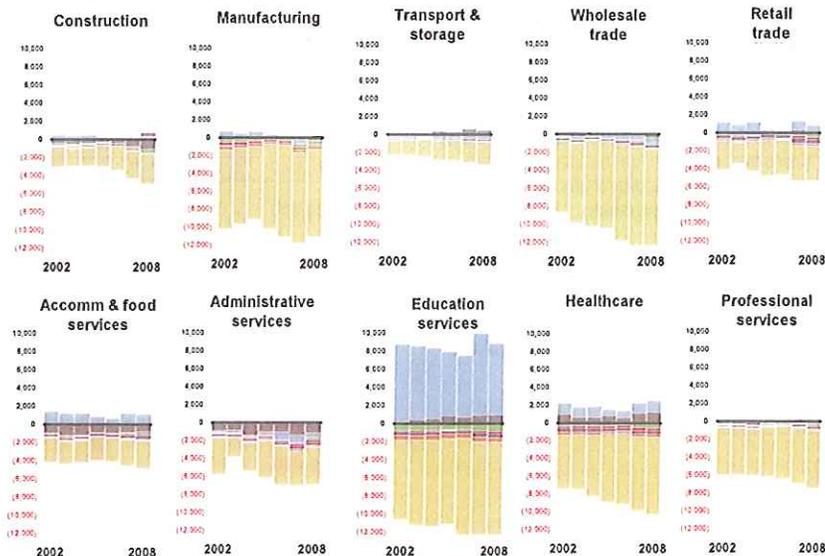
Figure 2.11

- Net commuter flows in the REV-UP counties tend to be outbound in most economic sectors with a few notable exceptions. Brazos County (Texas A&M) pulls in a large surplus of workers in the educational sector, as well as smaller surpluses in a few other sectors. Bell County (Scott & White) pulls in its strongest surplus of workers in the healthcare sector.
- Suburban Williamson County, as well as many of the nonurban counties, tend to produce a net outbound commuter flow. Milam County's net outbound flow has been observable over the past several years in most sectors, except for manufacturing where inbound and outbound traffic has tended to be on par.

REV-UP region's net commuter flow by economic sector

Industries that pull employed REV-UP residents across county borders

Total net commuter inflow (outflow)



SOURCES: U.S. Bureau of the Census, Local Employment Dynamics (LED) database, 2002-2008

MIGRATION & MOBILITY

Figure 2.12

- An analysis of IRS exemptions in 2008 shows county-to-county moves over the course of the year among the region's seven counties.
- Again, Bell and Williamson show the strongest ties. Williamson County is the net gainer in this exchange, picking up slightly more than 250 movers over Bell County.
- Other notable patterns include cross-movements between Brazos and the neighboring counties of Robertson and Burleson which are also components of the Bryan-College Station metropolitan area.

**Migration patterns among the REV-UP counties, 2008**  
*An inter-connected region and workforce*

■ = number of residents who did not relocate across the county's boundaries during 2008

		Moving to...						
		Williamson	Bell	Brazos	Milam	Burleson	Lee	Robertson
Moving from...	Williamson	275,423	669	149	184	18	63	<15
	Bell	932	205,436	158	166	<15	<15	<15
	Brazos	208	157	99,336	59	254	32	289
	Milam	211	179	69	17,785	27	25	<15
	Burleson	<15	<15	334	40	12,189	36	<15
	Lee	58	<15	39	28	24	11,025	<15
	Robertson	<15	<15	362	59	<15	<15	11,507

NOTE: Figures reflect year-over-year address changes on federal tax returns. Exemptions are used as a proxy for residents. Some IRS mover data have been suppressed. For the IRS, the typical suppression level is (roughly) 15 exemptions.  
 SOURCES: Internal Revenue Service County-to-County Migration Data.

ECONOMIC ASSESSMENT

ECONOMY & WORKFORCE

Figure 2.13

- Standard parallels among county economic structures include local government services, retail trade, food services, & accommodations. These sectors are to be expected as economic drivers in most counties. Other differences, however, begin to suggest cooperative opportunities between the urban and nonurban counties.
- All four nonurban counties count agriculture as the top job sector.
- Healthcare ranks third for two of the three urban counties (Bell & Brazos), while the third (Williamson) is positioned for a sharp rise in employment in this sector, due to recent developments in the county.

**Economic summary**

*Economic fundamentals in the 7-county region*

	Bell	Brazos	Burleson	Lee	Milam	Robertson	Williamson
Total Jobs, 2009	191,059	108,558	7,645	9,472	11,049	7,230	161,455
Job density Jobs per 100 residents	67	59	46	58	45	46	19
Net Job change expected in 2010	+359	+1,576	+241	+231	+326	+189	+2,038
Unemployment rate June 2010 prelim., NSA	7.8%	6.7%	7.3%	7.5%	10.8%	9.0%	7.5%
Top 5 Job sectors:	1 Military	State gov't (incl. A&M)	Ag	Ag	Ag	Ag	Retail
	2 Local gov't	Retail	Local gov't	Construction	Local gov't	Local gov't	Local gov't
	3 Healthcare	Healthcare	Retail	Retail	Construction	Retail	Wholesale
	4 Retail	Hotels, bars, & restaurants	Oil & gas	Local gov't	Retail	Construction	Hotels, bars, & restaurants
	5 Hotels, bars, & restaurants	Local gov't	Construction	Oil & gas	Healthcare	Hotels, bars, & restaurants	Construction

SOURCES: EMSI Complete Employment - 2nd Quarter 2010, U.S. Bureau of Labor Statistics

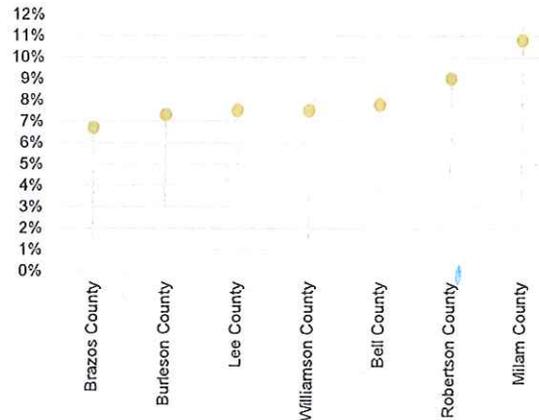
ECONOMIC ASSESSMENT

ECONOMY & WORKFORCE

Average annual unemployment rate, 1990-2010 (%)  
Latest 2010 unemployment rate relative to the historical 20-year range

Figure 2.14

- Current unemployment rates vary across the REV-UP counties, with June 2010 rates ranging from a low of 6.7 percent in Brazos up to 10.8 percent in Milam.
- All seven counties are currently at or near their historic highs.
- Milam County's historic range is the widest of the seven, and its unemployment rate is the region's highest as of mid-2010.



NOTE: County level unemployment rates are not seasonally adjusted  
SOURCES: U.S. Bureau of Labor Statistics, LAUS program

ECONOMY & WORKFORCE

The unemployment rolls

Number of unemployed workers in each county, midyear 2010 vs 2009  
Monthly numbers are LAUS survey-based and not seasonally adjusted

Figure 2.15

- As of June 2010, the REV-UP region was home to 36,000 residents who were unemployed. While more than 32,000 were in the three urban counties, the nonurban counties were also home to more than 3,000 unemployed workers, including 1,200 in Milam alone.
- Both Williamson and Milam made some progress in reducing their unemployment rolls during the 12 months ending in June, but at least three counties (Bell, Brazos, and Robertson) added more to the unemployment rolls during this same period, more than offsetting the progress of the other counties.

County	June 2009	June 2010	Change	Worse/Better
Williamson	16,593	16,093	-500	Better
Milam	1,218	1,200	-18	Better
Lee	705	728	+23	Worse
Burleson	611	623	+12	Worse
Robertson	672	612	-60	Better
Brazos	6,586	6,112	-474	Better
Bell	10,227	9,262	-965	Better
<b>REV-UP Total</b>	<b>36,112</b>	<b>35,319</b>	<b>-793</b>	<b>Better</b>

Number of unemployed workers in each county, midyear 2009 vs 2008

County	June 2008	June 2009	Change	Worse/Better
Williamson	16,693	16,593	-100	Better
Milam	1,218	1,379	+161	Worse
Lee	728	705	-23	Better
Burleson	623	611	-12	Better
Robertson	612	672	+60	Worse
Brazos	6,112	6,586	+474	Worse
Bell	9,262	10,227	+965	Worse
<b>REV-UP Total</b>	<b>35,319</b>	<b>36,112</b>	<b>+793</b>	<b>Worse</b>

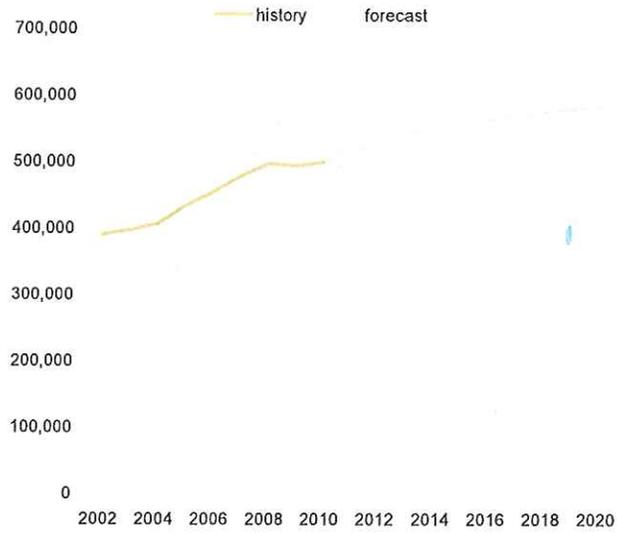
SOURCES: U.S. Bureau of Labor Statistics, LAUS program

ECONOMY & WORKFORCE

Figure 2.16

- Job gains in the REV-UP region have stalled during the recent recession, but are forecast to resume growth over the next decade.
- Most U.S. jobs forecasts, as well as the one for the seven-county REV-UP region, predict anemic growth compared to past performance. In the six years (2002-2008) leading up to the current recession, the REV-UP region added more than 100,000 jobs. Over the next ten years, the region's job gains are expected to fall short of that 100,000-job threshold.

**Total employment in the REV-UP region**  
Another 100,000 jobs in the next 10 years?



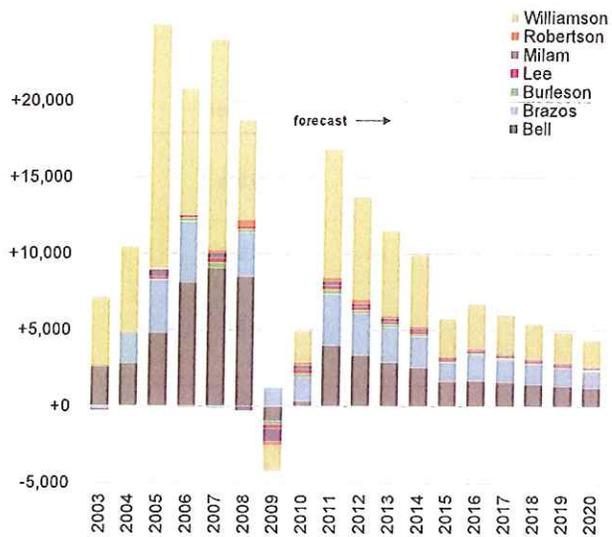
SOURCE: EMSI Complete Employment - 2nd Quarter 2010

ECONOMY & WORKFORCE

Figure 2.17

- A close look at the REV-UP region's county-by-county job growth patterns shows the recession hit Milam County first in 2008 and then swept through the other counties in 2009. Only Brazos County was able to eke out job gains in 2009.
- After a mild, initial post-recession bounce in job growth, annual employment gains are expected to taper off over the coming years.

**Net annual change in employment in the REV-UP region**  
History and forecast



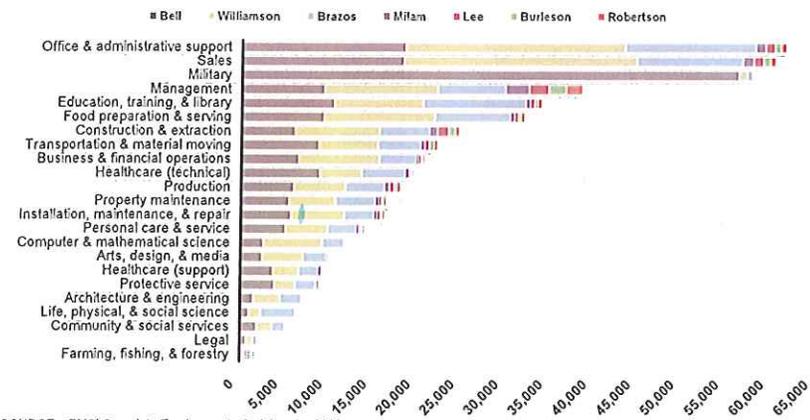
SOURCE: EMSI Complete Employment - 2nd Quarter 2010

ECONOMY & WORKFORCE

Figure 2.18

- An analysis of jobs in the REV-UP region by occupational group shows the four rural counties are especially lacking in some types of occupations.
- Fort Hood's presence in Bell County, pushes military employment extraordinarily high in the region.
- Note about the data: Self-employed farmers & ranchers are classified under management occupations rather than farming, thus the apparent discrepancies in the sizes of these two groups.

Total jobs by occupational group, 2010



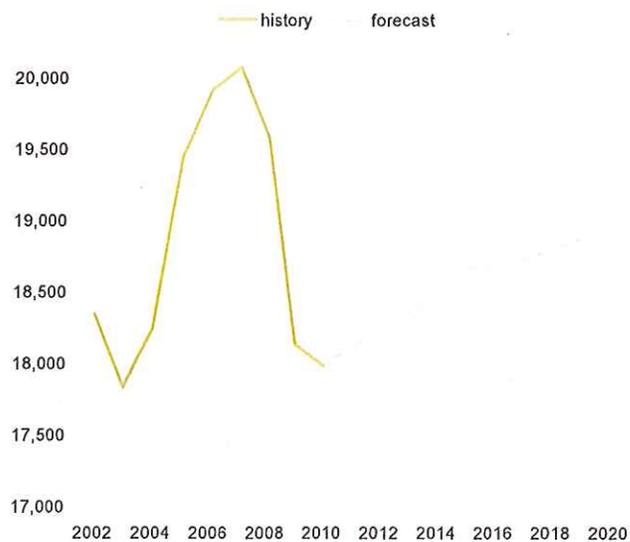
ECONOMIC ASSESSMENT

ECONOMY & WORKFORCE

Figure 2.19

- A closer look at production occupations in the seven-county region shows sharp gains from 2003 to 2007, with nearly all of those gains wiped out since the 2007 peak.
- EMSI's forecast shows only about half of the region's recent losses in production employment being recovered over the next ten years.

Production occupations in the REV-UP region



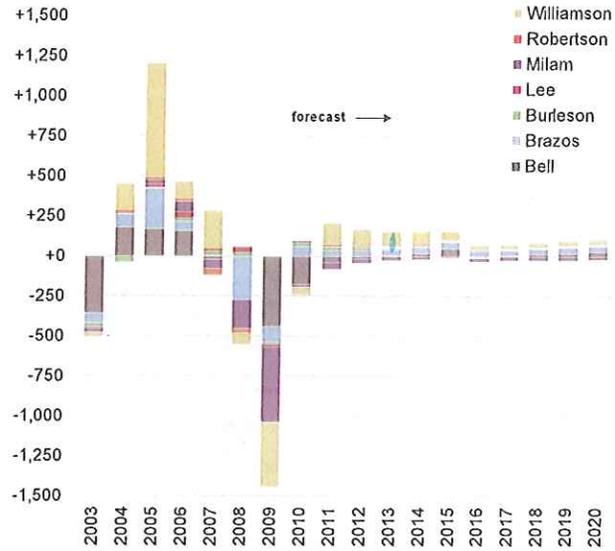
ECONOMIC ASSESSMENT

ECONOMY & WORKFORCE

Figure 2.20

- The impact that the loss of Alcoa had on the region's production jobs can be seen in this multi-year chart.
- Despite its relatively small size, Milam County led the seven-county region in production job losses in 2007 and again in 2009. In 2008, it was second only to Brazos County in production job losses.
- Many of the production occupations that have been lost in this recession will not be returning in the next ten years under EMSI's forecast.

Net change in production occupations by county  
History and forecast



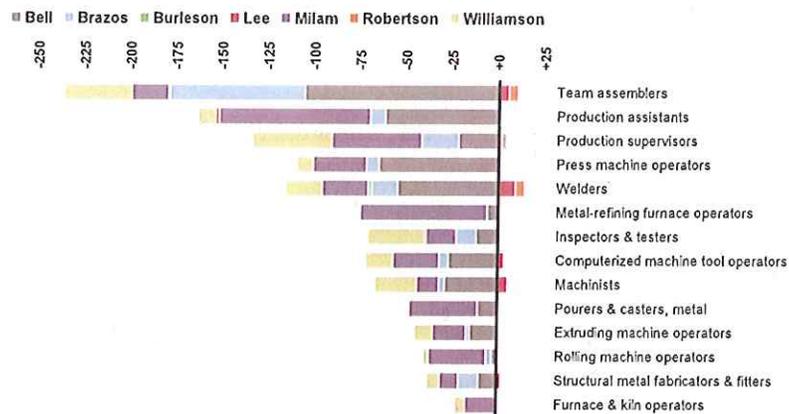
SOURCE: EMSI Complete Employment - 2nd Quarter 2010

ECONOMY & WORKFORCE

Figure 2.21

- In selected production occupations associated directly or indirectly with Alcoa, Milam County's job losses were notable within the seven-county region.
- Over the course of the three-year period examined, the selected production occupations shown here experienced very few gains within the region.

REV-UP net job change for selected production occupations, 2007-2010

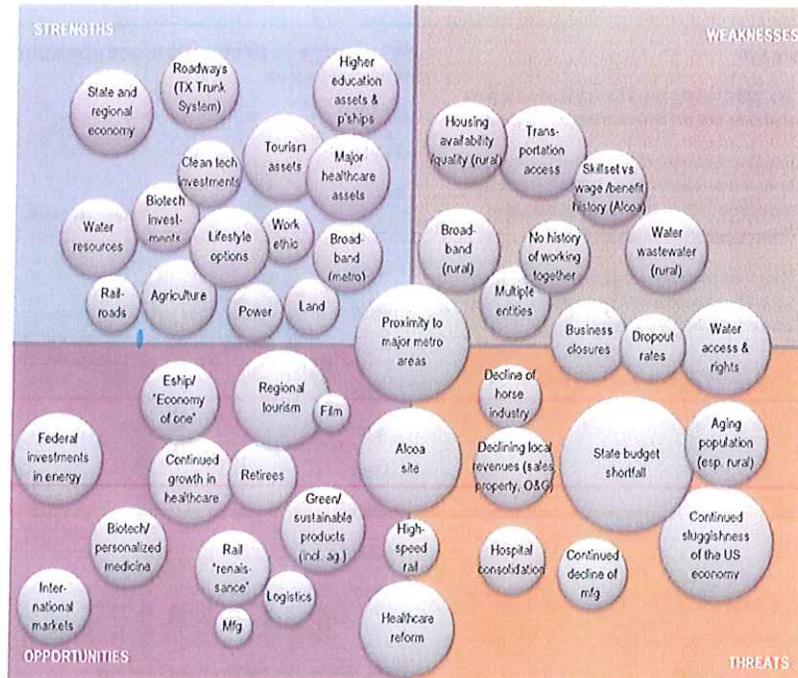


SOURCE: EMSI Complete Employment - 2nd Quarter 2010

## SWOT ANALYSIS DIAGRAM

Figure 2.22

- The graphic illustrates the results of the analysis of strengths, weaknesses, opportunities, and threats (SWOT) conducted as part of the assessment.
- The size of the bubble is intended to convey the consulting team's view of the relative importance of the topic, and in some cases, the likelihood of impact in the region.
- Items closer to the center of the graph tend to be more local in nature. Those at the outer corners are influenced by state, national, or global trends, placing them to some degree outside of local or regional control.



## 3: Major Sectors &amp; Assets

The economic assessment, as well as input received from the Advisory Committees and our understanding of current trends, point to a number of regional strengths and opportunities. In this section we explore several of these areas in more detail. The purpose of the discussion is to connect the dots between regional assets and regional or national demand. For each sector, we have provided examples of the assets identified during the planning process and related best practices. Additional assets were compiled using an interactive mapping program called Mindmeister. The on-line map was opened to the community and will remain available to the REV-UP Council upon completion of the project.

## Healthcare

The impressive expansion of the nation's healthcare sector has proven resistant to economic downturns. Over the last two business cycles, healthcare employment has grown by more than 30 percent, while total (nonfarm) employment has increased by just 3 percent. Optimistic growth prospects for the sector are well supported by demographic trends. While healthcare may not be seen as a traditional target for economic development, the sector offers many of the benefits of a "primary industry": it often draws in outside dollars, it has linkages across a wide supply chain, and it offers a number of opportunities for high-wage, skilled jobs. In addition, access to healthcare has become an essential element of a region's infrastructure. For these reasons, targeting healthcare can be an effective way to strengthen and expand a regional economy.

**ASSETS** | The REV-UP region has a number of assets related to healthcare. In addition to an impressive number of large healthcare systems operating in the three metropolitan areas, Richards Memorial Hospital (part of the Little River Healthcare System) is centrally located in Milam County. In Bell County, Darnall Army Medical Center serves active duty personnel and retired veterans.

The region's network of healthcare providers supports its growing cluster of medical education institutions. Established in 1999, the Texas A&M Health Science Center (HSC) has six components in various locations in Texas – Baylor College of Dentistry (Dallas), the College of Medicine (Temple), the College of Nursing (Bryan), the Rangel College of Pharmacy (Kingsville), the School of Rural Public Health (College Station), and the School of Graduate Studies (housed in College Station, with offerings at other locations). Along with these major components, the HSC features numerous centers and institutes, including the Institute of Biosciences and Technology, located in Houston. The Round Rock Higher Education Center features a growing cluster of medical education providers, including Texas State University's School of Nursing.

Figure 3.1  
HEALTHCARE

The presence of HSC, and Texas A&M University as a whole, directs a portion of the state's federal research dollars for healthcare to the region. As illustrated in Figure 3.2, the largest category of health-related federal research expenditures distributed to the REV-UP region in 2009 was oral diseases and disorders, with nearly one in five research dollars in this field going to Brazos County. In dollar terms, Brazos County received its largest federal expenditures (nearly \$17 million) for allergy, immunology, and transplant research during the same period.

One outgrowth of these assets is a concentration of healthcare occupations. As shown in Figure A.1 in the appendix of this report, registered nurses are the largest occupation in terms of employment, with more than 5,000 RNs employed in the seven counties. More than half of these are located in Bell County, reflecting the county's many large medical facilities. Psychiatric technicians top the list in terms of concentration of healthcare-related employment.

Figure 3.3 provides an overview of selected healthcare indicators for the REV-UP region. With the exception of EMS coverage ratios (which are largely parallel across the seven counties), most other healthcare-related metrics split distinctly between rural and urban. Despite being relatively older than average, the more rural counties lack comparable access to local physicians, hospitals, and even pharmacists. The healthcare coverage differences extend to obstetrics as well, even after adjusting for lower demand rates in the older, more rural counties.

Figure 3.2: Selected health-related federal research expenditures in Texas, FY 2009  
Federal dollars distributed to Texas, including share distributed within the REV-UP region

	TEXAS	BELL	BRAZ	BURL	LEE	MILAM	ROBT	WILL
Cancer-related research (various programs)	\$421,933,228	<1%	2%	—	—	—	—	—
Allergy, immunology, & transplant research	\$268,420,022	—	6%	—	—	—	—	—
Heart & vascular disease research	\$202,337,308	<1%	6%	—	—	—	—	—
Pharmacology & biochemistry research	\$200,685,866	—	7%	—	—	—	—	—
Diabetes & metabolism research	\$149,655,507	<1%	3%	—	—	—	—	—
Neuroscience & neurological disorders research	\$122,070,791	—	5%	—	—	—	—	—
Research Infrastructure	\$108,975,966	—	3%	—	—	—	—	—
Maternal & child-related research	\$104,380,626	—	4%	—	—	—	<1%	—
Alcohol & drug abuse research (various programs)	\$93,356,605	—	5%	—	—	—	—	—
Aging research	\$73,824,064	—	3%	—	—	—	—	—
Mental health research	\$66,860,461	—	4%	—	—	—	—	—
Human genome research	\$63,116,366	—	1%	—	—	—	—	—
Vision research	\$55,499,489	3%	2%	—	—	—	—	—
Arthritis & skin disease research	\$44,881,547	—	2%	—	—	—	—	—
Oral diseases & disorders research	\$39,818,624	—	13%	—	—	—	—	—
Deafness & communicative disorders research	\$20,498,192	—	4%	—	—	—	—	—
Rural healthcare grants (various programs)	\$3,473,445	—	—	—	—	—	—	—

SOURCES: US Bureau of the Census, Consolidated Federal Funds Report

**BEST PRACTICE |** Many Initiatives focused on strengthening rural healthcare are designed to increase access to healthcare professionals. Strategies in this vein include incentives for doctors to establish a practice in a rural location, creating rural transportation networks, and using technology to connect doctors with rural patients (telemedicine). Given the REV-UP plan's focus on building economic activity around particular sectors, we looked at strategies for increasing healthcare-related investments and employment opportunities.

From 1999 to 2006, the Robert Wood Johnson Foundation (RWJF) funded a series of initiatives aimed at increasing access to healthcare in rural areas in eight southern states, including parts of East Texas. This multi-faceted program, called the Southern Rural Access Program, was designed to 1) increase the supply of healthcare professionals dedicated to practicing in rural areas, 2) create collaborative networks of healthcare providers, and 3) establish revolving loan funds (RLFs) to help rural health providers finance improvements in their practices. Several of the RLFs created as a result of the program — including the East Texas fund created as part of the East Texas Rural Access Program or ETRAP — had difficulty maintaining fund levels after the RWJF monies ran out. However, in its 2007 evaluation of the program, RWJF noted that the roughly \$7 million it had invested in the creation of seven RLFs had made or facilitated 100 loans to help finance projects costing a total of \$131 million, an 18:1 leveraging ratio. The RWJF results suggest that these types of dedicated loan funds can provide an effective mechanism for encouraging healthcare-related investments in rural areas.

Another approach to increasing employment that could be a fit for the REV-UP region is "rural sourcing." The term ties into the notion of "outsourcing" that has become a popular practice for employers, that is, defining discreet products or services that can be contracted out to other firms to perform more cost-effectively. The concept of rural sourcing holds that small towns can provide a cost-effective alternative for US companies looking to cut costs compared with

Figure 3.3: Healthcare summary

Healthcare fundamentals in the 7-county region as of mid-year 2009

	Bell	Brazos	Burleson	Lee	Milam	Robertson	Williamson
Acute care hospitals	4	4	1	0	2	0	5
Acute care licensed beds per 10,000 residents	38	27	14	0	27	0	16
Direct care physicians	539	376	4	4	14	3	514
Direct care physicians per 10,000 residents	19	22	2	2	5	2	14
Pharmacists	252	116	4	11	11	6	346
Pharmacists per 10,000 residents	9	7	2	6	4	4	9
Annual births to county residents	6,194	2,780	232	215	367	228	6,335
Hospital beds staffed for obstetrics care	99	56	0	0	0	0	89
Ratio of resident newborns per obstetric bed	63	50	0	0	0	0	79

SOURCES: Texas Department of State Health Services

moving portions of their operations overseas. The following quote from a review of the efficacy of outsourcing of information technology functions to rural areas points to other advantages for companies choosing this option:

*Cultural compatibility, similar time zones, and relatively close proximity to clients make rural outsourcing an attractive option for clients. When transaction costs are considered, the total costs of rural outsourcing are competitive with the total costs of offshore outsourcing.*

SOURCE: "Field of dreams: building IT capabilities in rural America," *Strategic Outsourcing: An International Journal*, Vol. 3 No. 3, 2010, p. 170

The outsourcing of IT functions to rural areas can be part of a rural healthcare strategy, as illustrated by Rural Sourcing, Inc. (RSI). From locations such as Jonesboro, Arkansas, RSI provides IT services for a number of healthcare clients, including major corporations like BlueCross BlueShield and GlaxoSmithKline, as well as companies like The Rawlings Group (a healthcare subrogation provider), Clarus Information (a software provider serving the life sciences industry), and emerging pharmaceutical company Human Genome Sciences.

**Tourism**

Tourism is not traditionally viewed as a target for economic development or workforce development activity. However, it can provide an excellent starting point for regional collaboration. In addition, a successful tourism strategy can bring in outside dollars and help introduce the region to potential residents. The REV-UP region is well-positioned to pursue a regional tourism strategy, particularly in light of its proximity to the state's major metropolitan areas.

Figures compiled for the Governor's Office of Economic Development and Tourism (Figure 3.5) estimate that tourism spending contributes a combined total of more than \$21 million to the local tax base of the REV-UP region's seven counties. The majority of this gain is seen in the three metropolitan counties. Extending this impact into the four non-metropolitan counties should be the focus of this strategy.

**ASSETS** | The seven counties offer a broad range of tourism assets and organizations, a few of which are illustrated in Figure 3.4. The region's lakes and streams provide options for outdoor recreation, including boating, fishing, and wildlife watching. Recreational trails are abundant, creating a haven for walkers, cyclists, and horseback riders. Some counties also offer leases to hunt dove, wild hogs, and whitetail deer.

Figure 3.4

**TOURISM**

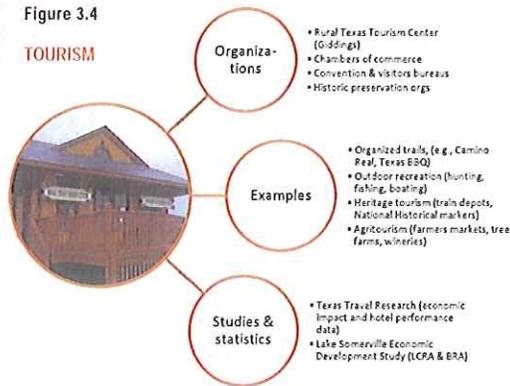


Photo courtesy of the Rural Texas Tourism Center

Figure 3.5: Tourism impacts

Economic impacts of tourism in the REV-UP counties, 2009

	Bell	Brazos	Burleson	Lee	Milam	Robertson	Williamson
<b>Total Direct Spending (\$000)</b>	\$375,600	\$350,840	\$11,970	\$18,780	\$25,790	\$20,420	\$284,350
<b>Visitor Spending (\$000)</b>	\$365,030	\$325,620	\$11,970	\$18,640	\$25,790	\$20,420	\$284,350
<b>Earnings (\$000)</b>	\$93,660	\$78,390	\$3,060	\$4,450	\$6,760	\$3,940	\$59,240
<b>Employment (jobs)</b>	4,600	3,310	150	200	340	250	3,750
<b>Tax Receipts:</b>							
<b>Local (\$000)</b>	\$6,940	\$5,970	\$130	\$160	\$340	\$490	\$7,430
<b>State (\$000)</b>	\$23,320	\$20,870	\$610	\$1,290	\$1,760	\$1,220	\$24,000

SOURCE: Dean Runyan Associates, The Economic Impact of Travel on Texas, June 2010  
Industries used in this analysis conform to the definition established by the US Bureau of Economic

Numerous farmers markets link the produce of the rural counties with the shoppers of the metropolitan areas. Wineries and culinary related attractions are present in and around the region. The more urban counties offer shopping districts, cultural attractions, and dining and lodging options. For example, Brazos County is home to the George Bush Presidential Library and Museum, as well as the Texas World Speedway; Williamson County has a growing number of retail centers, including IKEA and the Round Rock Outlet mall; Bell County has an active convention center that draws a broad spectrum of entertainers and events.

The region also has a number of heritage tourism assets. Like many Texas counties, most of the REV-UP counties feature historic courthouses. The city of Calvert, located in Robertson County, is just one example of small towns in the area with unique architectural assets, including a number of large Victorian mansions. The region is dotted with historic train depots, some of which have been restored. Historic trails cross the REV-UP counties, including the Chisholm Trail (which cuts through Bell County) and El Camino Real de los Tejas National Historic Trail (which crosses through the heart of the region). While a number of the Camino Real markers reside on private properties, the presence of the trails could help raise awareness of the area and draw visitors through the region. Coordinating the efforts of the region's historic preservation and heritage tourism groups (which include the Round Rock Historic Preservation Commission, Milam County Historical Commission, and Taylor Conservation and Heritage Society) could support growth in this market.

Straddling parts of Lee, Burleson, and Washington Counties, Lake Somerville is a popular destination for residents in the surrounding metropolitan areas. In addition to water activities and camping, a highlight of the lake and associated state park is a 13-mile trail that connects the Nails Creek and Birch Creek Units of the park. Covering 5,000 acres, the trail offers hiking, biking and horseback riding options. A number of upgrades to the park (including new restrooms, boat ramp work, camp site improvements and shoreline erosion control) are in various stages of completion. The improvements are funded using a total of approximately \$14 million awarded to the US Army Corps of Engineers (which operates the reservoir) and Texas Parks and Wildlife under ARRA. Promoting these improvements and continuing to look for strategies to enhance Lake Somerville's offerings could increase the impact of this key asset.

Lee County is home to the Rural Texas Tourism Center (RTTC). Housed in one of Giddings' historic train depots, the RTTC offers rural communities a mechanism for advertising their tourism assets, both at the RTTC Visitors' Center and via the organization's website. The ability to market attractions via the Internet is critically important for rural tourism strategies. In the past, reaching niche markets, such as train depot enthusiasts, would have required a concerted marketing effort aimed at very specific publications and marketing channels. With a well-designed website, these and other small market segments can be reached with much smaller investment of resources. As a result, identifying opportunities to promote the region online should be the focus of the REV-UP Council's tourism related activities.

**BEST PRACTICE** | In 1993, a handful of residents of Western North Carolina organized a program to support the region's craft artists as part of an effort to promote more sustainable economic development. The program, called Handmade in America, uses a centralized registry to promote the work of artists spread across a 22-county region of the Blue Ridge Mountains, connecting them with new markets.

One important aspect of the program is the promotion of tourism in the region. Handmade in America has created award winning guidebooks as part of this effort. With more than 500 listings, *The Craft Heritage Trails of Western North Carolina* leads visitors on a driving tour of the region. *The Architectural Element Sourcebook* and *Handcrafted Home Furnishings & Design Elements Sourcebook* provide a directory of artists who make custom handcrafted home furnishings and architectural accents. The organization has also partnered with various convention and visitors bureaus across the region to provide information to visitors on galleries and art studios open to the public. Finally, an online Trip Planner assists visitors in mapping out an itinerary.

HandMade in America is a nationally recognized model for rural community and economic development that uses both small business development and tourism promotion as central themes to building sustainable rural communities. The organization has been instrumental in building a very popular cultural heritage trail in Western North Carolina. Additional information is available at <http://www.handmadeinamerica.org/>.

Figure 3.6 HandMade in America Trip Planner



**Entrepreneurship**

Fostering entrepreneurship can provide an alternative approach to job creation, often at a lower cost per job. Like tourism, the REV-UP Council's role in supporting entrepreneurship in the region should focus on helping to link regional assets and raise awareness of available services.

**ASSETS** | Regional assets related to entrepreneurship include a network of small business development centers (SBDCs). Located in Bryan, the Brazos Valley SBDC is part of the University of Houston network and serves Brazos, Burleson, Robertson, and Milam Counties. Williamson and Lee Counties are served through Texas State University. Part of the South-West Texas Border SBDC network, Texas State has three locations, including one at the Round Rock Higher Education Center. Bell County residents are served by the McLennan Community College SBDC. SCORE, a national nonprofit dedicated to educating entrepreneurs and small businesses, also has chapters in the region.

In addition to the business counseling services provided by SBDCs and SCORE, entrepreneurs in the REV-UP region have access to two physical incubators: the Temple Business Incubator (part of the McLennan Community College SBDC system) and the Research Valley Innovation Center (a science and technology incubator which is a collaboration between the Research Valley Partnership and Texas A&M). There are also a number of incubators in the surrounding metropolitan areas, including several in Austin and Houston.

The region is also home to several groups that provide networking and other assistance to entrepreneurs, including:

- The Wilco Entrepreneurs Community helps connect entrepreneurs with resources to grow their businesses in Williamson County. In addition to an active Google group (the Wilco Entrepreneurs Network), Wilco offers educational events and job fairs to facilitate access to technical assistance and needed talent.
- The TEEX Product Development Center, located at Texas A&M provides a range of services to assist inventors, researchers, and entrepreneurs at all stages of product development from planning to prototyping to manufacturing.

Figure 3.7

**ENTREPRENEURSHIP**



- Also at Texas A&M, the Mays Business School's Center for New Ventures & Entrepreneurship (CNVE) provides hands-on opportunities for students through business competitions such as the MBA Tech Transfer Challenge and campus-wide Idea Challenge. Students gain access to successful business owners through programs like Aggies in Business and Start-up 101.
- Part of the Texas AgriLife Extension, the Texas Center for Rural Entrepreneurship (TCRE) offers training and other resources for communities and individuals.
- The Austin area is also home to a wide range of resources, many of which are documented in the Austin Entrepreneurship Scene, a MindMeister map available at: <http://www.mindmeister.com/24358308/austin-entrepreneurship-scene>.

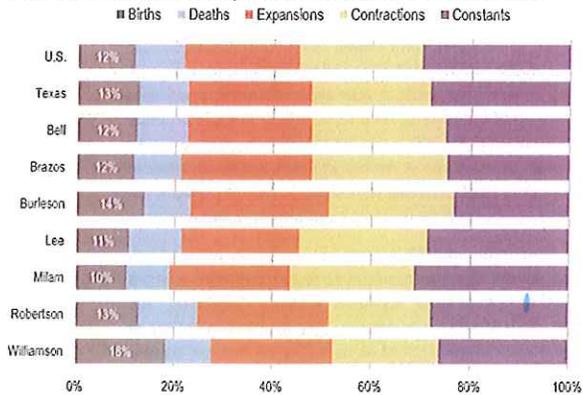
Entrepreneurial activity can be measured broadly by business concepts such as initial public offerings (IPOs) or trends in commercial lending activity. This approach works well for state-level analyses or in large urbanized areas where data are more readily available. For smaller geographies or in sparsely populated areas measuring entrepreneurship becomes more difficult.

One indicator of entrepreneurial potential is the rate at which new establishments are created. The U.S. Census Bureau provides data on changes in employment through its Statistics of U.S. Businesses (SUSB) program. The data cover all U.S. business establishments with paid employees except for those employed in a handful of industries (crop and animal production, rail

TIP Strategies, Inc.

Figure 3.8: Entrepreneurship indicator

Establishment births, deaths, expansions, contractions, &amp; constants, 2006-07



SOURCE: U.S. Census Bureau, 1999-2007 Business Information Tracking Series

## Glossary of terms

An establishment is a single physical location where business transactions take place and for which payroll and employment records are kept.

**Births** are establishments that have zero employment in the first quarter of the initial year and positive employment in the first quarter of the subsequent year.

**Deaths** are establishments that have positive employment in the first quarter of the initial year and zero employment in the first quarter of the subsequent year.

**Expansions** are establishments that have positive first quarter employment in both the initial and subsequent years and increase employment during the time period between the first quarter of the initial year and the first quarter of the subsequent year.

**Contractions** are establishments that have positive first quarter employment in both the initial and subsequent years and decrease employment during the time period between the first quarter of the initial year and the first quarter of the subsequent year.

Theory Into Practice

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transportation, most government employees, postal service workers, and those employed in private households). From these records, the Census Bureau uses year-over-year changes in employment to classify businesses into one of five categories, including "births." Figure 3.8 shows a snapshot of the region based on the most recent data available from this source.

**BEST PRACTICES** | Two best practices in entrepreneurship come from Kentucky. The first is the Kentucky Entrepreneurial Coaches Institute (KECI). Founded in 2003 by the College of Agriculture at the University of Kentucky, KECI was intended to promote economic diversification in Northeastern Kentucky. Since then, the program has expanded into South Central Kentucky as well.

Named one of the top programs in the nation by the Small Business Administration, KECI trains coaches through an intensive series of seminars and a national education tour. Thirty participants are selected from the pool of applicants to receive a fellowship to attend the institute. These fellowships are funded through the Kentucky Agricultural Development Board. The entrepreneurial coaches are volunteers who work with entrepreneurs. Rather than providing technical assistance, they serve as a resource for entrepreneurs, help them assess their businesses, and assist them in finding the technical support that they need. Additional information is available at: <http://www.uky.edu/Ag/CLD/KECI/>.

The second program is EntrePaducah, a non-profit organization located in the Purchase Region of Western Kentucky. The organization was established as an economic development strategy to support local entrepreneurs. Its mission is to attract, retain, and develop entrepreneurs and entrepreneurial ventures. Rather than create a comprehensive array of programs and services, EntrePaducah staffs a "Concierge." The concierge connects entrepreneurs with the people, agencies and networks needed to launch their endeavors. After assessing the entrepreneurs' needs, the concierge goes to work finding the right resources to help drive the entrepreneurs' concepts from idea to reality. Additional information is available at <http://www.entrepaducah.com/about.htm>.

Figure 3.9 EntrePaducah website

TIP Strategies, Inc.

Theory Into Practice

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## Energy

Federal investments in energy, coupled with Texas's prominence as a destination for renewable energy investment, make the sector a potential opportunity for the REV-UP region. This sector also has ties to the agriculture strategy, as crop and livestock byproducts represent a growing focus of renewable energy investment.

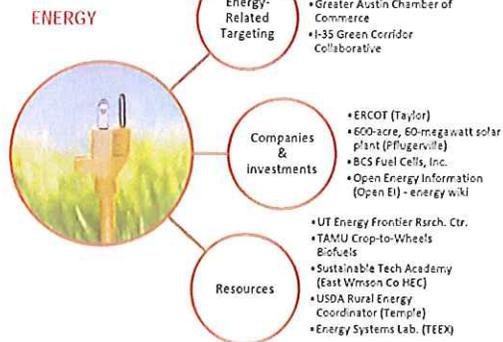
**ASSETS** | Texas has attracted significant investments in renewable energy production and the sector has been targeted by each of the major metropolitan areas surrounding the REV-UP region. Broadly speaking, the Central Texas area does not have sufficient wind speeds for utility-scale wind energy. However, the area has been the target of several solar-related projects, including the 600-acre, 60-megawatt solar facility planned for Pflugerville. Given the recruitment activities of the metropolitan areas, the continuing role of federal subsidies, and the availability of targeted incentives, additional investments seem likely.

Biomass also offers potential in the region on multiple fronts. First, the presence of substantial agricultural operations could present the potential for the growth of energy crops, such as sorghum or switchgrass, which are converted to fuel directly. In addition to dedicated energy crops, field and harvest residues could also provide a significant source of biomass. Livestock wastes, including manure from dairy operations, poultry litter and processing byproducts, can also be a source of biomass-derived fuels. Finally, the region's proximity to several major metropolitan areas could make it an attractive location for the processing of urban wastes.

The REV-UP region also has some unique assets. First, the presence of Texas A&M provides access to cutting edge research in bioenergy. In 2009, Texas A&M received 100 percent of federal funds related to biorefinery assistance and biomass research and development awarded in Texas (See Figure 3.13). The University of Texas, while not directly located in the region, provides another node of energy related research in the form of the Energy Frontier Research Center. The presence of ERCOT, the Electric Reliability Council of Texas, in Taylor (Williamson County) and Austin could make the area attractive to smart grid and other energy efficiency related projects.

From a workforce perspective, the seven REV-UP counties have strong concentrations of occupations related to oil and gas production. (See Figure A.6 in the appendix of this report.) In addition to people directly employed in drilling activities, such as roustabouts, the region's oil and gas history has resulted in a number of related occupations, including environmental scientists and engineers, as well as specializations in geology and hydrology occupations.

Figure 3.10



**BEST PRACTICES** | One renewable energy economic success story that is particularly relevant to the REV-UP region is the Keystone Industrial Port Complex. Located in Fair Hills, Pennsylvania, this former US Steel site employed close to 7,000 people at the height of its operations. During the 1980s, the plant scaled back its operations, leaving only 100 or so employees at its finishing facility.

US Steel retained ownership of the property while working with state and federal officials to establish timetables for cleanup. In 2005, roughly one-half of the 2,500-acre site was designated by the Commonwealth of Pennsylvania as a Keystone Opportunity Improvement Zone (KOIZ) in order to make the property more appealing to potential investors. The KOIZ designation provides tax breaks for companies that locate on the property through 2018.

The company made it a priority to sell or lease parcels to prospective tenants that met specific criteria, including providing job opportunities at competitive salaries. International firms have been a specific target for the site, resulting in the presence of a number of foreign-owned corporations including Osstem, a South Korean company that makes dental implants. Renewable energy manufacturers were also targeted, with specific incentives packages created by the Governor's Action Team, a committee of economic development professionals that serves as a single point of contact for businesses considering locating or expanding in Pennsylvania. Several companies that have close ties to wind, solar or biofuel energy are already on the site. The two largest renewable energy tenants are Gamesa Wind US LLC, a Spanish-wind turbine manufacturer, and AE Polysilicon, a producer of the raw material, polysilicon, used in the manufacturing of photovoltaic solar panels.

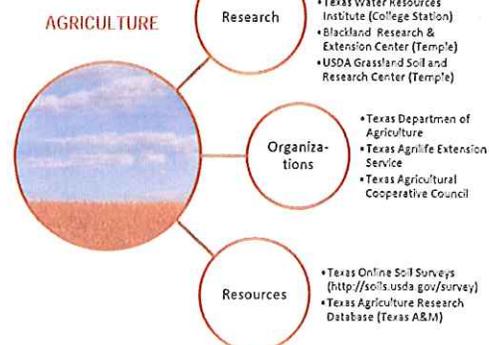
## Agriculture

Agriculture and natural resource industries employed nearly 15,000 people in the seven-county REV-UP region in 2010. In the four rural counties (Burlleson, Lee, Milam, and Robertson) the sector is the largest employer, representing as much as one out of every 4 or 5 jobs in some counties. Corn, hay, sorghum, and cotton are common crops across the seven counties.

**ASSETS** | As with the other sectors, Texas A&M represents a significant asset for agriculture. The university is the recipient of the majority of Texas' federal research dollars related to agriculture. In 2009, Texas A&M received 100 percent of federal funds awarded in the state for biotechnology risk assessment, homeland security related agricultural programs, and animal health and disease research.

Headquartered in Brazos County, Texas AgriLife Research (part of the TAMU system), consists of research centers in 13 cities around the state, as well as a number of on-campus research units. One of the 13 centers, the Blackland Research and Extension Center (BREC), is based in Temple and is focused on

Figure 3.11



**Figure 3.12: Agriculture summary**  
*Agriculture fundamentals in the 7-county region*

	Bell	Brazos	Burleson	Lee	Milam	Robertson	Williamson
Number of farms	2,384	1,350	1,582	1,844	2,045	1,542	1,776
Number of farms per available veterinarian	38	5	122	168	186	96	21
Farms sales in \$ millions	\$32.0 crops \$29.8 livestock	\$12.6 crops \$12.0 livestock	\$19.0 crops \$37.4 livestock	\$8.2 crops \$32.7 livestock	\$28.9 crops \$76.4 livestock	\$18.7 crops \$97.3 livestock	\$54.5 crops \$115.2 livestock
Average age of principle farm operator	58.9	58.1	60.0	59.5	58.9	59.5	57.1
Top 5 crops by acreage	1 Corn	Hay	Hay	Hay	Hay	Hay	Corn
	2 Hay	Corn	Corn	Pecans	Corn	Cotton	Corn
	3 Wheat	Corn	Cotton	Corn	Sorghum	Corn	Sorghum
	4 Sorghum	Sorghum	Sorghum	Sorghum	Cotton	Sorghum	Cotton
	5 Pecans	Soybeans	Wheat	Oats	Wheat	Soybeans	Wheat

SOURCES: USDA, National Agricultural Statistics Service, Census of Agriculture; Texas Department of State Health Services

improving the region's water and soil quality. Two US Department of Agriculture initiatives, the Grassland Soil and Water Research Laboratory and the Natural Resources Conservation Service (NRCS), are co-located with BREC, increasing the center's value to the region. The university also offers outreach statewide through its Texas AgriLife Extension Centers. Texas A&M is also home to the Texas Water Resources Institute. Established in the 1950s, the Institute provides outreach on water management issues and obtains grant funding for water-related projects.

The impact of Texas A&M can be seen in the region's occupational structure. A review of location quotients for agriculture-related occupations shows a high concentration of scientific occupations, including animal scientists; agricultural & food science technicians; veterinary assistants &

laboratory animal caretakers; and soil & plant scientists. In terms of raw numbers, the three largest occupations – farmers & ranchers; farm, ranch & other agricultural managers; and miscellaneous agricultural workers – represent more than 13,000 workers.

**BEST PRACTICE** | In addition to playing an essential role in the economy of the nonurban counties, agriculture provides lifestyle options for area residents. One way to help preserve the small farm option is through the formation of community supported agriculture (CSA) operations. Published in 2005, the 2nd edition of *The New American Farmer* (available at <http://www.sare.org/Learning-Center/Books/The-New-American-Farmer-2nd-Edition>) profiles several successful CSA operations throughout the country. Each profile outlines the scale of the operations and the products offered, as well as lessons learned. These best practices could serve as an important resource for helping interested farmers and ranchers in the region implement a CSA operation.

**Figure 3.13: Selected ag-related federal expenditures in Texas, FY 2009**  
*Federal dollars distributed to Texas, including share distributed within the REV-UP region*

	TEXAS	BELL	BRAZ	BURL	LEE	MILAM	ROBT	WILL
Cooperative Extension Service*	\$32,749,184	✓ 83%	✓	✓	✓	✓	✓	✓
Agricultural research (basic & applied)	\$14,128,855	— 11%	—	—	—	—	—	—
Agricultural research (special)	\$9,844,800	— 57%	—	—	—	—	—	—
Agricultural experiment stations	\$7,259,149	— 109%	—	—	—	—	—	—
Agricultural research (competitive)	\$3,682,604	— 76%	—	—	—	—	—	—
Biorefinery assistance	\$3,407,599	— 105%	—	—	—	—	—	—
Farm labor housing loans & grants	\$2,586,430	—	—	—	—	—	—	—
Agricultural Food & Research Initiative (AFRI)	\$2,269,526	— 95%	—	—	—	—	—	—
Rural business enterprise grants (ARRA)	\$1,200,000	—	—	—	—	—	—	—
Beginning farmer & rancher development programs	\$665,038	—	—	—	—	—	—	—
Biomass R&D Initiative (competitive)	\$600,000	— 100%	—	—	—	—	—	—
International science & education grants	\$405,971	— 37%	—	—	—	—	—	—
Biotechnology risk assessment grants	\$400,000	— 100%	—	—	—	—	—	—
Community food projects	\$324,972	—	—	—	—	—	—	—
Homeland Security (agricultural programs)	\$298,000	— 100%	—	—	—	—	—	—
Food & agricultural sciences (graduate fellowships)	\$234,000	— 100%	—	—	—	—	—	—
Animal health & disease research	\$149,466	— 100%	—	—	—	—	—	—

SOURCES: US Bureau of the Census, Consolidated Federal Funds Report

NOTE (\*): Federal funding for the state extension service program is filtered through and managed by Texas A&M in Brazos County, but all counties in the state benefit from the program.

assistance, the organization is assisting farmers, ranchers, and rural small business owners in accessing available funding through the USDA Rural Energy for America Program (REAP). These grants fund small-scale, on-site renewable energy projects as well as energy efficiency and conservations projects in rural areas. SEED's community-focused approach would be well-suited for the region.

Another best practice, the Northwest Sustainable Energy for Economic Development (SEED), illustrates the link between the energy and agriculture sectors outlined in this section. Based in Seattle, Washington, SEED is a 501(c)(3) nonprofit organization whose mission is to establish a clean, diverse, and affordable Northwest energy system. Since 2001, the nonprofit has worked with communities to develop and implement energy plans, evaluate energy efficiency and conservation tools, and build community-scale renewable energy generation projects. In addition to providing technical assistance, the organization has developed a number of renewable energy publications which are available via its website <http://www.nwseed.org/>.

SEED is currently partnering with the Washington Department of Commerce to assist rural communities in Washington with renewable energy development. Through free workshops and grant writing

## 4: Recommendations

The recommendations outlined in this section provide a framework for leveraging the regional assets and opportunities outlined in Section 3. The focus of the REV-UP planning process was on identifying broad strategies that could be pursued by the REV-UP region as a whole and by individual communities or groups of communities. This approach is a recognition of two realities: 1) some strategies will be a better fit for some parts of the region than others, and 2) the region is home to numerous economic development organizations that have agendas of their own.

In the coming months, the strategies and opportunities identified during the planning process will be refined by the Advisory Committees with guidance from the REV-UP Council. The charge of each committee is described below:

- **Talent Recruitment and Development Committee:** Explore education opportunities such as K-12, post-secondary, apprenticeship, skills certification, career academies, employer-based customized options.
- **Economic Stabilization and Transformation Committee:** Promote cross-regional coordination of like partners to build on common assets and expand regional economic development opportunities.
- **Infrastructure Improvement Committee:** Focus on "quality of place" improvements such as water, road, telecommunications, housing, entertainment, schools, safety, etc.

Figure 5.1: SUGGESTED MILESTONES, 2011

Milestone	Description
Aug. 1	The REV-UP Council identifies priority areas for consideration by the Advisory Committees
Oct. 1	Priority areas vetted and action items and responsibilities presented to the Council for approval
Nov. 1	Funding application underway for strategy or strategies selected for implementation
Dec. 1	REV-UP Council reports status of initiative to Advisory Committees and relevant organizations

With few exceptions, the strategies are not intended to be the sole purview of one committee or another. Rather the work of the committees is designed to cut across strategies. Once a sector or specific strategy has been selected by the Council for priority consideration, the committees should be convened to explore potential action items and responsibilities for implementation. Based on their work, the Council would then select the top strategy or strategies for which to pursue implementation funding. Suggested milestones for this process are presented in Figure 5.1.

### 1. LEVERAGE REGIONAL HEALTHCARE ASSETS.

The REV-UP region's three metropolitan areas have strong healthcare and biosciences assets. Connecting all parts of the region to these assets should be a priority for a number of reasons:

- **Industry trends.** The growth in healthcare-related employment seen in recent years is projected to continue as long-term demographic trends — most notably the aging of the baby boomers and the growth of chronic conditions such as diabetes and heart disease — play out over the next several decades. Life sciences employment is also expected to expand due to advances in areas such as genetic research, which is fueling the growth of personalized medicine and biotech products. Based on national growth projections, demographic trends, and federal policies sectors that merit attention for recruitment and occupational planning including: Medical devices & supplies; Electronic medical records; and pharmaceutical manufacturing and distribution (*see box*).
- **Benefits.** Along with its direct economic benefits in terms of employment and tax revenue, access to healthcare has become an important quality of life asset. The presence of medical facilities, both primary care and emergency care, has become a factor in location decisions for companies, workers, and retirees. In addition, the healthcare sector includes many occupations that offer relatively high wages and abundant career-ladder opportunities. The region is home to a number of providers with aggressive growth strategies, including hospital systems Seton and Scott & White, as well as provider networks, such as Austin Regional Clinic. Supporting these rapidly expanding facilities, as well as others that are facing cutbacks, will help strengthen the region's economic vitality on a number of fronts.

#### OPPORTUNITY SECTORS: Healthcare

**Medical devices and supplies.** The US market for medical devices and supplies is approximately \$75 billion. This sector comprises a range of products, including medical and surgical instruments (such as syringes and catheters) and surgical appliances and supplies (such as sutures and orthopedic devices), as well as ophthalmological and dental equipment and supplies. With the aging of the baby boomers, the demographics are favorable for long-term growth. Technological and scientific advances are also expected to spur continued expansion in the sector. Furthermore, the sector is somewhat less affected by economic cycles since consumers' use of the products are typically dictated by medical necessity.

**Electronic medical records.** Like many sectors, healthcare is undergoing a profound transition through the increased use of information technology to improve efficiencies in services and treatment of disease. The US lags behind other countries in the use of health information technology, or HIT, which encompasses a range of products and services from patient records to scheduling to managing imaging and testing results. Recent efforts to curtail rising expenses (including the health insurance reform bill) are expected to increase the demand for HIT-related products and services, particularly electronic medical records (EMR).

**Pharmaceutical manufacturing and distribution.** Despite job losses, the market for prescription drugs is likely to expand. In addition to factors affecting healthcare generally (such as an aging population and increasing incidence of chronic diseases), pharmaceutical manufacturing growth will be fueled by rapid expansion in the use of generic drugs, rising international demand, and the growing overlap between pharmaceutical preparations and biotech. The initial phases of drug development require access to research facilities and venture capital funding. As a result, these activities tend to cluster around major research universities and population centers. Once a drug is through the long development phase, however, factors affecting location decisions tend to be more in-line with traditional criteria, such as lower costs, quality workforce, and access to markets. The REV-UP Region's nonurban counties could be a fit at this stage when companies typically seek to move production out of higher-cost urban settings.

- **Regional initiatives.** Each of the three metro areas has specific initiatives around healthcare and/or life sciences: Research Valley Bio Corridor (Bryan-College Station), Temple Health & Bioscience Economic Development District (Temple-Killeen-Fort Hood), and multiple initiatives in the Austin-Round Rock metro area, including the Round Rock Higher Education Center and related development and the Greater Austin Chamber of Commerce's BioAustin initiative. The common denominator in all three metro areas is the Texas A&M Health Sciences Center. Based in Bryan-College Station, THSC also has facilities in Bell and Williamson Counties. Increasing collaboration between these initiatives — with an eye towards extending the benefits to the nonurban counties they surround — should be the primary focus of this recommendation.

#### Strategies

- **Facilitate information-sharing among key initiatives.** Because of its cross-jurisdictional composition, the REV-UP Council could provide a means for cross-pollination among the region's public sector initiatives.
  - **Industry recruitment.** The REV-UP council members could serve as a resource to recruitment efforts of economic development organizations in the region. Specific steps would include preparing profiles of relevant careers, participating in target industry or other focus groups, and providing a link between economic development professionals and workforce-related initiatives.
  - **Funding.** Gathering information on healthcare-related funding opportunities would provide a service to all of the region's healthcare initiatives. Federal agencies can provide the starting point (see box).
  - **Information sharing.** The REV-UP Council could help raise awareness of healthcare-related data and initiatives. For example, the East Texas Area Health Education Center (AHEC), with collaboration and funding support

#### Federal Agencies in Healthcare Workforce Development

##### US Department of Health and Human Services

- **Health Resources and Services Administration (HRSA).** Infrastructure support, scholarships, and student loan repayments for training the health care workforce in accredited higher education programs and institutions. Approximately \$50 million to fund grants for equipment to enhance training for health professionals
- **Office of the National Coordinator for Health Information Technology (ONC).** Approximately \$70 million to community college consortia to educate Health IT professionals. \$378 million to create 32 Regional Extension Centers to help health care providers become meaningful users of Electronic Health Records (EHR). \$548 million to support State Health Information Exchange

##### US Department of Education

- **Office of Vocational and Adult Education (OVAE).** \$1.4 billion in Perkins Act formula funding to support secondary and postsecondary career and technical education (CTE). \$6 million to selected states to promote rigorous CTE programs of study

##### US Department of Labor

- **Employment & Training Administration (ETA).** ETA supports healthcare workforce training through WIA formula-funded public workforce system. In February 2010, ETA awarded 55 grants totaling \$226 million, with 40 grants focused on healthcare projects. On April 7, DOL released a grant competition for \$13.2 million to support projects that use virtual service-delivery models for healthcare careers.

SOURCE: Presentation from *Collaborating to Support Healthcare Sector Strategies* May 5<sup>th</sup> webinar accessed at [www.workforce30e.org](http://www.workforce30e.org)

from the Texas State Office of Rural Health, has prepared a series of data profiles for selected counties, including Milam. The organization also offers the Texas Toolbox for Community Health Development, a knowledge base for rural communities to help them build their health professions pipelines and strengthen their local health systems.

- **Expand sector-based strategies across region.** Sector-based strategies are regional, industry-specific approaches to workforce needs, implemented by an employer-driven partnership of relevant systems and stakeholders. Elements of a sector-based approach to healthcare have been undertaken by organizations in the REV-UP region. Examples include the pipeline mapping of registered nurses done by the Central Texas Workforce Board and the Healthcare Training Pathway partnership formed by Capital IDEA and Austin Community College (which serves Williamson County). The REV-UP Council could provide a mechanism for tying existing initiatives together and incorporating "lessons learned" from other sector-based models across the country. The National Governors Association Center for Best Practices' June 2010 report on the Automotive Manufacturing Technical Education Collaborative (AMTEC) — originated as a partnership between Toyota and the Kentucky Community & Technical College System — can provide a starting point. Specific activities would include leading workforce-mapping initiatives, convening industry-based councils, and helping to identify relevant training resources.
- **Build on existing healthcare personnel recruitment efforts.** The aging of healthcare workers has been cited as a challenge nationally. In Texas, more than 50 percent of counties have been designated by the federal government as Primary Care Health Professional Shortage Areas. Shortages have also been a problem in nursing as a large share of the profession nears retirement age. According to the 2008 National Sample Survey of Registered Nurses released in September 2010 by the federal Division of Nursing, the average age of the registered nurse population in 2008 was 46 years of age, up from 45.2 in 2000.
  - **Organizational networking.** The REV-UP council could facilitate a cross-jurisdictional meeting among organizations associated with the training and recruitment of healthcare personnel. The purpose of the meeting would be to identify regional personnel needs that would benefit from a more comprehensive approach. The meeting could be hosted annually to help enhance relationships between the relevant players in three metropolitan areas, as well as provide a forum for updating each on the others activities and sharing information about available resources.
  - **Technology.** For some parts of the region, telemedicine and other forms of remote service delivery could create opportunities to make practitioners more profitable and therefore more likely to consider the region.

#### RESOURCE: Brazos AHEC

The Brazos Area Health Education Center (AHEC) serves a number of counties in the 111-county East Texas AHEC territory, including Brazos, Burleson, Milam, and Robertson. The AHEC program was developed by Congress in 1971 to recruit, train and retain a health professions workforce committed to underserved populations. The program helps connect students to careers in healthcare and helps rural communities recruit and retain healthcare professionals.

- o *Incentives.* State or local incentives can play a role in attracting and retaining talent in key fields. REV-UP Council members could help propose and promote innovative programs, such as tuition reimbursement for those professionals that remain in an underserved region for a designated period.
- **Facilitate links between healthcare and life sciences and other areas, such as agriculture.** Agricultural products play an important role in furthering advances in healthcare and life sciences; this connection is illustrated by the name of the applicable college at Texas A&M: the College of Agriculture and Life Sciences. Finding these connections and acting on them could include:
  - o *Soil type inventory.* The availability of an inventory of soil types in the region was identified as a potential need during the input phase of the REV-UP process. As new technologies (like plant-based vaccine production) move from the pilot scale to mass production, this knowledge could be instrumental in identifying areas that might be suitable for specific plant types. The USDA's Natural Resources Conservation Service, which is co-located with the Blackland Research and Extension Center in Temple, recently announced the completion of the state's first complete inventory. The REV-UP's asset map can help match these types of resources with economic development organizations and others who need them.

## 2. LINK REGIONAL TOURISM ASSETS

Tourism plays an essential role in drawing both dollars and future residents to the region. The REV-UP region and its anchor metropolitan areas offer a number of attractions and activities that appeal to a variety of travelers. Lakes, caves, and other natural features provide options for outdoor enthusiasts, while heritage sites (such as historic train depots and Chisholm Trail markers), presidential libraries, and museums appeal to history buffs and education-oriented travelers. State parks, authentic downtowns, convention facilities, festivals, cultural offerings, and high-profile events draw thousands of visitors to the region each year. These assets offer a strong foundation for a regional tourism strategy. However, assets in some areas could benefit from strengthening tourism linkages throughout the region. Filling in the pieces will include packaging the region's assets into tourist-friendly roadtrips and "trails" (like the existing BBQ Trail) and highlighting options for lodging and dining that showcase the region's attributes.

Texas communities are fortunate to have a built-in market: other Texans. Research conducted through the Office of the Governor's Division of Economic & Tourism consistently demonstrates that Texans are responsible for the largest share of travel expenditures in the state. The agency's most recent report (June 2010) shows that Texans accounted for 54.5 percent of travel expenditures in the state in 2009. And, the largest share of resident travel is undertaken for leisure travel, with 39 percent of residents indicating "weekend getaways" as the primary purpose for their travel within the state.

Even with this advantage, a successful tourism effort will depend on raising awareness externally about what the region has to offer and creating intraregional synergies that can help expand the visitor pool for everyone.

### Strategies

- **Continue to document tourism assets (and barriers).** Building on the asset map created as part of this planning process is the focus of this strategy. Understanding barriers to tourism in parts of the region (such as a lack of lodging or restaurants) should be part of this process. The existing map should be shared with relevant tourism organizations. At some stage, the tourism map could be broken out separately in order to better delineate regional assets.
- **Link existing assets with existing attractions in the REV-UP region and other neighboring areas.** The existing assets gain traction when they're connected with other assets. This linking can be done in a number of ways:
  - o *By theme.* Grouping attractions along themes such as heritage tourism, birding, eco-tourism, or agritourism can be accomplished through the creation of relevant trails, by linking with state and national sites catering to this population, or through the creation of a dedicated regional site.
  - o *By traveler.* Different types of travelers are looking for different types of attractions and accommodations. Possible targets for the REV-UP would include RV owners, off-road vehicles, adventure travelers, and outdoor sports, like fishing and hunting. Packaging regional assets in customized itineraries designed to appeal to these groups could increase visitor traffic throughout the region.

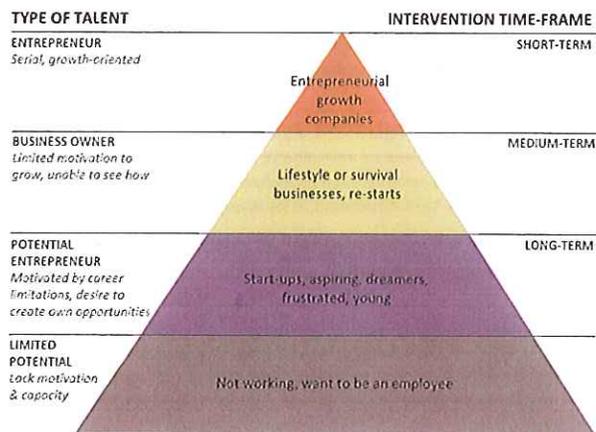
- o *By market.* Targeting attractions at a geographic specific market (Houston or Dallas, for example) would require an understanding of consumer preferences in those areas. Targeting international tourists should be given consideration. The Texas Travel Research website can provide a starting point for information about travel behaviors of various groups.
- **Coordinate regional marketing plans and media strategies.** While this recommendation does not suggest the creation of a formal regional marketing initiative, there is benefit in coordinating the plans of the various tourism-related agencies and pooling resources where appropriate. The Rural Texas Tourism Center (RTTC), located in the REV-UP region, could serve an important role in this strategy.
  - o *Branding and image.* The REV-UP Council could facilitate a discussion around what types of branding might benefit those portions of the region that are not already branded. This discussion would also help build relationships and encourage a sense of regional cooperation.
  - o *On-line presence.* The creation of a single tourism website for the REV-UP region probably does not make sense. However, ensuring that existing sites link to each other and have similar information about cross-regional assets would benefit all parties through increased website traffic. Making sure regional assets are listed on relevant state and national travel sites – by theme and by traveler – is part of this strategy.
    - Encouraging participation in the Rural Texas Tourism Center would help strengthen the region's web presence. Participating communities can create their own tourism pages on the RTTC website for a nominal fee (currently \$50 per year), including a link to their local sites. In addition, communities can showcase their tourism attractions in revolving displays at the center (located in downtown Giddings) and offer advertising opportunities for service providers via the RTTC website (currently \$100 per year).
- o *Media strategy.* One well-placed news story can be worth far more than any formal marketing campaign. REV-UP Council members could facilitate the creation of a list of contacts and guidelines for publication. Emphasis should be on generating articles for publications (both online and traditional) aimed at the region's primary audience – residents of the state's major metro areas looking for "weekend get-aways." Published articles should be distributed to all members and linked on organization websites. Particular attention should be given to capitalizing on major tourism-related stories, such as the improvements currently underway at Lake Somerville.

### 3. ENHANCE REGIONAL ENTREPRENEURSHIP EFFORTS

Entrepreneurship has become an essential tool in the economic development toolbox. Especially in rural areas, communities are recognizing that a "grow your own" strategy has a higher probability of success than recruiting a major employer to the area. In addition, entrepreneurship strategies that foster new business and job creation are often more cost effective than incentives paid to recruit businesses to a community. For example, an April 2008 study by the Appalachian Regional Commission's Entrepreneurship Initiative found the public cost of the initiative per job created ranged from \$579 to \$3,994 — well below similar per-job statistics for large-scale business attraction efforts.

Viewed in its broadest terms, creating a climate for entrepreneurship can also be part of a talent attraction strategy. Today's workforce is becoming more entrepreneurial even within traditional settings. As talent shortages collide with technological innovations, shrinking benefits packages, and rising fuel costs, employers are becoming more accepting of flexible work arrangements such as telecommuting and contracting. These trends, coupled with a growing interest in improving work-life balance, have helped to create a new "economy of one" — quite simply, those workers who have the ability to take their jobs with them. Areas that are attractive to entrepreneurs — those that provide the ability to connect with and access a network of people and ideas — typically appeal to this group as well.

Figure 5.2: Entrepreneurship Framework



SOURCE: RUPRI Center for Rural Entrepreneurship

### Strategies

- **Extend the existing entrepreneur support system.** Connecting potential entrepreneurs with appropriate resources is the primary focus of this recommendation. The jumping off point for this strategy should be expanding and maintaining the map of entrepreneurship assets created through this planning process.
  - *Organizational networking.* The REV-UP council could facilitate regular meetings among relevant organizations. These meetings could serve as forums for identifying entrepreneurs' needs, planning joint workshops and other events, developing outreach strategies, and educating each other on the programs and services each offers. Creating this sense of regional cooperation could help to build a "no-wrong-door" system in the region. Under this concept, an entrepreneur that seeks assistance from any organization in the region can be referred directly to the provider that best meets his or her needs rather than being sent from one door to another.
  - *Training and events.* REV-UP Council members could provide support to existing organizations by:
    - sponsoring collaborative events (such as a regional small business summit),
    - hosting targeted training sessions and workshops on topics of interest to entrepreneurs (including entrepreneur "bootcamps," such as FastTrac created by the Kauffman Foundation or NXLevel developed by the University of Colorado at Denver), and
    - convening working groups to address barriers or focus on entrepreneurship opportunities in specific industries.
  - *Capital access.* One need common to entrepreneurs regardless of location is better access to capital. The focus of the REV-UP Council's efforts in this area should be on supporting efforts to help prepare entrepreneurs to meet with potential funders. Actions would include hosting financial literacy trainings, organizing capital workshops, and facilitating introductory meetings between entrepreneurs and potential funders. The City of Austin's Small Business Development Program's annual "Meet the Lender" event could be a model.

#### EXAMPLE: The Hankamer School of Business, Baylor University

The Hankamer School of Business at Baylor University has received national recognition for its efforts to promote entrepreneurship. In addition to offering a course of study to prepare its undergraduate and graduate students for entrepreneurial careers, it houses the John F. Baugh Center for Entrepreneurship. This center offers two primary programs: the Innovation Evaluation Program and the Institute for Family Business. The Innovation Evaluation Program evaluates new products or ideas to determine the likelihood for commercial success. The Institute for Family Business provides educational opportunities for family business owners to strengthen their businesses across generations.

The entrepreneurship program at the Hankamer School was ranked 14th in the nation by *U.S. News & World Report*.

For more information: <http://www.baylor.edu/business/entrepreneur/>

- **Enhance access to business support services.** Entrepreneurs often must seek specialized services such as patent attorneys; prototype design and development; marketing, branding, and advertising assistance; and payroll support. These services are typically located in metropolitan areas, making it harder for entrepreneurs in nonurban parts of the region to access them. The REV-UP Council could help extend the reach of these companies and individuals by creating an online directory of business service providers. In addition to linking businesses with the services they need, a web-based directory could help demonstrate interest in a particular service throughout the region. Once sufficient demand is demonstrated, service providers could be offered meeting space in the nonurban counties (donated by a local chamber or other organization) for firms willing to hold regular office hours in the region. This approach can benefit entrepreneurs by facilitating access to service providers and could provide sufficient evidence to service providers to support the opening of a new office in the region.
- **Build local capacity.** The REV-UP Council could spearhead an effort to train community leaders, economic development professionals, and policy-makers on how to promote entrepreneurship and an entrepreneurial climate in their communities.
  - *Entrepreneurial coaches.* Founded in 2003 by the College of Agriculture at the University of Kentucky, the Kentucky Entrepreneurial Coaches Institute (KECI) was designed to promote economic diversification in northeast Kentucky. Since then, the program has expanded into other parts of Kentucky, training 30 coaches each year to help connect entrepreneurs with service providers and support. KECI has also recently begun working with groups outside Kentucky and could serve as the model for developing a similar program in the region. The Rural Policy Research Institute's (RUPRI) Center for Rural Entrepreneurship has created an E-Coaching Network (via Facebook) to help connect communities and individuals to resources for coaching. The Texas Agrilife Extension's Texas Center for Rural Entrepreneurship (<http://www.tcre.org/>) has a program to certify Entrepreneurship Guides – businesses or individuals that are interested in supporting entrepreneurship in their community.
  - *Community training.* A number of curriculum are available for community training, including:
    - The Texas Center for Rural Entrepreneurship has a free training curriculum available to communities in Texas as part of its "E-Ready Communities" initiative.
    - The Rural Policy Research Institute (RUPRI) also provides a training course to communities. These courses can be anything to half-day in-service trainings to full-week institutes. (<http://www.energizingentrepreneurs.org/>)
    - The Siroli Institute trains communities on how to implement their trademarked Enterprise Facilitation model. (<http://www.siroli.com/>).

Once an initial training is held, the REV-UP Council could sponsor periodic conferences and seminars on topics of interest to keep entrepreneurship in the minds of the trainees. Allocating time for participants to share experiences and support one another should be an essential part of these events.
- **Support initiatives to promote youth entrepreneurship.** Entrepreneurship breeds more entrepreneurship by creating a culture that encourages people to take risks and start their own business ventures. Raising awareness of entrepreneurship and fostering an entrepreneurial spirit from an early age can help encourage a

more supportive culture. Profiling successful business owners in local media sources, holding entrepreneurship expos, hosting business plan competitions, and encouraging citizens to support local businesses are all actions that can help foster a more entrepreneurial culture. Youth entrepreneurship programs such as Junior Achievement ([www.ja.org](http://www.ja.org)) and Lemonade Day ([www.lemonadeday.org](http://www.lemonadeday.org)) teach kids entrepreneurial skills from an early age. Such initiatives can be instrumental in building a strong entrepreneurial spirit in a region.

- **Help lower barriers to entry for new entrepreneurs.** Entrepreneurs, small businesses, and those in the "economy of one" face some common obstacles to success. REV-UP Council members could help support existing organizations in removing or minimizing these barriers.
  - *Access to insurance.* Health Group Cooperatives provide access to more affordable healthcare for small employers. Information on creating a cooperative can be found at the Texas Department of Insurance website: <http://www.tdi.state.tx.us/health/index/hoop.html>.
    - Insurance assistance is currently available in some REV-UP counties through TexHealth, an innovative program which provides premium assistance to employees earning \$15.62 per hour or less. Costs of the program are split between the employer, employee, and TexHealth (referred to as a "3-Share Plan" or "Multi-share Plan"). Williamson County is part of TexHealth Central Texas; Brazos, Robertson, and Burleson Counties are part of TexHealth Brazos Valley.
  - *Permitting.* The asset map created for this project could be expanded to include links (including addresses and contact numbers) to information on registering businesses and obtaining necessary permits for each county.
  - *Regulatory policies.* As part of the cross-regional organizational networking described earlier, the group could examine regulatory policies affecting small businesses in the region to ensure these policies do not inadvertently negatively affect small businesses.

#### CASE STUDY: Lubbock Chamber Employer Health Plan

In 2006, the Lubbock Chamber of Commerce launched an employer health plan to help its members find affordable health insurance. Members with two or more employees may enroll in the plan and choose from seven different plan designs offered by FirstCare. In order to offer this employer plan, the Chamber formed two Health Group Cooperatives, one for large employers and one for small employers. Health Group Cooperatives must have at least 10 employers and may grow to any size, but it will be considered a single large employer for the purposes of issuance of coverage and rating. This structure provides the opportunity for the cooperative to realize savings and obtain more flexibility in plan design. As of June 2008, the Chamber has 10,242 lives enrolled in the plan, 20 percent of which were previously uninsured. The average business enrolled in the plan has 10 employees. Small business owners enrolled in the plan have been able to realize thousands of dollars of savings while covering more of the premium cost for their employees.

For more information:

<http://www.lubbockchamber.com/healthcare.htm>  
<http://www.tdi.state.tx.us/health/index/hoop.html>

- *Office space.* The creation of an office-sharing database could help match entrepreneurs with available space at private businesses or public agencies. Entrepreneurs would have to be vetted and clear guidelines set for the use of space. However, this could be an innovative solution for individuals with short-term space needs.
- **Explore options for creating an entrepreneurship portal.** The REV-UP council could spearhead the creation of a high-quality, user-friendly website for entrepreneurs. The portal could provide a single point of reference for entrepreneurship resources available in the broader region. The site should have a simple, easy-to-remember name and include a directory of service providers, calendar of events, information resources, as well as a forum for entrepreneurs to share information and exchange ideas.
  - U.S.SourceLink (<http://www.ussourcelink.com>) offers a turnkey system for matching entrepreneurs to the resources they need. Founded by the Kauffman Foundation, University of Missouri-Kansas City, the Small Business Administration, and others, the company provides a model for linking service providers to each other and to clients through an online portal. The Kentucky Small Business Development Center's portal, <http://www.kybizinfo.com/>, is an example.
  - Another example of a successful portal is Wisconsin Entrepreneurs Network (<http://www.wenportal.org>). Between 2005 and 2010, members of the WEN network counseled 13,513 business clients and trained 47,818 individuals, according to the organization's 2010 annual report.
  - Consider including a social networking platform to allow entrepreneurs to better connect with each other. Companies such as Small World Labs ([www.smallworldlabs.com](http://www.smallworldlabs.com)) offer software to create these platforms.
  - Launch a region-wide outreach initiative to drive entrepreneurs to the portal. This could include publishing the website in local newspapers and in the newsletters of service providers and partner organizations, providing links from the websites of relevant organizations in the region, and creating cards with the website URL to be distributed by service providers and partner groups.

#### 4. POSITION THE REGION FOR ENERGY-RELATED PROJECTS

Concerns about the downsides of oil production (security issues, environmental degradation, price volatility) continue to drive interest in identifying alternative sources of energy. As a result, public and private investment in the energy sector will continue to increase for the foreseeable future. The REV-UP region has some opportunities associated with cultivating new sources, particularly biomass / biofuels and solar.

Much of the demand for alternative energy will be driven by state and federal regulatory policy. The expansion of the federal Renewable Fuels Standard (RFS) — which mandates the volume of renewable fuel that must be blended with transportation fuels, such as gasoline and diesel — will increase demand for biofuels like ethanol and others. At the state level, the expansion of Texas's Renewable Portfolio Standard (RPS) — which mandates the amount of electricity that must come from renewable sources like solar and wind — will increase demand for alternative energy sources. Originally passed in 1999 as part of the state's electricity industry restructuring legislation, Texas's RPS has been so successful that it was greatly expanded in 2005. The RPS has been credited with making Texas the number one wind energy producer in the nation. The new standards set a goal specifically for "non-wind" sources which could help provide a similar push for other technologies.

The US Congress has considered the creation of a similar standard at the national level (called the Renewable Electricity Standard or RES), however, it has faced significant opposition. Passage of the RES, or the similarly controversial "cap and trade" legislation aimed at greenhouse gas emissions, would also increase demand for renewable energy sources and could make some newer technologies more feasible.

##### Strategies

- **Help position the region to capitalize on federal energy-related funds.** The American Recovery and Reinvestment Act (ARRA) provides approximately \$32.7 billion in budget authority to the US Department of Energy (DOE). Among the priorities identified under ARRA is investing in the domestic renewable energy industry. Although much of this money has likely been allocated, some programs have experienced difficulty getting money out the door. In addition, the DOE offers other non-ARRA-funded initiatives that could be pursued.
  - *Education and outreach.* The REV-UP Council could help educate member communities about specific opportunities and facilitate multi-regional proposals for funding. Areas to consider include:
    - *Biomass/biofuels.* Work with Texas A&M "Crops to Wheels" and other initiatives to understand biofuel opportunities. Explore planned outcomes for federal biorefinery & biomass funding received by pilot and demonstration-scale projects nationally (see table, page 55). The university recently received a \$2.3 million grant from DEO to fund a research initiative that converts agricultural wastes into biofuels and high-quality animal feeds.

- *Energy efficiency.* Under ARRA, a substantial amount of funding was made available to states and regions for energy efficiency and weatherization.
- *Solar.* Recent projects, such as the planned 60-megawatt Pflugerville Solar Farm, continue to provide momentum to Central Texas's solar and clean-tech industry. Sited on 728 acres, the project would use more than 400,000 solar panels to generate sufficient energy to power roughly 40,000 homes. If constructed, the project would be one of the largest solar farms in the United States.
- *Wind.* The subject of wind power came up frequently during the planning process. According to the State Energy Conservation Office, wind classifications of 4 or better are typically required for utility-scale wind power production (based on a classification scale ranging from 1 to 7, assuming 50-meter towers). While wind speed determinations should be done on a site-specific basis, the REV-UP region counties generally fall below this threshold. Manufacturing of wind turbines and components could present an opportunity; the industry has seen modest growth at the national level. However, the majority of manufacturing related to wind power is still occurring overseas.
- *Eagle Ford Shale.* Unlike conventional oil and gas, which are typically found in pockets making recovery relatively easy, unconventional deposits are trapped within impermeable or semipermeable structures and dispersed across wide basins. Until very recently, drilling technology was inadequate to make pursuit of unconventional supplies financially feasible. Improvements in drilling techniques, most notably the use of hydraulic fracturing (or fracing) and horizontal drilling, have made recovery of unconventional supplies more attractive. Several of the REV-UP region counties are part of the Eagle Ford Shale formation.
- *Relationship-building.* Federal funding has been a major catalyst for new development, making relationships with federal agencies a high priority. The REV-UP Council can help connect communities with appropriate federal agencies and facilitate relationships with state and federal congressional delegations.
- **Support "green economy" training needs.** The entire REV-UP region is part of the I-35 Green Corridor Collaborative, a multi-organization group designed to pool training resources to advance training in green energy fields. The results of this planning process should be used to help guide investment decisions regarding "green" training.
- **Create "greener" image for region.** While parts of Central Texas are well-known for their "green" practices, pursuing alternative energy and energy efficiency projects could help extend this image throughout the region. Having an environmentally friendly profile can help regions attract and retain talent, particularly young people who often place the environment among their top concerns.

Figure 5.3: Federal Grants Awarded to Selected Integrated Biorefinery Projects

Type	Grantee	DOE Grant Amount	Non-Fed Amount	Project Location	Description of Project
Existing project	Bluefire Ethanol	\$81,134,686	\$223,227,314	Fulton, MS	Project will construct a facility that produces ethanol fuel from woody biomass, mill residue, and sorted municipal solid waste. The facility will have the capacity to produce 19 million gallons of ethanol per year.
Demonstration scale	Enerkem	\$50,000,000	\$50,470,217	Pontotoc, MS	Project will be sited at an existing landfill and use feedstocks such as woody biomass and biomass removed from municipal solid waste to produce ethanol and other green chemicals through gasification and catalytic processes.
Demonstration scale	BioEnergy International	\$50,000,000	\$59,589,188	Lake Providence, LA	Project will biologically produce succinic acid from sorghum. The process being developed displaces petroleum based feedstocks and uses less energy per ton of succinic acid produced than its petroleum counterpart.
Demonstration scale	Sapphire Energy	\$50,000,000	\$55,064,206	Columbus, NM	Project will cultivate algae in ponds that will ultimately be converted into green fuels, such as jet fuel and diesel, using the Dynamic Fuels refining process.
Demonstration scale	INEOS New Planet BioEnergy	\$50,000,000	\$50,000,000	Vero Beach, FL	Project will produce ethanol and electricity from wood and vegetative residues and construction and demolition materials. Facility will combine biomass gasification and fermentation, and will have the capacity to produce 8 million gallons of ethanol and 2 megawatts of electricity per year by the end of 2011.
Pilot scale	Algalon Biofuels	\$25,000,000	\$33,915,478	Fresport, TX (near Lee Co., TX)	Project will make ethanol directly from carbon dioxide and seawater using algae. The facility will have the capacity to produce 100,000 gallons of fuel grade ethanol per year.
Pilot scale	ClearFuels Technology	\$23,000,000	\$13,433,926	Commerce City, CO	Project will produce renewable diesel and jet fuel from woody biomass by integrating ClearFuels' and Rentech's conversion technologies. The facility will also evaluate the conversion of bagasse and biomass mixtures to fuels.
Pilot scale	Archer Daniels Midland	\$24,834,592	\$10,945,609	Decatur, IL	Project will use acid to break down biomass which can be converted to liquid fuels or energy. The ADM facility will produce ethanol and ethyl acetate, a compound used to make a variety of materials, and will also recover minerals and salts from the biomass that can then be returned to the soil.
Pilot scale	Amyris Biotechnologies	\$25,000,000	\$10,489,763	Emeryville, CA	Project will produce a diesel substitute through the fermentation of sweet sorghum. The pilot plant will also have the capacity to co-produce lubricants, polymers, and other petro-chemical substitutes.
Pilot scale	Haldrup Topsoe	\$25,000,000	\$9,701,468	Des Plaines, IL	Project will convert wood to green gasoline by fully integrating and optimizing a multi-step gasification process. The pilot plant will have the capacity to process 21 metric tons of feedstock per day.
Pilot scale	Honeywell's UOP	\$25,000,000	\$5,635,340	Kapolei, HI	Project will integrate existing technology from Ensyn and UOP to produce green gasoline, diesel, and jet fuel from agricultural residue, woody biomass, dedicated energy crops, and algae.
Pilot scale	ICM	\$25,000,000	\$5,268,135	St. Joseph, MO	Project will modify an existing corn-ethanol facility to produce cellulosic ethanol from switchgrass and energy sorghum using biochemical conversion processes.
Pilot scale	American Process	\$17,944,502	\$10,149,503	Alpena, MI	Project will produce fuel and potassium acetate using processed wood generated by Decorative Panels International, an existing hardboard manufacturing facility in Alpena. Pilot plant will have the capacity to produce up to 690,000 gallons of ethanol and 690,000 gallons of potassium acetate per year starting in 2011.
Pilot scale	ZeaChem	\$25,000,000	\$525,000	Boardman, OR	Project will use purpose grown hybrid poplar trees to produce fuel-grade ethanol using hybrid technology. Additional feedstocks such as agricultural residues and energy crops will also be evaluated in the pilot plant.
Pilot scale	Solzayma	\$21,765,738	\$3,857,111	Riverside PA	Project will validate the projected economics of a commercial scale biorefinery producing multiple advanced biofuels. Will produce algae oil that can be converted to oil-based fuels.
Pilot scale	Logos Technologies	\$20,445,849	\$5,113,952	Visalia, CA	Project will convert switchgrass and woody biomass into ethanol using a biochemical conversion processes.
Pilot scale	Renewable Energy Institute International	\$19,930,930	\$5,116,072	Toledo, OH	Project will produce high quality green diesel from agriculture and forest residues using advanced pyrolysis and steam reforming. The pilot plant will have capacity to process 25 dry tons of feedstock/day.
Pilot scale	Elevance Renewable Sciences	\$2,500,000	\$525,000	Newton IA	Project was selected to complete preliminary engineering design for a future facility producing jet fuel, renewable diesel substitutes, and high-value chemicals from plant oils and poultry fat.
Pilot scale	Gas Technology Institute	\$2,500,000	\$525,000	Des Plaines, IL	Project was selected to complete preliminary engineering design for a novel process to produce green gasoline and diesel from woody biomass, agricultural residues, and algae.

SOURCE: US Department of Energy, [http://www.energy.gov/media/564M\\_Biomass\\_Projects.pdf](http://www.energy.gov/media/564M_Biomass_Projects.pdf)

## 5. STRENGTHEN AGRICULTURE-RELATED OPPORTUNITIES

Agriculture is a cornerstone for the region. For the four nonurban counties – Burleson, Lee, Milam, and Robertson – it is the largest sector in terms of employment. Even metropolitan area counties, like Williamson County still have pockets of agricultural land. Exploring opportunities surrounding agricultural producers and related industries must be part of any plan for the REV-UP region.

Ensuring that farmers and livestock producers have access to the latest information about opportunities and available resources is at the core of this strategy. Working with existing groups, such as Texas AgriLife Extension and the region's agricultural cooperatives should be the primary approach. The asset map created as part of this work can provide a starting point for identifying specific opportunities for collaboration.

### Strategies

- Facilitate agriculture-related outreach activities. The REV-UP Council could work with relevant organizations to address topics of concern for local farmers and livestock producers. Potential areas to consider include:
  - *Succession planning.* As with any small business, farmers should be encouraged to create succession plans. With many farmers approaching retirement age, failure to plan could have serious consequences.
  - *Community supported agriculture (CSA).* Under the CSA model, growers offer "shares" to the public. In exchange for payment, members receive a pre-determined amount of the yield, such as a standard basket of produce each week.
  - *Workforce training needs.* Contrary to popular belief, today's agricultural workers often require highly specialized training. One occupation expected to be in demand nationally is precision agriculture technicians.

### OPPORTUNITY SECTORS: Agriculture

**Sorghum.** Sorghum is already a significant crop in the REV-UP region counties, serving primarily as animal feedstock.

Alternative markets for the grain include industrial applications in energy (see below), construction (sorghum is used as a substitute for wood in wallboard), and packaging materials (it is biodegradable and does not conduct static electricity). Other niche markets include bird seed and gluten-free food products.

**Energy crops.** Although the biofuels industry has been slow to develop, demand for energy crops is likely to grow as new technologies are implemented. Examples of energy crops include sorghum, switchgrass and other grasses, sugar cane, and algae.

**Micro-processing.** Passage of the national Food Safety Modernization Act in 2010 spurred a wave of state-level legislation designed to support small-scale food production. The Texas legislature is currently considering a "cottage food" bill (HB2084) that would allow home-based production of a limited range of products. The bill also calls for the study of the regulation of small dairy producers in the state. Passage of the bill or other similar legislation could open the door for micro-processing in the state.

**Aquaculture.** Aquaculture products range from freshwater shrimp (prawns) and crayfish to aquatic plants to a wide range of fish species. Associated opportunities that can help diversify income streams include recreational fishing (opening ponds to the public for fee-based fishing) and converting wastes to energy. Texas AgriLife Extension should be consulted as part of the formulation of an agricultural strategy for the region.

- *Agricultural forum.* Members of the REV-UP Council could provide a forum for discussing issues of concern among area agricultural producers. For example, population growth often encroaches on rural lands and creates tension between urban and rural areas. Other examples include water management topics and issues impacting the area's horse industry. As part of this idea, the Council could explore interest in hosting an annual summit for farmers and ranchers.
- **Help connect farmers with energy-related opportunities.** The USDA's Energy Matrix could serve as the starting point for identifying federal energy-related initiatives.
  - *Energy crops.* Energy crops, such as switchgrass and sorghum, as well as waste-to-energy, represent potential opportunities for growth.
  - *Waste-to-energy.* WTE facilities use manure and other agricultural by-products in the production of energy. These systems have the potential for meeting on-site energy needs while addressing an environmental challenge at the same time. The US Environmental Protection Agency's AgSTAR Program is a voluntary outreach and educational program that promotes the recovery and use of methane from animal manure.
  - *Energy efficiency.* The USDA's Rural Energy for America Program (REAP) provides funds for farmers to implement energy efficiency measures. Helping farmers tap into federal funds can improve profitability and aid in the retention of agricultural operations.
- **Help raise awareness about other potential market opportunities.** The REV-UP Council could help relevant organizations, such as Texas AgriLife, get the word out about market trends that are driving demand for various products.
  - *Consumer preferences.* Tapping into consumer trends, such as the growing interest in organic and heirloom products, could expand market share. Specialty diets, such as the growth in gluten-free products, could also provide additional markets.
  - *Local food movement.* The "locavore" movement provides opportunities to provide crops to restaurants in surrounding metro areas that feature organic or locally produced products and to participate in "buy local" programs of area retailers.
  - *Biotech.* As stated earlier, there is a growing link between agriculture and biotech. Plant-based vaccine production is an example.

**BIOMASS CROP ASSISTANCE PROGRAM (BCAP):** Under this program, USDA's Farm Service Agency provides incentives to farmers, ranchers and forest landowners to establish, cultivate and harvest biomass for heat, power, bio-based products and biofuels. Created in the 2008 Farm Bill, BCAP is a primary component of the domestic agriculture, energy, and environmental strategy to reduce U.S. reliance on foreign oil, improve domestic energy security, reduce carbon pollution, and spur rural economic development and job creation.

- *Agritourism.* Agritourism can take a number of forms from the most basic "pick-your-own" approach to more complex operations involving lodging and historical reenactments. For some producers, agritourism represents a source of supplementary income, while others have seen this side of the business completely supplant their original operation.
- *International.* Growing economies such as China, India, and Brazil have fueled demand for US products. Connecting farmers with programs that help access these markets (see text box) should be part of this effort.
- **Support agriculture-related recruitment efforts.** The REV-UP Council could serve as a resource for chambers and economic development organizations in the region in the recruitment of agriculture-related businesses by providing occupational profiles and serving as a resource.

**RESOURCE:** Southern US Trade Association  
The Southern United States Trade Association (SUSTA) is a non-profit agricultural export trade development association that represents the departments of agriculture of the 15 southern states (including Texas) and the Commonwealth of Puerto Rico. Founded in 1973, the organization combines federal, state, and industry resources to help introduce U.S. manufacturers and producers to new markets and expand the demand for American food and agricultural products.

## 6. CONTINUE TO PURSUE CATALYST PROJECT FOR ALCOA SITE

The closure of the Alcoa plant announced in late 2008 was the impetus for the REV-UP planning process. Covering approximately 35,000 acres, the re-use of the facility remains top of mind for area officials. While it did not materialize, the announcement in October 2010 that Florida-based Velocita Holdings was considering a large portion of the Alcoa property for the construction of a "high-tech green" city is an example of the type of "catalyst project" that could revitalize the region.

The REV-UP Council should encourage regional leaders to continue to explore other options for the site.

### Strategies

- **Continue to monitor Alcoa's plans.** Team members should continue to participate in discussions regarding Alcoa's future plans for the site. Encouraging participation in Alcoa-related initiatives, such as the Community Advisory Panel to Alcoa (CAPARO), both as a way to monitor plans for the site and to facilitate community participation in the process.
- **Explore the potential for other uses.** Ideas for a catalyst project raised during the planning process should continue to be vetted:
  - *Energy projects.* The Alcoa property could be well-positioned for consideration as a site for renewable or alternative energy projects, both domestic and international. This use would complement the energy strategy outlined above. In addition, the continued operations of Alcoa's atomizer and the adjacent Lumina power plant would not necessarily be a downside for these types of projects as it might for other suggested uses. This idea could also include the potential for use of the land for demonstration projects related to Texas A&M research.
  - *Military range land.* Discussion with knowledgeable parties indicates the Alcoa property is too small and too far removed from Fort Hood to be of interest for training activities directly connected to the post. However, discussions should be pursued with the Army as to whether the site could

### RESOURCES: *Brownfield redevelopment*

There are a number of examples of brownfield redevelopment around the US that could inform the planning process for the reuse of the Alcoa site.

- The EPA has compiled a number of resources related to brownfields redevelopment, including tools and technical information, grants and funding opportunities, and success stories that can be accessed by topic or geographic region at <http://www.epa.gov/brownfields/success/index.htm>
- The Western Pennsylvania Brownfields Center at Carnegie Mellon offers a number of concise case studies, including the example provided on page 38 of this report. The profiles can be downloaded here: <http://www.cmu.edu/steinbrenner/brownfields/Case%20Studies/index.html>
- The State of Wisconsin published a report on its brownfields program in 2006. The report outlines innovations in brownfields management, as well as success stories. The report is available here: <http://dnr.wi.gov/org/aw/rr/archives/pubs/RR847.pdf>
- The State of Indiana has also published a number of case studies: <http://www.in.gov/ifa/brownfields/2352.htm>

be of interest for general training facilities in order to help meet their projected 4.5-million-acre training land shortfall. In addition, the site is within 60 miles of one of the Texas National Guard's two training facilities (Camp Swift) and is within a similar distance of the new US Armed Forces Reserve Center being planned for Bryan. It is possible these groups might be interested in the site for some ancillary activities.

- *Port of Houston.* In recent years, the Port of Houston Authority (PHA) has experienced dramatic growth in the volume of containerized imports from Asia, with this market now representing one-third of the total. The expansion of the Panama Canal (scheduled for completion in 2014) is expected to result in an even greater flow of containerized goods from Asia to ports in the Gulf of Mexico. Early discussions with the REV-UP Council suggested the Alcoa property might be attractive to PHA to help accommodate the additional growth in container traffic anticipated from the Canal expansion. Discussions with PHA officials indicate their expansion plans are focused on developing on-dock facilities. Rather than focus on logistics-related uses (see logistics discussion below), PHA officials thought the REV-UP Council should focus on increasing awareness of the Alcoa site among Houston officials involved in trade and development (such as the PHA, the Greater Houston Partnership, and local groups). Along with increased trade from Asia, the officials we spoke with had seen an uptick in interest in foreign direct investment opportunities among their trading partners. While GHP officials are charged with facilitating investment in the greater Houston area, they may encounter leads that are not a fit for the Houston area due to factors such as the region's non-attainment status, land costs, or other compatibility issues.
- *Logistics.* The region's road and freight network could present opportunities for logistics or distribution. However, the Alcoa site's distance from a major population center could make it less attractive for major logistics developments. This is particularly true for intermodal facilities. These mega-projects, which are designed to handle the transfer of goods between two or more modes of transport, have been experiencing significant growth in recent years. However, much of this growth is occurring on the outskirts of major metropolitan areas like Chicago, Dallas, San Antonio, Memphis, and Columbus, Ohio.
- *TEEX "Disaster City".* As part of its National Emergency Response and Rescue Training Center, the Texas Engineering Extension Service (TEEX) operates "Disaster City," dubbed the "Disneyland of Terror" in a recent *Der Spiegel* article (11/12/2010). Attracting more than 70,000 emergency workers annually from the United States and 57 countries, the 52-acre training ground provides the region with international recognition. If demand for training continues to grow and as new events are simulated, the Alcoa property could provide room for expansion.
- *Outdoor/indoor shooting range.* The National Rifle Association lists roughly 200 gun clubs in Texas alone, including one in Rockdale. Tapping into this market could help bring people into the region. Desert Wolf Tours (Arizona) is an example of a tourism attraction that combines desert adventure tours with firearms experiences. Public shooting ranges could complement the military range land idea discussed above. Camp Perry Military Reservation, a 640-acre training center located near Port Clinton, Ohio, is an example of a site that has both military and civilian uses. In addition to providing training services for a number of military installations, Camp Perry is home each year to the National Rifle Association's National Outdoor Rifle & Pistol Championships.

- o *Heavy manufacturing.* Clearly, the recruitment of a manufacturing operation to the site would be a positive outcome for the region. However, large-scale industrial projects — which have always been scarce — are even harder to come by given the level of global competition and current economic conditions. In addition, the country is dotted with “megasites” that have sprung up over the last decade, many of which were a response to the automotive expansion of the 1990s and early 2000s.
- o *Other.* A number of ideas emerged from the public input sessions. Some involved focusing development around a specific theme, such as a center for excellence in water management or a “wellness” oriented facility (similar to the “Biggest Loser” fitness resorts). Other suggested uses include parkland, camp facilities for scouting organizations, or conference and training facilities.

## 7. ENSURE INFRASTRUCTURE IS IN PLACE TO SUPPORT STRATEGIES

The success of the recommendations outlined above will depend on the availability of the necessary physical infrastructure. The REV-UP region is fortunate to have a strong transportation network, with interstate highways serving the metropolitan areas and a number of components of the Texas Trunk System serving the nonurban counties. In addition, the region is proximate to a number of the state's most heavily used freight rail corridors and within a reasonable distance of one of its busiest ports, the Port of Houston.

Along with these more traditional considerations, access to broadband has become an important piece of the infrastructure puzzle. Much of the region's population resides in the metropolitan counties where high-speed Internet access is readily available. However, residents in portions of the nonurban counties are still underserved. The availability of broadband connections will play an increasingly important role in the location decisions of businesses and individuals.

Water represents another critical consideration for the region. State water planning efforts are designed to match resource development with population growth. They do not address the issue of local water resource management. As a result, areas that appear to have adequate or even excess water resources may still face challenges because they lack the ability to move those resources to the areas where they are needed or to control the sale of the water to communities outside the region. Understanding the implications of this issue will be essential to the region's future development opportunities.

The primary role for the REV-UP Council in this area will be to monitor applicable state and local infrastructure projects and to serve as a resource for state and local officials.

### Strategies

- **Raise awareness of regional water issues.** The REV-UP Council members can help identify concerns within particular counties and raise awareness about issues associated with the control and sale of water rights. For example, debate over the filing of Senate Bill 332 in the most recent legislative session (82nd Regular) brought the subject of water rights into the headlines. The bill amends the Texas Water Code by stating the legislature “recognizes that a landowner owns the groundwater below the surface of the landowner's land as real property.” The bill, as ultimately passed, reaffirms Texas's “rule of capture” law, but did not go so far as to establish groundwater as a “vested” property right which would have affected the ability of the state's groundwater conservation districts to regulate water usage in a specific area. The law goes into effect on September 1, 2011.
- **Monitor funding for the regional transportation network.** The Texas Department of Transportation recently released its Statewide Long-Range Transportation Plan 2035 (SLRTP). The plan will guide TXDOT investments over a 24-year period. The REV-UP Council can help member communities identify and track projects of interest, such as:

- *Texas Trunk System funding.* Transportation projects are funded, in part, from federal and state fuel taxes. These revenues have declined due to the increased fuel efficiency of today's automobiles, a decrease in vehicle miles traveled (resulting from higher gas prices and the economic downturn), and inflation. In addition, the federal contribution to the state's highway fund has been decreasing steadily. These reduced revenues will continue to affect TxDOT's ability to fund road improvements in the years ahead which could negatively impact the Texas Trunk System.
  - *Gulf Coast Strategic Highway System.* Proposed as an upgrade of existing highways in Texas, Louisiana and Mississippi, the objective of the Gulf Coast Strategic Highway System is to provide better connectivity between Fort Bliss, Fort Hood and Fort Polk and the strategic ports at Corpus Christi and Beaumont. Implementation of this project would have a substantial impact on the region's highway access.
  - *Track freight rail and passenger rail projects.* According to *Planning* magazine (May/June 2010), the US Department of Transportation expects overall freight rail service to jump 75 percent by 2035, and other federal forecasts call for rail intermodal shipments to grow faster than long-haul trucking. The Obama administration has targeted \$8 billion in funds from the American Recovery and Reinvestment Act to plan, develop, and construct high-speed and intercity passenger rail projects in corridors around the country.
  - *Air service.* One limitation for business growth in the non-metropolitan areas is access to air service. The region is home to a number of general aviation facilities, as well as three commercial airports: Austin-Bergstrom International Airport (Austin), Easterwood Airport (College Station), and Killeen-Fort Hood Regional Airport (Killeen-Temple).
- **Support efforts to expand broadband access.** Helping to expand access to broadband across the region will be an important asset in attracting businesses and individuals. Texas was recently awarded 2 grants totaling \$8.9 million to collect data, create regional planning teams, and provide technical assistance. The REV-UP Council could help communities access this funding. The Council could also help provide information to communities about best practices for setting up wireless service networks, which can be a more cost-effective way to deploy Internet access in rural areas than fiber optic or cable wiring. These best practices can range from establishing public-private partnerships to granting rights-of-way to allow the placement of equipment on public spaces, such as street lights, traffic lights, and public buildings.
  - **Air quality.** As the threat of non-attainment status looms for most of the state's metropolitan areas, the issue of air quality should be a focus for public sector planning efforts. The REV-UP Council's role is likely to be limited to educating member communities about the potential impacts on local businesses and serving as a resource.

## Appendix: Occupational Detail

Figure A.1: HEALTHCARE

2010 *employment* in selected occupations directly or indirectly related to this sector's success

HEALTHCARE: Employment		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
29-1111	Registered nurses	5,334	2,971	1,124	35	43	127	29	1,005
31-1011	Home health aides	2,727	1,035	708	20	35	114	44	771
31-1012	Nursing aides, orderlies, & attendants	2,626	1,277	363	17	53	149	48	718
29-2031	Licensed practical & licensed vocational nurses	2,384	1,197	577	21	44	110	49	388
29-1039	Physicians & surgeons	1,745	852	416	14	*	22	*	429
31-5092	Medical assistants	1,206	352	361	*	*	*	*	471
43-6013	Medical secretaries	1,002	316	264	14	17	29	11	350
29-2052	Pharmacy technicians	999	330	238	*	*	18	*	389
31-9091	Dental assistants	766	236	176	*	*	*	*	329
11-9111	Medical & health services managers	699	372	154	*	*	16	*	139
29-2041	Emergency medical technicians & paramedics	697	121	265	*	15	11	21	261
29-1051	Pharmacists	629	248	111	*	*	12	*	247
29-2034	Radiologic technologists & technicians	526	269	154	*	*	14	*	81
29-2012	Medical & clinical laboratory technicians	520	247	215	*	*	*	*	42
29-2071	Medical records & health information technicians	457	240	100	*	*	10	*	95
29-2021	Dental hygienists	446	139	82	*	*	*	*	212
19-2041	Environmental scientists & specialists, including health	432	71	268	*	*	*	*	68
29-1123	Physical therapists	432	153	95	*	*	*	*	163
31-9099	Healthcare support workers, all other	428	221	102	*	*	*	*	91
29-2053	Psychiatric technicians	423	129	170	*	29	53	*	39
29-2011	Medical & clinical laboratory technologists	401	212	123	*	*	10	*	49
29-2055	Surgical technologists	344	193	83	*	*	*	*	62
29-1127	Speech-language pathologists	341	137	64	*	*	*	*	121
31-1013	Psychiatric aides	291	94	91	*	*	19	*	67

HEALTHCARE: Employment		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
29-1126	Respiratory therapists	262	133	50	*	*	*	*	68
21-1014	Mental health counselors	258	77	111	*	*	*	*	53
19-1042	Medical scientists, except epidemiologists	254	25	201	*	*	*	*	24
21-1022	Medical & public health social workers	242	89	54	*	*	*	*	82
29-1122	Occupational therapists	214	64	64	*	*	*	*	76
29-2099	Healthcare technologists & technicians, all other	199	89	59	*	*	*	*	44
29-1071	Physician assistants	198	103	42	*	*	*	*	50
29-2081	Opticians, dispensing	176	73	34	*	*	*	*	65
29-9011	Occupational health & safety specialists	169	74	66	*	*	*	*	21
29-1031	Dietitians & nutritionists	156	53	47	*	*	*	*	44
49-9062	Medical equipment repairers	154	41	22	*	*	*	*	84
31-9094	Medical transcriptionists	150	36	66	*	*	*	*	41
29-1021	Dentists, general	144	44	33	*	*	*	*	62
19-4091	Environmental science & protection technicians, incl. health	140	24	56	*	*	*	*	53
21-1091	Health educators	139	64	46	*	*	*	*	22
29-1129	Therapists, all other	139	54	31	*	*	*	*	48
21-1015	Rehabilitation counselors	133	53	27	*	*	*	*	45
29-2031	Cardiovascular technologists & technicians	131	53	51	*	*	*	*	17
31-9093	Medical equipment preparers	129	75	20	*	*	*	*	28
21-1023	Mental health & substance abuse social workers	126	32	44	*	*	*	*	45
29-1199	Health diagnosing & treating practitioners, all other	126	51	26	*	*	*	*	44
29-1041	Optometrists	122	34	15	*	*	*	*	66
31-9095	Pharmacy aides	115	41	13	*	*	*	*	55
31-2022	Physical therapist aides	111	31	48	*	*	*	*	23
29-2032	Diagnostic medical sonographers	108	47	31	*	*	*	*	26
29-9099	Healthcare practitioners & technical workers, all other	108	75	20	*	*	*	*	11
29-1011	Chiropractors	105	28	19	*	*	*	*	52
51-9083	Ophthalmic laboratory technicians	97	16	15	*	*	*	*	64
31-2021	Physical therapist assistants	90	37	18	*	*	*	*	27

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APPENDIX: OCCUPATIONAL DETAIL

HEALTHCARE: Employment		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
51-9081	Dental laboratory technicians	79	11	10	*	*	*	*	57
29-1081	Podiatrists	77	29	15	*	*	*	*	30
17-2111	Health & safety engineers, except mining safety	72	14	33	*	*	*	*	17
29-2054	Respiratory therapy technicians	54	26	15	*	*	*	*	10
29-1022	Oral & maxillofacial surgeons	51	15	*	*	*	*	*	26
29-1023	Orthodontists	45	14	*	*	*	*	*	23
29-1029	Dentists, all other specialists	45	20	*	*	*	*	*	17
51-9082	Medical appliance technicians	42	*	*	*	*	*	*	26
29-2033	Nuclear medicine technologists	41	20	11	*	*	*	*	*
31-2012	Occupational therapist aides	41	19	*	*	*	*	*	11
29-2051	Dietetic technicians	40	16	*	*	*	*	*	11
29-2091	Orthotists & prosthetists	39	15	*	*	*	*	*	14
31-2011	Occupational therapist assistants	39	17	*	*	*	*	*	*
29-9012	Occupational health & safety technicians	37	12	13	*	*	*	*	*
17-2031	Biomedical engineers	35	*	12	*	*	*	*	19
29-1124	Radiation therapists	35	17	11	*	*	*	*	*
29-1121	Audiologists	29	10	*	*	*	*	*	*
29-1024	Prosthodontists	28	*	*	*	*	*	*	14
29-1125	Recreational therapists	27	11	*	*	*	*	*	*
19-1041	Epidemiologists	22	*	14	*	*	*	*	*
53-3011	Ambulance drivers & attendants, except EMTs	14	*	*	*	*	*	*	*

\* fewer than 10 jobs in this occupation and county  
SOURCE: EMSI Complete Employment - 2nd Quarter 2010

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APPENDIX: OCCUPATIONAL DETAIL

Figure A.2: HEALTHCARE

2010 location quotients for selected occupations directly or indirectly related to this sector's success

HEALTHCARE: Location Quotients		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
29-2053	Psychiatric technicians	2.07	1.65	3.84	*	7.39	11.31	*	0.59
31-2012	Occupational therapist aides	1.74	2.12	*	*	*	*	*	1.38
19-2041	Environmental scientists & specialists, including health	1.56	0.67	4.45	*	*	*	*	0.74
19-4091	Environmental science & protection technicians, incl. health	1.51	0.67	2.80	*	*	*	*	1.76
29-2055	Surgical technologists	1.30	1.89	1.44	*	*	*	*	0.72
49-9062	Medical equipment repairers	1.25	0.86	0.82	*	*	*	*	2.09
29-2054	Respiratory therapy technicians	1.24	1.53	1.61	*	*	*	*	0.73
29-2012	Medical & clinical laboratory technicians	1.16	1.44	2.22	*	*	*	*	0.29
29-9012	Occupational health & safety technicians	1.16	1.01	1.91	*	*	*	*	*
19-1041	Epidemiologists	1.14	*	3.47	*	*	*	*	*
29-2041	Emergency medical technicians & paramedics	1.11	0.50	1.95	*	1.26	0.77	2.26	1.27
29-9011	Occupational health & safety specialists	1.11	1.26	2.01	*	*	*	*	0.42
29-2051	Licensed practical & licensed vocational nurses	1.10	1.45	1.23	0.62	1.04	2.24	1.53	0.55
29-1022	Oral & maxillofacial surgeons	1.08	0.83	*	*	*	*	*	1.65
29-2052	Pharmacy technicians	1.04	0.89	1.14	*	*	0.80	*	1.23
51-9083	Ophthalmic laboratory technicians	1.04	0.45	0.75	*	*	*	*	2.09
17-2111	Health & safety engineers, except mining safety	1.01	0.53	2.14	*	*	*	*	0.74
29-1029	Dentists, all other specialists	0.96	1.11	*	*	*	*	*	1.12
29-2071	Medical records & health information technicians	0.93	1.27	0.93	*	*	0.92	*	0.61
51-9082	Medical appliance technicians	0.93	*	*	*	*	*	*	1.72
29-1023	Orthodontists	0.92	0.73	*	*	*	*	*	1.44
29-2031	Cardiovascular technologists & technicians	0.91	1.06	1.65	*	*	*	*	0.36
29-2091	Orthotists & prosthetists	0.88	0.91	*	*	*	*	*	0.99
31-8091	Dental assistants	0.88	0.71	0.94	*	*	*	*	1.16
29-2021	Dental hygienists	0.87	0.71	0.74	*	*	*	*	1.25
31-1011	Home health aides	0.87	0.87	1.05	0.41	0.58	1.60	0.95	0.76
29-2034	Radiologic technologists & technicians	0.85	1.13	1.15	*	*	0.99	*	0.40

HEALTHCARE: Location Quotients		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
31-2022	Physical therapist aides	0.85	0.62	1.71	*	*	*	*	0.54
29-1071	Physician assistants	0.84	1.14	0.83	*	*	*	*	0.65
29-1126	Respiratory therapists	0.84	1.12	0.75	*	*	*	*	0.67
29-1041	Optometrists	0.83	0.59	0.46	*	*	*	*	1.38
29-2081	Opticians, dispensing	0.83	0.91	0.74	*	*	*	*	0.93
19-1042	Medical scientists, except epidemiologists	0.82	0.21	2.99	*	*	*	*	0.24
29-2011	Medical & clinical laboratory technologists	0.82	1.14	1.16	*	*	0.91	*	0.31
31-9092	Medical assistants	0.82	0.62	1.13	*	*	*	*	0.97
29-1024	Prosthodontists	0.81	*	*	*	*	*	*	1.23
29-1051	Pharmacists	0.80	0.82	0.65	*	*	0.66	*	0.99
17-2031	Biomedical engineers	0.78	*	1.25	*	*	*	*	1.30
29-1124	Radiation therapists	0.78	0.97	1.12	*	*	*	*	*
29-2099	Healthcare technologists & technicians, all other	0.78	0.91	1.08	*	*	*	*	0.52
29-1127	Speech-language pathologists	0.77	0.80	0.67	*	*	*	*	0.83
31-9093	Medical equipment preparers	0.77	1.16	0.55	*	*	*	*	0.51
11-9111	Medical & health services managers	0.76	1.05	0.77	*	*	0.78	*	0.46
29-1031	Dietitians & nutritionists	0.75	0.73	1.04	*	*	*	*	0.66
31-9099	Healthcare support workers, all other	0.74	0.59	0.81	*	*	*	*	0.48
21-1091	Health educators	0.72	0.86	1.14	*	*	*	*	0.35
21-1014	Mental health counselors	0.71	0.55	1.40	*	*	*	*	0.45
29-1111	Registered nurses	0.70	1.01	0.68	0.29	0.29	0.73	0.26	0.40
29-2032	Diagnostic medical sonographers	0.70	0.81	0.92	*	*	*	*	0.52
29-1069	Physicians & surgeons	0.69	0.87	0.76	0.35	*	0.39	*	0.52
29-1123	Physical therapists	0.69	0.64	0.71	*	*	*	*	0.80
29-1081	Podiatrists	0.68	0.67	0.61	*	*	*	*	0.82
29-1129	Therapists, all other	0.68	0.69	0.70	*	*	*	*	0.72
31-1013	Psychiatric aides	0.68	0.58	0.93	*	*	1.95	*	0.48
29-1122	Occupational therapists	0.66	0.51	0.90	*	*	*	*	0.71
51-9081	Dental laboratory technicians	0.66	0.24	0.39	*	*	*	*	1.44

HEALTHCARE: Location Quotients		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
31-9095	Pharmacy aides	0.65	0.60	0.32	*	*	*	*	0.95
29-9099	Healthcare practitioners & technical workers, all other	0.64	1.16	0.56	*	*	*	*	0.20
29-2033	Nuclear medicine technologists	0.62	0.78	0.79	*	*	*	*	*
43-6013	Medical secretaries	0.60	0.50	0.73	0.54	0.53	0.76	0.44	0.64
31-1012	Nursing aides, orderlies, & attendants	0.59	0.75	0.38	0.25	0.62	1.48	0.73	0.50
29-1011	Chiropractors	0.58	0.41	0.49	*	*	*	*	0.88
21-1022	Medical & public health social workers	0.56	0.54	0.57	*	*	*	*	0.58
29-2051	Dietetic technicians	0.56	0.58	*	*	*	*	*	0.48
31-9094	Medical transcriptionists	0.56	0.35	1.13	*	*	*	*	0.46
29-1021	Dentists, general	0.51	0.41	0.54	*	*	*	*	0.67
29-1199	Health diagnosing & treating practitioners, all other	0.51	0.54	0.49	*	*	*	*	0.54
31-2011	Occupational therapist assistants	0.50	0.57	*	*	*	*	*	*
29-1121	Audiologists	0.49	0.46	*	*	*	*	*	*
31-2021	Physical therapist assistants	0.48	0.52	0.45	*	*	*	*	0.43
29-1125	Recreational therapists	0.42	0.43	*	*	*	*	*	*
21-1015	Rehabilitation counselors	0.35	0.35	0.32	*	*	*	*	0.36
21-1023	Mental health & substance abuse social workers	0.31	0.20	0.49	*	*	*	*	0.33
53-3011	Ambulance drivers & attendants, except EMTs	0.25	*	*	*	*	*	*	*

\* employment in this occupation and county too small to measure the location quotient effectively  
SOURCE: EMSI Complete Employment - 2nd Quarter 2010

Figure A.3: TOURISM

2010 employment in selected occupations directly or indirectly related to this sector's success

TOURISM: Employment		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
35-3021	Combined food preparation & serving workers, incl. fast food	9,551	3,274	2,131	64	103	123	95	3,759
35-3031	Waiters & waitresses	6,834	1,851	1,925	77	57	53	81	2,781
37-2011	Janitors & cleaners, except maids & housekeeping cleaners	5,290	1,692	1,716	69	73	124	69	1,577
37-2012	Maids & housekeeping cleaners	4,124	1,660	1,034	52	78	126	61	1,112
35-1012	First-line supervisors of food preparation & serving workers	3,003	904	809	41	46	62	47	1,095
35-2014	Cooks, restaurant	2,582	542	1,105	46	24	21	46	797
35-3022	Counter attendants, cafeteria, food concession, & coffee shop	1,473	416	387	10	27	32	14	587
35-2011	Cooks, fast food	1,367	411	401	12	35	43	18	444
11-9051	Food service managers	1,233	404	273	39	22	41	35	419
35-9021	Dishwashers	1,167	231	203	*	12	13	*	690
35-2021	Food preparation workers	1,159	250	411	19	18	23	26	412
35-3011	Bartenders	1,031	264	332	12	*	17	17	360
35-9011	Dining room & cafeteria attendants & bartender helpers	959	170	248	*	*	*	12	503
35-2012	Cooks, institution & cafeteria	935	415	158	*	26	46	14	267
37-1011	First-line supervisors of housekeeping & janitorial workers	894	298	245	25	19	32	26	246
35-9031	Hosts & hostesses, restaurant, lounge, & coffee shop	768	131	227	*	*	*	*	385
39-3091	Amusement & recreation attendants	588	197	158	*	*	*	*	211
39-9032	Recreation workers	574	115	82	*	11	20	*	335
27-2042	Musicians & singers	573	164	123	12	12	15	*	240
27-2022	Coaches & scouts	560	148	214	*	*	*	*	167
43-4081	Hotel, motel, & resort desk clerks	557	264	162	*	*	*	10	101
27-2041	Music directors & composers	522	152	117	12	12	15	*	210
37-1012	First-line supervisors of landscaping & groundskeeping workers	468	140	105	*	*	14	*	186
35-2015	Cooks, short order	437	128	70	*	12	13	*	206
13-1121	Meeting & convention planners	387	49	195	*	*	*	*	123
11-9081	Lodging managers	299	95	72	12	11	14	28	65
35-1011	Chefs & head cooks	265	95	38	*	*	*	*	114

TOURISM: Employment		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
33-9092	Lifeguards, ski patrol, & other recreational protective svc workers	259	78	63	*	*	*	*	108
11-9151	Social & community service managers	235	72	58	*	*	*	*	91
27-1012	Craft artists	213	61	38	*	*	*	*	98
35-3041	Food servers, nonrestaurant	203	63	42	*	*	*	*	87
39-3031	Ushers, lobby attendants, & ticket takers	193	62	62	*	*	*	*	65
35-9099	Food preparation & serving related workers, all other	180	55	50	*	*	*	*	65
27-2012	Producers & directors	174	55	47	*	*	*	*	66
27-2011	Actors	163	40	33	*	*	*	*	60
27-2099	Entertainers & performers, sports & related workers, all other	154	46	30	*	*	*	*	65
27-2021	Athletes & sports competitors	110	27	19	*	*	*	*	58
27-2023	Umpires, referees, & other sports officials	103	30	23	*	*	*	*	45
41-3041	Travel agents	92	24	22	*	*	*	*	45
39-6021	Tour guides & escorts	80	23	17	*	*	*	*	34
43-4181	Reservation & transportation ticket agents & travel clerks	80	34	*	*	*	*	*	34
35-2019	Cooks, all other	61	22	12	*	*	*	*	20
27-2032	Choreographers	55	13	20	*	*	*	*	19
49-3092	Recreational vehicle service technicians	47	13	*	*	*	*	*	25
35-2013	Cooks, private household	43	15	*	*	*	*	*	14
27-2031	Dancers	32	*	*	*	*	*	*	13
39-6011	Baggage porters & bellhops	30	13	*	*	*	*	*	15
39-6022	Travel guides	29	*	*	*	*	*	*	11
25-4012	Curators	26	*	12	*	*	*	*	*
39-6012	Concierges	26	*	*	*	*	*	*	14
25-4013	Museum Technicians & Conservators	19	*	*	*	*	*	*	*
39-3019	Gaming service workers, all other	18	*	*	*	*	*	*	*
11-9071	Gaming managers	16	*	*	*	*	*	*	*

\* fewer than 10 jobs in this occupation and county  
SOURCE: EMSI Complete Employment - 2nd Quarter 2010

Figure A.4: TOURISM

2010 location quotients for selected occupations directly or indirectly related to this sector's success

TOURISM: Location Quotients		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
13-1121	Meeting & convention planners	1.70	0.56	3.95	*	*	*	*	1.65
49-3092	Recreational vehicle service technicians	1.29	0.95	*	*	*	*	*	2.08
35-9099	Food preparation & serving related workers, all other	1.25	1.00	1.60	*	*	*	*	1.38
35-3021	Combined food preparation & serving workers, incl. fast food	1.22	1.09	1.26	0.52	0.68	0.69	0.83	1.47
35-1012	First-line sups/mgrs. of food preparation & serving workers	1.18	0.93	1.47	1.01	0.93	1.08	1.23	1.31
37-1012	First-line sups/mgrs. of landscaping & groundskeeping workers	1.09	0.85	1.13	*	*	1.39	*	1.32
35-3022	Counter attendants, cafeteria, food concession, & coffee shop	1.04	0.76	1.26	*	0.97	0.98	0.63	1.26
35-3031	Waiters & waitresses	1.03	0.73	1.33	0.73	0.44	0.35	0.82	1.27
35-2014	Cooks, restaurant	0.99	0.54	1.95	1.12	0.46	0.35	1.19	0.93
11-9051	Food service managers	0.90	0.77	0.92	1.79	0.62	1.32	1.73	0.93
35-2011	Cooks, fast food	0.86	0.68	1.17	*	1.18	1.20	0.78	0.88
43-4031	Hotel, motel, & resort desk clerks	0.86	1.08	1.15	*	*	*	1.06	0.47
35-2015	Cooks, short order	0.85	0.65	0.63	*	1.15	1.14	*	1.22
27-2022	Coaches & scouts	0.83	0.57	1.47	*	*	*	*	0.76
37-2011	Janitors & cleaners, except maids & housekeeping cleaners	0.83	0.68	1.24	0.68	0.59	0.85	0.73	0.76
27-2041	Music directors & composers	0.82	0.62	0.85	1.15	0.94	1.01	*	1.01
35-9011	Dining room & cafeteria attendants & bartender helpers	0.82	0.38	0.98	*	*	*	0.66	1.32
35-9031	Hosts & hostesses, restaurant, lounge, & coffee shop	0.80	0.35	1.09	*	*	*	*	1.22
25-4012	Curators	0.79	*	1.66	*	*	*	*	*
39-3091	Amusement & recreation attendants	0.79	0.69	0.98	*	*	*	*	0.87
11-9081	Lodging managers	0.78	0.65	0.87	1.94	1.46	1.61	5.00	0.53
35-2012	Cooks, institution & cafeteria	0.78	0.90	0.61	*	1.13	1.68	0.77	0.68
35-9021	Dishwashers	0.78	0.40	0.63	*	0.42	0.39	*	1.41
27-2032	Choreographers	0.77	0.47	1.26	*	*	*	*	0.81
35-1011	Chefs & head cooks	0.77	0.74	0.51	*	*	*	*	1.01
27-2042	Musicians & singers	0.76	0.57	0.75	1.02	0.83	0.89	*	0.87
33-9092	Lifeguards, ski patrol, & other recreational protective svc workers	0.75	0.59	0.83	*	*	*	*	0.93

TOURISM: Location Quotients		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
35-2013	Cooks, private household	0.75	0.67	*	*	*	*	*	0.74
37-1011	First-line supervisors, of housekeeping & janitorial workers	0.75	0.65	0.95	1.32	0.60	1.19	1.44	0.63
27-1012	Craft artists	0.71	0.53	0.59	*	*	*	*	0.98
27-2021	Athletes & sports competitors	0.71	0.45	0.57	*	*	*	*	1.14
35-3011	Bartenders	0.70	0.47	1.05	0.50	*	0.49	0.80	0.79
37-2012	Maids & housekeeping cleaners	0.65	0.63	0.75	0.52	0.63	0.87	0.65	0.53
39-3031	Ushers, lobby attendants, & ticket takers	0.65	0.54	0.98	*	*	*	*	0.68
27-2023	Umpires, referees, & other sports officials	0.64	0.48	0.65	*	*	*	*	0.85
39-6021	Tour guides & escorts	0.63	0.48	0.60	*	*	*	*	0.82
35-2019	Cooks, all other	0.61	0.53	0.58	*	*	*	*	0.61
39-6022	Travel guides	0.60	*	*	*	*	*	*	0.69
25-4013	Museum Technicians & Conservators	0.59	*	*	*	*	*	*	*
27-2011	Actors	0.58	0.37	0.54	*	*	*	*	0.86
11-9071	Gaming managers	0.56	*	*	*	*	*	*	*
27-2031	Dancers	0.56	*	*	*	*	*	*	0.66
11-9151	Social & community service managers	0.55	0.44	0.63	*	*	*	*	0.65
27-2099	Entertainers & performers, sports & related workers, all other	0.55	0.43	0.50	*	*	*	*	0.71
39-9032	Recreation workers	0.55	0.29	0.37	*	0.54	0.87	*	0.98
27-2012	Producers & directors	0.46	0.38	0.57	*	*	*	*	0.53
35-2021	Food preparation workers	0.46	0.26	0.76	0.48	0.38	0.40	0.69	0.60
39-3019	Gaming service workers, all other	0.45	*	*	*	*	*	*	*
39-6012	Concierges	0.43	*	*	*	*	*	*	0.70
35-3041	Food servers, nonrestaurant	0.36	0.29	0.35	*	*	*	*	0.47
41-3041	Travel agents	0.29	0.20	0.32	*	*	*	*	0.44
39-6011	Baggage porters & bellhops	0.22	0.24	*	*	*	*	*	0.33
43-4181	Reservation & transportation ticket agents & travel clerks	0.18	0.21	*	*	*	*	*	0.24

\* employment in this occupation and county too small to measure the location quotient effectively  
SOURCE: EMSI Complete Employment - 2nd Quarter 2010

Figure A.5: ENERGY PRODUCTION & EFFICIENCY  
2010 employment in selected occupations directly or indirectly related to this sector's success

ENERGY: Employment		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
49-9021	Heating, A/C, & refrigeration mechanics & installers	1,009	305	262	12	31	27	*	365
47-5071	Roustabouts, oil & gas	673	*	338	99	105	*	*	13
19-2041	Environmental scientists & specialists, including health	432	71	268	*	*	*	*	68
47-5013	Service unit operators, oil, gas, & mining	375	*	200	59	90	*	*	16
19-2042	Geoscientists, except hydrologists & geographers	322	25	197	19	*	*	*	65
49-8051	Electrical power-line installers & repairers	253	51	19	*	19	17	22	123
47-5081	Helpers, extraction workers	188	*	83	24	24	*	11	33
47-5011	Derrick operators, oil & gas	174	*	103	31	25	*	*	*
47-2121	Glaziers	158	42	23	*	*	*	*	83
47-5012	Rotary drill operators, oil & gas	149	*	87	26	21	*	*	10
51-8093	Petroleum pump system operators, refinery ops, & gaugers	141	29	58	33	*	*	14	*
17-2081	Environmental engineers	140	23	46	*	*	*	*	67
19-4091	Environmental science & protection technicians, incl. health	140	24	56	*	*	*	*	53
17-2171	Petroleum engineers	131	*	71	19	*	*	*	18
19-4041	Geological & petroleum technicians	113	*	70	16	*	*	*	17
47-5021	Earth drillers, except oil & gas	106	13	39	11	11	*	*	21
19-2043	Hydrologists	75	11	21	*	*	*	*	26
47-2132	Insulation workers, mechanical	73	15	14	*	*	*	*	34
47-2131	Insulation workers, floor, ceiling, & wall	68	13	*	*	*	*	*	40
17-3025	Environmental engineering technicians	66	14	28	*	*	*	*	21
47-5089	Extraction workers, all other	62	*	22	*	*	*	*	18
17-2151	Mining & geological engineers, incl. mining safety engineers	56	*	19	*	*	*	*	16
51-8092	Gas plant operators	34	*	*	*	*	*	*	*

\* fewer than 10 jobs in this occupation and county  
SOURCE: EMSI Complete Employment - 2nd Quarter 2010

Figure A.6: ENERGY PRODUCTION &amp; EFFICIENCY

2010 location quotients for selected occupations directly or indirectly related to this sector's success

ENERGY: Location Quotients		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
47-5013	Service unit operators, oil, gas, & mining	3.20	*	7.91	32.03	39.79	*	*	0.41
47-5071	Roustabouts, oil & gas	3.07	*	8.35	33.46	29.00	*	*	0.22
19-4041	Geological & petroleum technicians	2.73	*	7.73	24.63	*	*	*	1.29
19-2042	Geoscientists, except hydrologists & geographers	2.50	0.51	7.05	9.54	*	*	*	1.53
47-5011	Derrick operators, oil & gas	2.43	*	6.64	27.21	17.97	*	*	*
47-5031	Helpers, extraction workers	2.07	*	4.23	16.64	13.60	*	7.91	1.10
47-5012	Rotary drill operators, oil & gas	1.78	*	4.76	19.43	13.13	*	*	0.37
19-2041	Environmental scientists & specialists, including health	1.56	0.67	4.45	*	*	*	*	0.74
19-4091	Environmental science & protection technicians, incl. health	1.51	0.67	2.80	*	*	*	*	1.76
47-5021	Earth drillers, except oil & gas	1.46	0.46	2.51	9.41	7.59	*	*	0.60
17-2151	Mining & geological engineers, incl. mining safety engineers	1.43	*	2.24	*	*	*	*	1.29
47-5099	Extraction workers, all other	1.40	*	2.31	*	*	*	*	1.23
17-2171	Petroleum engineers	1.39	*	3.48	12.91	*	*	*	0.58
19-2043	Hydrologists	1.28	0.49	1.68	*	*	*	*	1.37
49-9021	Heating, A/C, & refrigeration mechanics & installers	1.13	0.89	1.35	0.85	1.78	1.31	*	1.25
51-8093	Petroleum pump system operators, refinery ops, & gaugers	1.07	0.57	2.02	15.78	*	*	7.21	*
17-3025	Environmental engineering technicians	1.06	0.53	2.11	*	*	*	*	1.01
47-2121	Glaziers	1.06	0.74	0.72	*	*	*	*	1.69
17-2031	Environmental engineers	0.94	0.40	1.43	*	*	*	*	1.38
47-2131	Insulation workers, floor, ceiling, & wall	0.86	0.45	*	*	*	*	*	1.55
47-2132	Insulation workers, mechanical	0.83	0.46	0.77	*	*	*	*	1.20
51-8092	Gas plant operators	0.83	*	*	*	*	*	*	*
49-9051	Electrical power-line installers & repairers	0.78	0.41	0.27	*	3.03	2.34	4.51	1.17

\* employment in this occupation and county too small to measure the location quotient effectively  
 SOURCE: EMSI Complete Employment - 2nd Quarter 2010

Figure A.7: AGRICULTURE

2010 employment in selected occupations directly or indirectly related to this sector's success

AGRICULTURE: Employment		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
11-9012	Farmers & ranchers	9,657	1,673	984	1,180	1,302	1,533	1,129	1,855
11-9011	Farm, ranch, & other agricultural managers	2,291	381	257	265	302	358	283	432
45-209A	Miscellaneous agricultural workers	1,329	169	268	105	140	220	195	231
19-4011	Agricultural & food science technicians	547	*	517	*	*	*	*	12
29-2056	Veterinary technologists & technicians	486	62	249	*	*	*	15	147
31-9096	Veterinary assistants & laboratory animal caretakers	402	103	151	*	10	*	*	114
29-1131	Veterinarians	338	79	102	*	*	*	*	131
19-1011	Animal scientists	153	*	138	*	*	*	*	*
45-1099	Supervisors, farming, fishing, & forestry workers	93	12	31	*	*	11	11	15
45-3011	Fishers & related fishing workers	81	22	13	*	*	*	*	34
49-3041	Farm equipment mechanics	80	16	18	*	*	*	*	30
45-2041	Graders & sorters, agricultural products	51	10	16	*	*	*	*	*
45-2011	Agricultural inspectors	46	10	30	*	*	*	*	*
45-2021	Animal breeders	41	*	*	*	*	*	*	*
19-1013	Soil & plant scientists	39	*	18	*	*	*	*	*
25-9021	Farm & home management advisors	30	*	15	*	*	*	*	*
33-3031	Fish & game wardens	26	*	21	*	*	*	*	*
13-1021	Purchasing agents & buyers, farm products	14	*	*	*	*	*	*	*
19-1012	Food scientists & technologists	14	*	*	*	*	*	*	*

\* fewer than 10 jobs in this occupation and county  
 SOURCE: EMSI Complete Employment - 2nd Quarter 2010

Figure A.8: AGRICULTURE

2010 location quotients for selected occupations directly or indirectly related to this sector's success

AGRICULTURE: Location Quotients		7-county region	BELL	BRAZOS	BURLESON	LEE	MILAM	ROBERTSON	WILLIAMSON
3-digit SOC code & description									
19-1011	Animal scientists	11.74	*	48.87	*	*	*	*	*
19-4011	Agricultural & food science technicians	9.31	*	40.62	*	*	*	*	0.65
11-9012	Farmers & ranchers	2.23	1.01	1.05	17.25	15.46	15.53	17.53	1.31
29-2056	Veterinary technologists & technicians	2.09	0.70	4.95	*	*	*	4.27	1.93
11-9011	Farm, ranch, & other agricultural managers	1.68	0.73	0.87	12.38	11.39	11.87	14.00	0.97
31-9099	Veterinary assistants & laboratory animal caretakers	1.68	1.17	2.92	*	2.23	*	*	1.46
29-1131	Veterinarians	1.54	0.94	2.14	*	*	*	*	1.62
45-2021	Animal breeders	1.51	*	*	*	*	*	*	*
33-3031	Fish & game wardens	1.20	*	4.58	*	*	*	*	*
45-2011	Agricultural inspectors	1.03	0.60	3.10	*	*	*	*	*
19-1013	Soil & plant scientists	0.91	*	1.83	*	*	*	*	*
49-3041	Farm equipment mechanics	0.79	0.41	0.83	*	*	*	*	0.91
25-9021	Farm & home management advisors	0.67	*	1.58	*	*	*	*	*
45-1069	Supervisors, farming, fishing, & forestry workers	0.58	0.19	0.91	*	*	*	4.79	0.28
45-209A	Miscellaneous agricultural workers	0.57	0.19	0.53	2.88	3.11	4.17	5.69	0.30
19-1012	Food scientists & technologists	0.37	*	*	*	*	*	*	*
45-2041	Graders & sorters, agricultural products	0.37	0.19	0.53	*	*	*	*	*
13-1021	Purchasing agents & buyers, farm products	0.32	*	*	*	*	*	*	*
45-3011	Fishers & related fishing workers	0.32	0.22	0.23	*	*	*	*	0.41

\* employment in this occupation and county too small to measure the location quotient effectively  
 SOURCE: EMSI Complete Employment - 2nd Quarter 2010

