

# Texas Industry Cluster Initiative

*A State of the Workforce Report*



**Texas Workforce Investment Council**  
**June 2007**

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## ***State of the Workforce Report***

### Texas Industry Cluster Initiative

#### **Introduction**

The Texas Workforce Investment Council (Council) was created in 1993 by the 73<sup>rd</sup> Texas Legislature. The Council is charged with promoting the development of a well-educated, highly skilled workforce for the State of Texas, and assisting the Governor and Legislature with strategic planning for and evaluation of the Texas workforce development system (system). The system is comprised of eight state agencies and the local organizations through which they administer workforce programs and initiatives.

The Council is charged in state and federal law with fulfilling a number of mandates for the system, including serving as the State Workforce Investment Board under the federal Workforce Investment Act (WIA). Council mandates can be organized into four primary functions: 1) system strategic planning; 2) system evaluation; 3) system research and continuous improvement; and 4) review of state and local workforce plans. Council products include a strategic plan for the workforce system, annual evaluation reports and resource publications, occasional papers and reports on critical and emerging issues, and recommendations to the Governor and Legislature.

This occasional paper is a State of the Workforce report on the status of regional industry cluster initiatives in Texas, and the degree to which they align to and complement the statewide target industry cluster initiative announced by Governor Rick Perry in October 2004. The report summarizes the results of a survey administered by the Council to local workforce development boards and the Metro 8 Chambers of Commerce<sup>1</sup>. These organizations were surveyed because of their regional focus and their mission to build broad-based partnerships that strengthen linkages between workforce, education and economic development.

#### **Overview of the Texas Target Industry Cluster Initiative**

On October 20, 2004, Governor Perry announced the Texas Target Industry Cluster Initiative, a statewide coordinated, market-driven economic development strategy, focusing on areas in which Texas has the greatest potential for strong economic growth. The Council participated in research and development of the initiative as part of the implementation of the cluster-related long term objective in *Destination 2010 – FY2004-FY2009 Strategic Plan for the Texas Workforce Development System*.

The target industry clusters were derived from the Texas cluster mapping work of Dr. Michael Porter of the Institute for Strategy and Competitiveness at Harvard Business School and from the recommendation of Dr. Ray Perryman, Founder and President of The Perryman Group, in “Texas Our Texas”. Senate Bill (SB) 275, 78<sup>th</sup> Texas Legislature, also identified high-priority industry clusters and called for a statewide strategy to attract economic growth and competitiveness. As a result of this legislation, Texas was required to identify these industry clusters and develop strategies to address economic growth and quality of life issues.

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<sup>1</sup> The chambers of commerce of the eight largest cities in Texas – Arlington, Austin, Corpus Christi, Dallas, El Paso, Fort Worth, Houston and San Antonio.

The target industry clusters (and related sub-clusters) were identified by analyzing the intersections of Dr. Porter's and Dr. Perryman's recommended actions regarding opportunities for industrial growth. The industry clusters included in the statewide initiative include:

- Advanced Technologies and Manufacturing
  - Nanotechnology and Materials
  - Micro-electromechanical Systems
  - Semiconductor Manufacturing
  - Automotive Manufacturing
- Aerospace and Defense
- Biotechnology and Life Sciences
- Information and Computer Technology
  - Communications Equipment
  - Computing Equipment and Semiconductors
  - Information Technology
- Petroleum Refining and Chemical Products
- Energy
  - Oil and Gas Production
  - Power Generation and Transmission
  - Manufactured Energy Systems

As noted in a Texas Industry Cluster Initiative background document on the Texas Workforce Commission (TWC) website ([www.twc.state.tx.us/news/ticluster.html](http://www.twc.state.tx.us/news/ticluster.html)), these industry clusters “were selected on the basis of industry linkages and cluster analysis, occupational workforce requirements and availability, support requirements, and an evaluation of future industrial prospects.” While these clusters are not the only areas of potential growth, they represent those that offer the best promise of success for overall economic growth and for bringing the high-paying jobs of the future to Texas based on current competitive position. It is also important to note that the Business Services and (Heavy) Construction clusters support all other cluster development and growth. If target competitive clusters are expanded, these two will naturally expand on the supplier side. Additional information on the rationale for selection is located at [www.governor.state.tx.us/divisions/press/initiatives/Industry\\_Cluster/Industry\\_Cluster\\_SP/view](http://www.governor.state.tx.us/divisions/press/initiatives/Industry_Cluster/Industry_Cluster_SP/view).

In 2005, teams representing each of the target industry clusters submitted to the Governor an assessment of the opportunities and challenges in their cluster, as well as recommendations for actions necessary to increase the industry's competitiveness. Teams were comprised of leaders and experts from private sector organizations, key state agencies, local governments, local economic development organizations, and higher education and training institutions. A number of cross-cluster recommendations emerged from the assessments, including the critical need for a skilled, educated workforce. In the cluster team reports, industry leaders expressed concern over current and future shortages in both the quantity and quality of skilled workers, noting that they face a “demographic cliff”, compounded by impending retirements and insufficient numbers of graduates from secondary and postsecondary education institutions.

In Fiscal Year 2006, TWC, the Texas Education Agency and the Texas Higher Education Coordinating Board worked together to develop action plans to address the teams' priority recommendations regarding improvements to the education and skills of Texas' current and future workforce. The Council continued to support the industry cluster initiative by facilitating the development of agency action plans and providing other assistance as requested.

## **Survey Methodology**

In November 2006, the Council sent introductory letters to the Executive Directors of the 28 local workforce development boards (local boards) and the Presidents of the Metro 8 Chambers of Commerce (Metro 8 Chambers), requesting their participation in an upcoming survey about the status of regional industry cluster initiatives in their area. Following the letter, the Council sent each local board and Metro 8 Chamber an electronic survey (Appendix A) by email.

Survey questions included:

1. *Indicate the chamber of commerce/local workforce development board you represent.*
2. *Have you performed an assessment of your region and as a result, identified specific industry clusters for targeted growth?*
3. *If your region has not identified industry clusters, do you plan to in the future?*
4. *Are you planning or implementing any other strategies to promote regional economic growth?*
5. *Are you aware of any other entity in your region that has undertaken the identification of industry clusters?*
6. *How do you identify your region?*
- 7 – 12. *Indicate which, if any, of the six Governor’s Statewide Target Industry Clusters (and related sub-clusters) have been identified as target industry clusters for your region.*
13. *Indicate any other industry clusters that have been identified in your region.*
14. *Did your staff identify the industry cluster(s) in your area, or did you engage an external consultant/specialist?*
15. *What methodology was used to identify the industry clusters in your region?*
16. *What other partners/organizations are involved in your cluster initiative?*
17. *What specific strategies and actions are or will you and your partners use to strengthen those clusters?*
18. *List the barriers or issues your region faces as you work to strengthen your regional economy and the identified clusters.*

## **Summary of Survey Responses**

Local board and Metro 8 Chamber responses to the survey are summarized below. Responses are listed sequentially by question.

1. *Indicate the chamber of commerce/local workforce development board you represent.*

The Council received survey responses from all 28 local boards. The following Metro 8 Chambers responded to the survey – Arlington, Corpus Christi, Greater Dallas, Greater El Paso, Greater Houston Partnership, and Greater San Antonio. The Fort Worth and Greater Austin chambers did not respond and the Corpus Christi Chamber of Commerce did not complete all applicable questions in the survey.

2. *Have you performed an assessment of your region and as a result, identified specific industry clusters for targeted growth?*

Of the 28 local boards surveyed, 26 have completed an assessment of their region and have identified specific industry clusters for targeted growth. Of the six Metro 8 Chambers that participated in the survey, five completed an assessment of their region<sup>2</sup>.

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<sup>2</sup> The Corpus Christi Chamber of Commerce indicated that they completed an industry cluster assessment; however they did not complete the survey to indicate which clusters were identified.

Respondents that indicated they had not yet performed an assessment were asked two final questions: 1) if they planned to identify industry clusters in the future and 2) if they are planning or implementing other strategies to promote regional economic growth of their region. Respondents that had performed a regional industry cluster assessment were forwarded to question 5 for a series of questions about that assessment.

3. *If your region has not identified industry clusters, do you plan to in the future?*

Of the two local boards and one Metro 8 Chamber that have not performed an assessment of industry clusters in their region – the South Plains and East Texas local workforce development boards and the Greater El Paso Chamber of Commerce - all three plan to do so in the future.

4. *Are you planning or implementing any other strategies to promote regional economic growth?*

While neither South Plains and the East Texas local boards nor the Greater El Paso Chamber are focused on industry clusters at this point, they all are implementing other strategies to achieve economic growth. South Plains has identified the high growth industries that are critical to the region's economic future. The industries identified are targeted and prioritized for purposes of WIA expenditures and expenditures of other local board resources. The targeted industries are reviewed on a periodic basis.

The East Texas local board is currently developing an action plan that will identify strategies and actions for partnering with economic development entities. The local board currently works with economic development entities serving as a forum for the discussion of workforce development issues and as a convener of stakeholders in workforce development. Customized skill training, regular collaboration with economic development professionals and updated strategic planning with an emphasis on economic development are additional strategies that East Texas uses to promote regional economic growth.

The Greater El Paso Chamber of Commerce promotes the greater El Paso region, which includes El Paso, Ciudad Juarez and three counties in Southern New Mexico. The Upper Rio Grande Workforce Development Board has contracted with the Institute for Policy and Economic Development at the University of Texas at El Paso to complete an industry cluster analysis for the Upper Rio area.

5. *Are you aware of any other entity in your region that has undertaken the identification of industry clusters?* (This question, and all through question 18, were posed to respondents that answered yes in question two.)

**Table 1. Cluster Identification by Other Entities**

	Yes	No
Local Workforce Development Boards	15	11
Chambers of Commerce	5	1

As Table 1 indicates, both local boards and Metro 8 Chambers are aware of other entities that have undertaken the identification of industry clusters in their region. Those local boards that indicated that they are aware of other entities undertaking the identification of industry clusters named chambers of commerce, local school districts, and a local college. Of the five Metro 8 Chambers (Arlington, Corpus Christi, Greater San Antonio, Greater El Paso, and Greater Dallas Chamber) that responded affirmatively, all indicated that the local boards have undertaken this task.

6. How do you identify your region?

**Table 2. Regional Identification**

	<b>Local Workforce Development Boards</b>	<b>Chambers of Commerce</b>
Metropolitan Statistical Area	1	2
Metropolitan Statistical Area plus outlying counties	2	1
Workforce Development Area	14	0
Two or more adjacent workforce development areas	8	1
Other	1	1

As indicated in Table 2, the majority of local boards (21) identify their region as either their workforce development area or two or more adjacent workforce development areas. Those listing two or more adjacent workforce development areas include: Texoma, Cameron County, Dallas County, Middle Rio Grande Valley, North Central Texas, Rural Capital Area, Lower Rio Grande and Golden Crescent. Of the five Metro 8 Chambers responding to this question, Corpus Christi, Greater San Antonio and Greater Houston Partnership identified their region as a metropolitan statistical area or metropolitan statistical area plus outlying counties.

Two local boards and one Metro 8 Chamber responded that they used another definition for region and selected “Other” in response to question 6. The Concho Valley Board made two regional identifications. The local board recognizes the 13 county Concho Valley region as well as the larger rural workforce network that includes the following five contiguous workforce areas – Concho Valley, West Central Texas, North Texas, Permian Basin and South Plains. The Arlington Chamber of Commerce identified the City of Arlington and Tarrant County as their region.

7–12. Indicate which, if any, of the six Statewide Target Industry Clusters (and related sub-clusters) have been identified as target industry clusters for your region.

**Table 3. Statewide Target Industry Clusters Identified in Regional Cluster Assessments**

Statewide Target Industry Cluster	Sub-Clusters	Local Board	Chamber	Total
<b>Advanced Technologies and Manufacturing</b>		20	3	23
	Nanotechnology and Materials	4	1	5
	Micro-electromechanical Systems	1	1	2
	Semiconductor Manufacturing	6	2	8
	Automotive Manufacturing	8	2	10
<b>Aerospace and Defense</b>		13	3	16
<b>Biotechnology and Life Sciences</b>		10	4	14
<b>Information and Computer Technology</b>		12	4	16
	Communications Equipment	4	1	5
	Computing Equipment and Semiconductors	4	2	6
	Information Technology	11	2	13
<b>Petroleum Refining and Chemical Products</b>		7	2	9
<b>Energy</b>		12	1	13
	Oil and Gas Production	11	1	12
	Power Generation and Transmission	7	1	8
	Manufactured Energy Systems	2	1	3
<b>Other</b>		21	3	24

As Table 3 indicates, Advanced Technologies and Manufacturing or the related sub-clusters are a target industry cluster for the majority of local workforce areas. Almost 50% of local boards also identified the Aerospace and Defense, Energy, and Information and Computer Technology clusters in their assessments.

Biotechnology and Life Sciences and Information and Computer Technology were the two clusters most frequently identified by the Metro 8 Chambers, followed by Advanced Technologies and Manufacturing and Aerospace and Defense.

In reviewing Table 3, it is important to note that the sub-clusters under each cluster do not necessarily add up to the total indicated for the specific cluster. Local boards and Metro 8 Chambers may have identified individual sub-clusters, but not the primary cluster. “Other” clusters identified by the local boards and Metro 8 Chambers that are not included in the Governor’s Cluster Initiative are listed in Question 13.

While Table 3 shows the aggregate number of local boards and Metro 8 Chambers that identified a specific cluster or sub-cluster, Table 4 on the following page lists which of the statewide target industry clusters and sub-clusters were identified by each local board or Metro 8 Chamber. Some respondents also listed other related sub clusters that are not included in Table 4. A complete list of clusters identified by each board and chamber is included as Appendix B.

On average, local boards identified three of the six statewide target industry clusters. Two local boards, Brazos Valley and Panhandle, identified all six clusters in their region, while Central Texas and Rural Capital identified five of the industry clusters. Of the Metro 8 Chambers responding to this question, Arlington and the Greater Houston Partnership identified five of the clusters, while Greater San Antonio identified four of the six. As expected, the major metropolitan areas reported the greatest variety of clusters, while east, west, west central and south Texas generally identified fewer clusters.

**Table 4. Statewide Target Industry Clusters Identified by Each Local Board and Metro 8 Chamber**

	Advanced Technologies and Manufacturing	Nanotechnology and Materials (sub-cluster)	Micro-electromechanical Systems (sub-cluster)	Semiconductor Manufacturing (sub-cluster)	Automotive Manufacturing (sub-cluster)	Aerospace and Defense	Biotechnology and Life Sciences	Information and Computer Technology	Communications Equipment (sub-cluster)	Computing Equipment and Semiconductors (sub-cluster)	Information Technology (sub-cluster)	Petroleum Refining and Chemical Products	Energy	Oil and Gas Production (sub-cluster)	Power Generation and Transmission (sub-cluster)	Manufactured Energy Systems (sub-cluster)
<b>Local Board</b>																
Alamo	X				X	X	X	X								
Brazos Valley	X					X	X	X				X	X	X	X	
Cameron County	X				X											
Capital Area	X	X	X	X	X		X	X	X	X	X		X			X
Central Texas	X					X	X	X					X		X	
Coastal Bend												X		X		
Concho Valley					X			X		X	X					
Dallas	X			X		X					X					
Deep East Texas	X															
East Texas																
Golden Crescent	X				X			X	X		X	X	X	X	X	X
Gulf Coast						X	X					X	X	X		
Heart of Texas	X					X		X			X		X	X	X	
Lower Rio Grande	X							X			X					
Middle Rio Grande												X	X	X		
North Central	X	X		X		X	X				X					
North East	X														X	
North Texas						X	X				X					
Panhandle	X				X	X	X	X	X	X	X	X	X	X	X	
Permian Basin	X							X			X			X		
Rural Capital	X	X		X	X	X	X	X					X			
South East Texas	X											X	X	X		
South Plains																
South Texas													X	X		
Tarrant County	X			X		X	X									
Texoma	X			X		X		X								
Upper Rio Grande	X	X			X	X		X	X	X	X					
West Central	X												X	X	X	
<b>CHAMBERS</b>																
Arlington	X	X	X	X	X	X	X	X			X	X				
Corpus Christi																
Fort Worth																
Greater Austin																
Greater Dallas	X			X			X	X		X						
Greater El Paso																
Greater Houston						X	X	X	X	X	X	X	X	X	X	X
Greater San Antonio	X				X	X	X	X								
	Local boards and Metro 8 Chambers who have not yet completed an assessment															
	Chambers who did not complete the survey															

A comparison of the industry clusters identified by the Metro 8 Chambers with those identified by the local board covering their area reveals a high degree of consistency, though not always an exact match. This is the case even when the respective local boards and Metro 8 Chambers worked together on the regional cluster assessment. While the Alamo local board and the Greater San Antonio Chamber of Commerce identified the same clusters and sub-clusters for their region, other local boards and Metro 8 Chambers may have identified a common core of clusters and then separately chosen a particular focus on fewer or additional clusters.

13. Indicate any other industry clusters that have been identified in your region.

Local boards and Metro 8 Chambers identified a number of other industry clusters in addition to the statewide target industry clusters. These clusters are listed below. It is apparent that some survey respondents are using differing definitions of the term “industry cluster”. For example, the list below includes several items that may be more consistent with the definition of an industry sector.

**Local Workforce Development Board**

- |  |                                     |
|--|-------------------------------------|
| Business Services                                  | Health Care Services                |
| Hospitality  | Logistics and Supply Chain          |
| Retail and Tourism                                 | Clean Energy                        |
| Housing and Construction                           | Financial Services                  |
| Warehouse and Distribution                         | Food Manufacturing                  |
| Plastics and Rubber Products Manufacturing         | Back Office Processing              |
| Construction                                       | Education                           |
| Transportation/Transportation Equip. Manufacturing | Government                          |
| Legal  | Waste Management                    |
| Protective and Human Services                      | Corporate Headquarters              |
| Administration and Support                         | Food Processing and Production      |
| Medical Treatment and Research                     | Accounting and Bookkeeping Services |
| Management and Technical Consulting Services       | Wireless/Telecommunications         |
| Scientific   | Commercial Construction             |
| Building Equipment Contractors                     | Training and Personal Development   |
| Agriculture  |                                     |

**Chambers of Commerce**

- |   |                     |
|---|---------------------|
| Professional, Business and Information Services | Health Care         |
| Hospitality and Tourism                         | Logistics and Trade |

The following comparison of industry clusters and industry sectors is an excerpt from a summary prepared by the Accelerating State Adoption of Sector Strategic Project, 2006, a joint project of the National Governor’s Association, the Corporation for a Skilled Workforce, and the National Network of Sector Partners.

“Sector strategies and cluster approaches are related because they are both industry- and regionally-focused. They differ based on particular objectives, means of collaboration, and outcomes.

Industry cluster approaches are regional systems of communication and collaboration that support a concentration of companies and industries interconnected by the markets they serve and the products they produce, as well as the networks of suppliers and key economic foundations in the region, such

as universities, capital, physical infrastructure and skilled labor pools. Cluster approaches affiliate related industries for mutual growth benefits. Business clustering is intended to provide access to more suppliers, customized support services, skilled labor pools, and to the transfer of industry-specific knowledge, innovation and know-how.

Key features of a cluster approach are:

- Always have strong economic development component.
- Approach related industries or companies as a group.
- Target “wealth importing” or “traded” industries with the goal of building wealth and increasing productivity.
- Jobs may or may not be a key component of cluster initiatives.

The definition of sector strategies is regional partnerships that bring together local education and training, business service, and social service infrastructures in order to respond effectively to the workforce needs of an industry. They target a specific industry, and engage employers within that industry, in order to strengthen that industry’s competitive edge in the global economy, to advance low-income workers and sustain middle-class jobs, and to leverage and align public and private resources that mutually benefit workers and employers. Sector initiatives are intended to remove bottlenecks that inhibit recruitment, hiring, training or worker placement in an industry.

Key features of a sector strategy are:

- Always have a strong workforce or human resource component.
- Focus intensively on a specific, targeted industry.
- Target the skilled labor needs of employers in targeted industries and the needs of workers to obtain and keep good jobs.
- Jobs are a key component of sector initiatives”.

The Statewide Target Industry Clusters were identified based on the cross sections of state statute and the work of Dr. Porter and Dr. Perryman. Each of these three sources used the definition of industry cluster as described in the summary above. The 78<sup>th</sup> Texas Legislature codified the definition of an industry cluster in Texas Government Code, Section 481.001(6):

*“Industry cluster” means a concentration of businesses and industries in a geographic region that are interconnected by the markets they serve, the products they produce, their suppliers, the trade associations to which their employees belong, and the educational institutions from which their employees or prospective employees receive training.*

14. *Did your staff identify the industry cluster(s) in your area, or did you engage an external consultant/specialist?*

As indicated in Table 5, of the 25 local boards that answered this question, 11 used staff exclusively to identify the industry clusters in the area. Six boards used a combination of staff and an external specialist or consultant, and eight used a consultant or specialist exclusively. Of the four Metro 8 Chambers that answered this question, all four used an external consultant with one of them also utilizing staff resources.

**Table 5. Use of Staff and/or External Consultant to Perform Cluster Assessment**

<b>Entity</b>	<b>Staff Only</b>	<b>Staff Plus External Consult.</b>	<b>External Consult. Only</b>
<b>Local Workforce Development Boards (25)</b>	11	6	8
<b>Chambers of Commerce (4)</b>	0	1	3

15. *What methodology was used to identify the industry clusters in your region?*

Table 6 shows the various tools that the local boards and Metro 8 Chambers used to identify the industry clusters in their region. It is important to note that respondents were able to choose more than one methodology so the number of responses is greater than the total number of respondents.

Labor market data was the most commonly used methodology by both local boards and Metro 8 Chambers, often supplemented by focus groups or committees of local representatives. Eight local boards used a proprietary economic forecasting tool. Local boards and Metro 8 Chambers reported using other methodology, including university research, community audits, and input from employers, board members, the public and contractor staff.

**Table 6. Methodology Used to Identify Regional Clusters**

<b>Entity</b>	<b>Industry Assessment using Labor Market Data</b>	<b>Proprietary Economic Forecasting Tool</b>	<b>Focus Groups (committee or local representatives)</b>	<b>Other Responses</b>
<b>Local Workforce Development Boards (25)</b>	24	8	16	7
<b>Chambers of Commerce (4)</b>	4	0	2	1

16. *What other partners/organizations are involved in your cluster initiative? (Note all that apply.)*

As indicated in Table 7, the local boards have engaged broad partnerships in their regional cluster initiatives. Twenty-five of the 26 local boards included their economic development entities. Higher education institutions, private industry employers and chambers of commerce were also involved in the cluster initiatives of most local boards. A significant number of local boards (17) also included independent school districts (ISDs) as a partner while 10 local boards noted collaboration with other contiguous local boards.

Of the Metro 8 Chambers that responded to the survey, four reported involvement by higher education institutions and private sector employers. Metro 8 Chambers also included economic development entities and local boards as partner organizations involved in their initiative.

Local boards and Metro 8 Chambers also included other partners in their cluster initiatives as relevant to the unique geography or industry in their region. For example, the Central Texas local board partners with Defense Contractors Association and the Heart of Texas Defense Alliance. Cameron County local board partners with airport, seaport and international bridge authorities. The West Central local board works with Area Health Education Committee, Texas Organization of Rural and Community Hospitals and Manufacturing Skill Standards Council as consulting partners/organizations.

**Table 7. Partners Included in Regional Cluster Initiatives**

	<b>Local Boards</b>	<b>Chambers</b>
Economic Development Entity	25	3
Local Board	10	3
Chamber of Commerce	23	2
Higher Education Institutions	24	4
ISDs/Secondary Education	17	1
Private Industry Employers	23	4
Other (including not-for-profit, faith-based orgs.)	11	1
Other	4	1

17. *What specific strategies and actions are or will you and your partners use to strengthen those clusters?*

Local boards and Metro 8 Chambers reported a number of specific strategies and actions associated with their regional cluster initiatives. The most frequently mentioned strategy reported is communication about the initiative to the broader region in order to raise awareness of industry needs, develop strategic alliances among employers and establish collaborative partnerships throughout the community and region. The Arlington Chamber of Commerce shared an example of a strategic alliance, where employers formed a local “trade association” for the industry to identify common issues and work together to improve the environment in which cluster companies operate. The local trade association also focuses on developing a better interface between employers and educators to ensure colleges and universities are producing graduates with the skills and core competencies needed by employers.

In addition to the increased communication and partnership development, strategies that the local boards have taken to strengthen the industry clusters in their area include:

- capacity building at secondary and postsecondary education and training institutions;
- re-evaluating local board policies on the use of public training funds to ensure that they meet workforce skill needs;
- developing work readiness certificates;
- conducting gap analyses on identified clusters in collaboration with community partners and outside consultants;
- increasing the awareness of career opportunities in a specific industry, as well as the availability of training;
- researching the industry to identify workforce development barriers;
- working with employers to provide staffing services, on-the-job training, customized training and incumbent worker training;
- assessing recruitment/development needs for individual employers; and
- working with school districts to develop career awareness.

18. *List the barriers or issues your region faces as you work to strengthen your regional economy and the identified clusters.*

Local boards and Metro 8 Chambers reported several barriers to implementing regional industry cluster initiatives. The three most common barriers identified by the local boards include limited funding, low levels of educational attainment in the current and future workforce, and lack of skilled and ready workforce that has the necessary skills for identified cluster occupations. Local boards specifically noted that there is limited funding for staffing functions to facilitate strategy implementation, local board and center staff travel, and training.

Other barriers identified by local boards include:

- lack of alignment in state mandates for higher education, public education and workforce development;
- sustaining stakeholder involvement;
- multiple jurisdictions with differing approaches/policies;
- an aging workforce; and
- providing services within a large geographical area

The barriers that the Metro 8 Chambers report are similar in scope to those reported by local boards. Barriers identified include:

- maintaining industry engagement;
- competition between cluster members;
- generating buy-in and interest from an externally-generated study;
- artificial boundaries (i.e., governmental jurisdictions);
- communication among entities;
- workforce availability;
- adult education;
- lower high school graduation rates than other communities; and
- the need for postsecondary education to meet the demand for skilled workers in sub-baccalaureate programs, in addition to focusing on the attainment of four year degrees.

### **Observations**

Four major observations were noted based on analysis of the survey results. The first observation is that the regional industry cluster assessments reported by survey respondents reflect a high degree of alignment with the six clusters in the Statewide Industry Cluster Initiative. All respondents that have completed a regional assessment, both urban and rural, report that their region includes at least one of the six statewide target clusters. This degree of alignment is not unexpected given that the target clusters for the state were identified based on the work of Dr. Porter and Dr. Perryman, and both used empirical data of regional competitiveness in their analyses. However, it is important for the implementation and sustainability of the cluster initiative that independent regional assessments show strong alignment with the state-level initiative.

Advanced Technologies and Manufacturing is the most common industry cluster identified across the state. This cluster was identified by all local boards that performed a cluster assessment except North Texas, Gulf Coast, South Texas, and Middle Rio Grande. Of the four Metro 8 Chambers that identified clusters in their response, only the Greater Houston Partnership did not identify Advanced Technologies and Manufacturing. The industry cluster least often identified by the local boards is Biotechnology and Life Sciences. Only 10 of the 26 responding local boards identified this as a cluster in their region. However, of the five Metro 8 Chambers that have performed an assessment, the four that specified the clusters noted Biotechnology and Life Sciences in their region.

The second observation is that most local boards and Metro 8 Chambers engaged a broad partnership in both their regional cluster assessments and their subsequent implementation strategies. This is an important observation, in that a broad partnership is essential to regional collaboration. Collaboration is a critical ingredient for long-term sustainability and the implementation of systemic change needed by many regions to grow their target industry clusters and remain competitive in a global economy. The need for collaboration, both statewide and among regional partners, was emphasized as a priority by all six cluster teams in their cluster assessment reports to the Governor. Cluster representatives stated that statewide

collaboration will leverage Texas' resources, focus technology and training investments, and lead to a comprehensive strategy for workforce and economic development. Cluster representatives also underscored the importance of regional collaborations, noting that such continued regional dialogues will assist partners to identify resources and opportunities for ongoing collaboration, to share resources, and to identify and communicate best practices.

The third observation is that some survey respondents may not have made a clear distinction in their regional assessments between an industry cluster and an industry sector. They are closely related, though each differs by definition and design as described in more detail on pages 9-10. It is important to distinguish between those differences when developing policy and strategies. While both are appropriate and relevant for developing a local or regional economy, the difference between the two determines the point of strategy and/or policy intervention. As noted earlier, sectoral approaches always have a strong workforce component, and focus primarily on workforce training and human resource development for a specific industry. Cluster approaches always have a strong economic development component and approach related industries or companies as a group. For example, in Texas the healthcare services sector has an urgent need for a skilled and available workforce. This critical workforce need is reflected in the majority of survey responses. Sixteen local boards and two chambers identified medical or healthcare services as a priority for their region.

Finally, some respondents identified a sizeable number of target clusters for their region. The number of clusters identified in respondents' assessments ranged from a low of one to a high of fifteen. Local boards identified an average of seven clusters, while chambers identified an average of six. Appendix B is a complete listing, by respondent, of the clusters identified for that region. One of the three most common barriers reported by local boards is lack of resources to implement cluster strategies. Local boards may not have sufficient resources to effectively address the needs of numerous target clusters or sectors. In those instances, it may be important for regional partnerships to further prioritize cluster strategies, based on the strength of each cluster in the region as evidenced by assessment results.

**Texas Workforce Investment Council Industry Cluster Survey**  
(Version for Local Workforce Development Boards)

**I. Introduction**

We are interested in the status of regional industry cluster initiatives in your area and would appreciate your participation in this survey. Your response will provide valuable information to state partners who continue to coordinate efforts, develop action plans and determine how to best support regional initiatives.

Definition: Industry cluster means a concentration of businesses and industries in a geographic region that are interconnected by the markets they serve, the products they produce, their suppliers, trade associations and the educational institutions from which their employees or prospective employees receive training. While located in close proximity, these industry clusters are economic in nature and not geographically bounded.

Before beginning this survey, if you have any questions or need additional information, contact Jennifer Concannon at [jconcannon@governor.state.tx.us](mailto:jconcannon@governor.state.tx.us) or by phone at (512) 936-8103.

Thank you!

**II. Survey**

**\* 1. Please indicate the local workforce development board you represent.**

**\* 2. Have you performed an assessment of your region and as a result, identified specific industry clusters for targeted growth?**

- No (If no, proceed to questions 3 & 4)
- Yes (If yes, skip to question 5)

**3. If your region has not identified industry clusters, do you plan to in the future?**

- No
- Yes

**4. Are you planning or implementing any other strategies to promote regional economic growth?**

- No (proceed to question 19)
- Yes (please elaborate) (proceed to question 19)

**\* 5. Are you aware of any other entity in your region that has undertaken the identification of industry clusters?**

- No
- Yes (please specify)

**\* 6. How do you define your region?**

- Metropolitan Statistical Area
- Metropolitan Statistical Area plus outlying counties
- Workforce Development Area
- Two or more adjacent workforce development areas
- Other (please specify)

**Questions 7 - 13 ask you to identify industry clusters in your region.**

**The following are clusters in the Governor's Statewide Industry Cluster Initiative. Where applicable, sub-clusters are also identified. Indicate the industry clusters and sub-clusters that match those you identified in your region when you did an industry assessment as indicated in Question 1.**

**\* 7. Has Advanced Technologies and Manufacturing been identified as a cluster in your region? (Check all that apply.)**

- Advanced Technologies and Manufacturing (cluster)
- Nanotechnology and Materials (sub-cluster)
- Micro-electromechanical Systems (sub-cluster)
- Semiconductor Manufacturing (sub-cluster)
- Automotive Manufacturing (sub-cluster)
- Not identified in my region
- Other Advanced Technologies and Manufacturing sub-clusters

**\* 8. Has Aerospace and Defense been identified as a cluster in your region?**

- No
- Yes

**\* 9. Has Biotechnology and Life Sciences (not including medical services) been identified as a cluster in your region?**

- No
- Yes

**\* 10. Has Information and Computer Technology been identified as a cluster in your region? (Check all that apply.)**

- Information and Computer Technology (cluster)
- Communications Equipment (sub-cluster)
- Computing Equipment and Semiconductors (sub-cluster)
- Information Technology (sub-cluster)
- Not identified in my region
- Other Information and Computer Technology sub-clusters

**\* 11. Has Petroleum Refining and Chemical Products been identified as a cluster in your region?**

- No
- Yes

**\* 12. Has Energy been identified as a cluster in your region? (Check all that apply.)**

- Energy (cluster)
- Oil and Gas Production (sub-cluster)
- Power Generation and Transmission (sub-cluster)
- Manufactured Energy Systems (sub-cluster)
- Not identified in my region
- Other Energy sub-clusters

**\* 13. Indicate any other industry clusters that have been identified in your region.**

**\* 14. Did your staff identify the industry cluster(s) in your area, or did you engage an external consultant/specialist?**

- Staff
- External consultant/specialist

**\* 15. What methodology was used to identify the industry clusters in your region? (Check all that apply.)**

- Industry assessment using labor market data
- Proprietary economic forecasting tool
- Focus Groups (committee or local representatives)
- Other (please specify)

**\* 16. What other partners/organizations are involved in your cluster initiative? (Check all that apply.)**

- Economic development entity
- Other local workforce development board(s)
- Chamber(s) of Commerce
- Higher Education institutions (including community and technical colleges and universities)
- Independent School Districts/Secondary Education
- Private industry representatives/Employers (including industry associations)
- Other, including not-for-profit, faith-based organizations
- Other (please specify):

**17. What specific strategies and actions are or will you and your partners use to strengthen those clusters? List the top three to five strategies or actions and the name of the organization leading the implementation.**

**18. List the top three to five barriers or issues your region faces as you work to strengthen your regional economy and the identified clusters.**

**19. We would like to contact you if we have follow-up questions regarding your efforts with the industry cluster initiative. Please provide your contact information.**

**Regionally Identified Clusters Listed by Survey Respondent  
Local Workforce Development Boards**

Note: Items listed in bold represent the Target Industry Clusters.

**Alamo**

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. **Biotechnology and Life Sciences**
4. Financial Services
5. Healthcare
6. **Information and Computer Technology**
7. Telecommunications

**Brazos Valley**

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. **Biotechnology and Life Sciences**
4. Construction
5. Education
6. **Energy**
7. **Petroleum Refining and Chemical Products**
8. Transportation

**Cameron Works**

1. **Advanced Technologies and Manufacturing**
2. Healthcare
3. Hospitality and Tourism
4. Logistics
5. Plastics Production Manufacturing
6. Transportation Equipment Manufacturing
7. Other related Information and Computer Technology sub-cluster: Information Logistic

**Capital Area**

1. **Advanced Technologies and Manufacturing**
2. **Biotechnology and Life Sciences**
3. **Energy**
4. Healthcare
5. **Information and Computer Technology**
6. Transportation/logistic
7. Wireless

**Central Texas**

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. **Biotechnology and Life Sciences**
4. **Energy**
5. **Information and Computer Technology**

**Coastal Bend**

1. Construction
2. Education
3. Healthcare
4. Hospitality
5. **Petroleum Refining and Chemical Products**
6. **Oil and Gas Production**
7. Other related Advanced Technologies and Manufacturing sub-clusters: Basic Chemical Manufacturing, Plastics & Rubber Manufacturing
8. Other related Energy sub-clusters: Natural Gas Distribution Pipeline, Transportation of Crude Oil Petroleum Refineries, Chemical & Allied Products Wholesalers, Petroleum & Petro. Products Wholesalers

### Concho Valley

1. **Automotive Manufacturing**
2. **Information and Computer Technology**
3. Construction
  - o Building Equipment Contractors
4. Retail Trade
5. Administrative/Support/Waste Mgmt & Remediation Svcs.
  - o Facilities Support Svcs.
  - o Protective Service Workers
6. Educational Services
  - o Elem. & Sec. Schools
  - o Colleges and Universities
7. Healthcare and Social Assist.
  - o Offices of Other Health Practitioners
  - o General Medical and Surgical Hospitals
  - o Other Hospitals
  - o Community Care Facility for the Elderly
8. Accommodation and Food Services
  - o Full Service Restaurants
9. Other related Advanced Technologies and Manufacturing sub-clusters: Animal Slaughtering/Processing, Architectural/Structural Metals, Other Miscellaneous Manufacturing

### Dallas County

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. Healthcare Logistics
4. **Information Technology**

### Deep East Texas

1. **Advanced Technologies and Manufacturing**

### Golden Crescent

1. **Advanced Technologies and Manufacturing**
2. Agriculture
3. Education
4. **Energy**
5. Government (local, state, federal)
6. **Information and Computer Technology**
7. **Petroleum Refining and Chemical Products**
8. Retail/Food Services/Accommodations

### Gulf Coast

1. **Aerospace and Defense**
2. **Biotechnology and Life Sciences**
3. Construction
4. **Energy**
5. Healthcare
6. **Petroleum Refining and Chemical Products**
7. Transportation

### Heart of Texas

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. Commercial Construction
4. **Energy**
5. Healthcare
6. **Information and Computer Technology**
7. Medical
8. Other Energy sub-cluster: Mining and related support

### Lower Rio Grande Valley

1. **Advanced Technologies and Manufacturing**
2. Construction
3. Healthcare
4. **Information and Computer Technologies**
5. Retail and hospitality

### North Central

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. **Biotechnology and Life Sciences**
4. **Information Technology**
5. Logistics and Supply Chain

### North Texas

1. **Aerospace and Defense**
2. **Biotechnology and Life Sciences**
3. **Information and Technology**
4. Medical
5. Transportation

### Permian Basin

1. **Advanced Technologies and Manufacturing**
2. **Biotechnology and Life Sciences**
3. Education
4. **Information Technology**
5. **Oil and Gas Production**
6. Transportation

### Middle Rio Grande

1. **Energy**
2. **Petroleum Refining and Chemical Products**

### North East Texas

1. **Advanced Technologies and Manufacturing**
2. Construction
3. **Energy**
4. Healthcare
5. Transportation and Logistics

### Panhandle

1. Accounting and Bookkeeping Services
2. **Advanced Technologies and Manufacturing**
3. **Aerospace and Defense**
4. **Biotechnology and Life Sciences**
5. Construction
6. Elementary and Secondary Schools
7. **Energy**
8. Food (beef, pork, dairy, crop)
9. **Information and Computer Technology**
10. Management and Technical Consulting Services
11. Medical treatment and research
12. **Petroleum Refining and Chemical Products**

### Rural Capital Area

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. Automotive Parts Manufacturing
4. Back Office Processing
5. **Biotechnology and Life Sciences**
6. Business Services
7. **Energy**
8. Financial Services
9. Food Manufacturing
10. Healthcare Services
11. Housing and Construction
12. **Information and Computer Technology**
13. Plastics and Rubber Products Manufacturing
14. Retail and Tourism
15. Warehousing and Distribution
16. Other related Energy sub-cluster: Clean Energy

**South East Texas**

1. **Advanced Technologies and Manufacturing**
2. **Energy**
3. Hospitality
4. **Petroleum Refining and Chemical Products**

**South Texas**

1. **Energy**

**Tarrant**

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. **Biotechnology and Life Sciences**
4. Healthcare
5. Logistics

**Texoma**

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. Construction
4. Educational Services
5. Healthcare
6. **Information and Computer Technology**
7. Professional, Scientific and Warehousing
8. Retail Trade
9. Transportation and Warehousing

**Upper Rio Grande**

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. Construction
4. Financial Services
5. **Information and Computer Technology**
6. Medical
7. Transportation

**West Central**

1. **Advanced Technologies and Manufacturing**
2. Construction
3. **Energy**
4. Financial Services
5. Healthcare

**Regionally Identified Clusters Listed by Survey Respondent  
Metro 8 Chambers of Commerce**

**Arlington**

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. **Biotechnology and Life Sciences**
4. Healthcare
5. Hospitality and Tourism
6. **Information and Computer Technology**
7. Logistics and Trade
8. **Petroleum Refining and Chemical Products**
9. Professional, Business and Information Services

**Greater Dallas**

1. **Advanced Technologies and Manufacturing**
2. **Biotechnology and Life Sciences**
3. Education
4. Healthcare
5. **Information and Computer Technology**
6. Logistics
7. Other math, science related fields

**Greater Houston Partnership**

1. **Aerospace and Defense**
2. **Biotechnology and Life Sciences**
3. **Information and Computer Technology**
4. **Energy**
5. **Petroleum Refining and Chemical Products**

**Greater San Antonio**

1. **Advanced Technologies and Manufacturing**
2. **Aerospace and Defense**
3. **Biotechnology and Life Sciences**
4. **Information and Computer Technology**