

# Texas Workforce Investment Council

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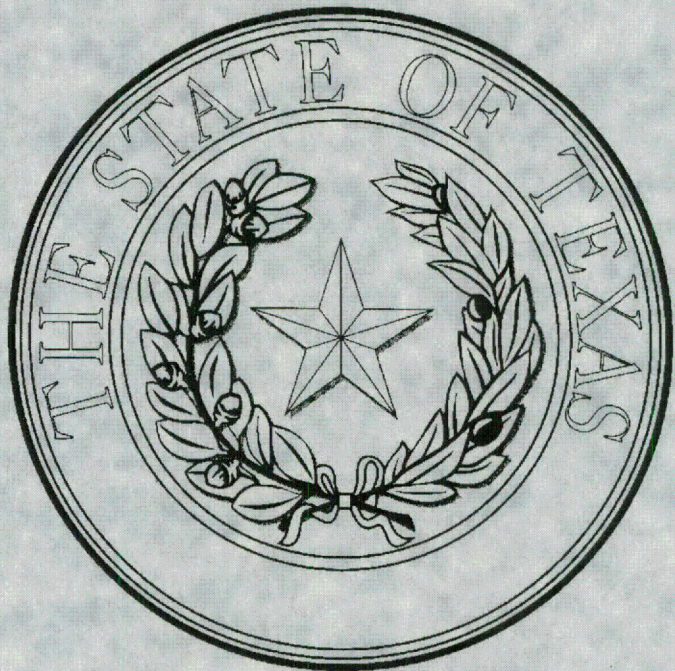
**Greg Abbott**  
Governor

**Dan Patrick**  
Lt. Governor

**Joe Straus**  
Speaker

**Wes Jurey**  
Chair

**Lee Rector**  
Director



Briefing Materials  
December 4, 2015  
Austin Community College  
Highland Business Center  
5930 Middle Fiskville Road  
Room 201  
Austin, Texas 78752

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# Texas Workforce Investment Council

## Members

Wes Jurey (Chair), Arlington  
Sharla Hotchkiss (Vice Chair), Midland  
Mark Barberena, Fort Worth  
Robert Cross, Houston  
Mark Dunn, Lufkin  
Carmen Olivas Graham, El Paso  
Thomas Halbouty, Southlake  
Richard Hatfield, Austin  
Robert Hawkins, Bellmead  
Larry Jeffus, Garland  
Paul Jones, Austin  
Matthew Maxfield, Harker Heights  
Richard Rhodes, Austin  
Joyce Delores Taylor, Houston  
Bryan Daniel, Austin  
Raymund Paredes, Austin  
Larry Temple, Austin  
Chris Traylor, Austin  
Michael Williams, Austin

## Representing

Business and Industry  
Community-Based Organizations  
Labor  
Labor  
Business and Industry  
Education  
Business and Industry  
Labor  
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Education  
Labor  
Business and Industry  
Education  
Business and Industry  
Office of the Governor, Economic Development and Tourism  
Texas Higher Education Coordinating Board  
Texas Workforce Commission  
Texas Health and Human Services Commission  
Texas Education Agency

## *Mission*

*Assisting the Governor and the Legislature with strategic planning for and evaluation of the Texas workforce development system to promote the development of a well-educated, highly skilled workforce for Texas.*



GOVERNOR GREG ABBOTT

**TEXAS WORKFORCE INVESTMENT COUNCIL**

November 23, 2015

Dear Council Members:

Enclosed please find the December 4, 2015, meeting briefing book.

The Texas Workforce Investment Council (Council) will meet at 8:30 a.m. on Friday, December 4, 2015, at the Austin Community College Highland Business Center located at 5930 Middle Fiskville Road, room 201, in Austin, Texas. On Thursday, December 3, 2015, the Executive Committee will meet at 3:00 p.m. at the Economic Development and Tourism conference room, which is located on the fourth floor at 221 East 11<sup>th</sup> Street.

Overview of Council Meeting Agenda Items and Briefing Book Contents

The Council meeting will begin with a report from the Executive Committee. This report will be followed by consideration of the Council's annual evaluation report, *Evaluation 2015: Accomplishments and Outcomes of the Texas Workforce System*. The memorandum and the draft evaluation report can be found on pages 5 and 9, respectively. The Council will also consider for approval the standards and guidelines for the Texas skill standards system. This information may be found on page 133 of the briefing book. The next agenda item, found on page 187, will provide information on the Council's annual report for fiscal year 2015. This will be followed by a briefing on the research report to define middle-skill STEM occupations in Texas, found on page 199. The next two briefings, found on pages 247 and 249, will provide information on Texas' combined state plan under the Workforce Innovation and Opportunity Act and the fiscal year 2017 apprenticeship funding formula recommendations. The final briefing, found on page 251, will provide the report findings from the Council's 2015 survey of Texas employers.

Upcoming Projects and Activities

In the coming months, we will continue to work with our system partners to formalize performance measures as we implement the first year of the new workforce system strategic plan. We will also work with the Texas Workforce Commission as it concludes the process to develop the combined state plan under the Workforce Innovation and Opportunity Act in anticipation of the Council's consideration for approval on February 5, 2016. Work will also continue on several Council reports and projects, including the development of the apprenticeship briefing paper, management of the Texas skill standards system, and ongoing research on middle-skill STEM occupations and industry-based certifications.

I look forward to seeing you in December. In the meantime, I would be happy to answer any questions that you have about the meeting or the agenda. Please do not hesitate to contact me by email at [lee.rector@gov.texas.gov](mailto:lee.rector@gov.texas.gov) or at (512) 936-8100.

Sincerely,

A handwritten signature in black ink, appearing to read "Lee Rector".

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## TEXAS WORKFORCE INVESTMENT COUNCIL

Austin Community College  
Highland Business Center  
5930 Middle Fiskville Road  
Room 201  
Austin, Texas 78752

COUNCIL MEETING  
December 4, 2015

Wes Jurey, Chair

### ORDER OF AGENDA AND TABLE OF CONTENTS

(8:30 A.M.)

The following items may not necessarily be considered in the order they appear.

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Approval of Minutes – September 11, 2015	Action	1
<b>II. <u>Reports, Actions, and Briefings</u></b>		
1. Report from the Executive Committee	Report	
2. Wagner-Peyser 7(b) Update	Report	
3. Consideration for Approval – <i>Evaluation 2015: Accomplishments and Outcomes of the Texas Workforce System</i>	Action	5
4. Consideration for Approval – Texas Skill Standards Guidelines and Standards	Action	133
5. Briefing on the Texas Workforce Investment Council Annual Report for Fiscal Year 2015	Briefing	187
6. Briefing on the Research Report: Defining Middle-Skill STEM Occupations in Texas	Briefing	199
7. Briefing on the Texas Combined State Plan under the Workforce Innovation and Opportunity Act	Briefing	247
8. Briefing on the Fiscal Year 2017 Apprenticeship Funding Formula Recommendations	Briefing	249
9. Briefing on the 2015 Survey of Texas Employers – Report Findings	Briefing	251
<b>III. <u>Information and Updates</u></b>		
1. Workforce Innovation and Opportunity Act: A Compendium	Information	253
2. Report on the October 19-20, 2015 Meeting of the Rehabilitation Council of Texas	Information	271
3. Policy News Highlights	Information	273
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<b>IV. <u>Adjourn</u></b>		

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**TEXAS WORKFORCE INVESTMENT COUNCIL MEETING**

Austin Community College  
Highland Business Center  
5930 Middle Fiskville Road  
Room 201  
Austin, Texas 78752

**Friday, September 11, 2015  
MINUTES**

**MEMBERS PRESENT**

Wes Jurey (Chair), Sharla Hotchkiss (Vice Chair), Michael Berry [designee for Michael Williams], Robert Cross, Bryan Daniel, Veronda Durden [designee for Chris Traylor], Thomas Halbouty, Richard Hatfield, Robert Hawkins, Paul Jones, Matthew Maxfield, Reagan Miller [designee for Larry Temple], Richard Rhodes, Joyce Delores Taylor, and Garry Tomerlin [designee for Raymund Paredes]

**MEMBERS ABSENT**

Mark Barberena, Carmen Olivas Graham, and Larry Jeffus

**WELCOME AND ANNOUNCEMENTS**

Chair Wes Jurey called the meeting to order at 8:42 a.m.

Mr. Jurey welcomed the members and guests. He acknowledged two guests in the audience: Erika Akpan, senior business and regulatory advisor from the Office of the Speaker of the House, and Roseana Smith, division chief for workforce investment at the U.S. Department of Labor (DOL) Region 4. Mr. Jurey then asked everyone in the room to join him in a moment of silence on the anniversary of the 9/11 tragedy to honor those who lost their lives.

**PUBLIC COMMENT**

No public comment.

**APPROVAL OF MINUTES – ACTION**

Mr. Jurey asked if there were any changes to the June 5, 2015, minutes. Hearing none, he called for a motion. Robert Hawkins recommended approval of the minutes. Joyce Delores Taylor seconded the motion. The minutes were approved by unanimous voice vote.

**REPORTS, ACTIONS, AND BRIEFINGS**

**Report from the Executive Committee (Oral Report)**

Mr. Jurey reported that the executive committee had met the previous afternoon and was briefed on a number of items. He stated that an update on the status of the Council's fiscal year (FY) 2015 work plan was presented, and that the FY 2016 work plan was endorsed for Council approval. The executive committee also voted to recommend to the Council for approval the FY 2016 – FY 2023 strategic plan for the Texas workforce system. In addition, the committee discussed the new role of an interagency group under the plan, to address system-wide goals and issues across agency partners, rather than overseeing the

accomplishment of each action plan. Mr. Jurey thanked all members who had served on SITAC for the past 12 years.

**Report from the System Integration Technical Advisory Committee (Oral Report)**

Mark Dunn reported that the system integration technical advisory committee (SITAC) met yesterday for the final time. He acknowledged Sharla Hotchkiss and Richard Hatfield who attended the meeting. Mr. Dunn referred members to SITAC's final report in the briefing book and thanked the partner members for their commitment to final implementation of *Advancing Texas*, as well as development of the new strategic plan. He noted that Lee Rector, Council director, reviewed with the committee the proposed strategy for implementation of the new plan, including the transition to a broader, system-focused role for the interagency group, with additional information to be provided at future meetings.

**Report from the Apprenticeship and Training Advisory Committee (Oral Report)**

Robert Cross reported that the apprenticeship and training advisory committee met yesterday. He noted that two members were reappointed to the committee and that two new members were appointed. Mr. Cross reported that the committee heard updates on: the current status of Chapter 133 funding for apprenticeship training programs from Desi Holmes of the Texas Workforce Commission; the apprenticeship instructor training funded by Chapter 133 from Phillip McEndree of Texas A&M University; and the federal apprenticeship initiatives from Dudley Light, a regional representative at the U.S. DOL Office of Apprenticeship.

**Consideration of the Fiscal Years 2016–2023 Strategic Plan for the Texas Workforce System (Action Item)**

Mr. Jurey called on Ms. Rector to introduce the item. She reviewed the development process for the strategic plan, the public comments that were received since the June meeting, and the related changes that were incorporated into the plan. She also stated specifically the action that members were being asked to consider.

Mr. Jurey then made a motion that the Council approve the fiscal years (FY) 2016–2023 strategic plan for the workforce development system, to include both Formal and Less Formal performance measures, and to recommend the plan to the Governor for final approval and signature. Thomas Halbouty seconded the motion. The motion was approved by unanimous voice vote.

**Briefing on the Fiscal Year 2015 Council Work Plan Achievements and Consideration of the Fiscal Year 2016 Council Work Plan (Action Item)**

Mr. Jurey called on Ms. Rector to brief members. Ms. Rector reported that all objectives in the FY 2015 work plan had been met, including completion of the Sunset advisory commission process and reauthorization of the Council's legislation. She then reviewed the Council's FY 2016 work plan functions under each of its six primary roles, including its new role of skill standards administration. Ms. Rector also noted, under the internal administration role, that the Council's memorandum of understanding (MOU) with its state agency partners was due to be reviewed and updated. Ms. Rector ended her comments by noting that the Governor's Office had requested that Council staff coordinate and facilitate the processes related to the call for and selection of—via selection committee—Wagner-Peyser 7(b) grant applications.

Mr. Jurey called for a motion to approve the FY 2016 Council work plan. Mr. Cross so moved. Richard Rhodes seconded the motion. The motion passed by unanimous voice vote.

**Briefing on the Texas Legislative Session – Final Report**

Mr. Jurey called on Council staff Kristin McEntyre to present the item. Ms. McEntyre began by reminding members that Council staff had monitored the progress of bills introduced during the 84<sup>th</sup>

Texas legislative session that were relevant to the workforce system, including those with an impact on federal or state programs within the system; partner agencies; and the Council. She referred members to the end-of-session report, which summarized each of the tracked bills and its legislative outcome. She noted that 22 of the tracked bills became law, and reviewed the most pertinent ones.

**Briefing on *Evaluation 2015: Accomplishments and Outcomes of the Texas Workforce System***

Mr. Jurey called on Council staff Laura Pittman to brief members. Ms. Pittman reminded members that they would consider the final summative report on implementation of the workforce system strategic plan, *Advancing Texas*, which is required by statute, at the December meeting. She then reviewed the content and structure of the report, which will include final versions of all 14 agency action plans, as well as summary and standard report sections.

**Briefing on Workforce Innovation and Opportunity Act – Requirement for Infrastructure Funding**

Mr. Jurey called on Ms. McEntyre to present the item. Ms. McEntyre briefed members on the provision of the Workforce Innovation and Opportunity Act (WIOA) that requires local workforce boards to reach agreement with one-stop delivery system partners on sharing of infrastructure costs through a MOU. She reviewed the purpose and types of infrastructure costs and the local and state funding mechanisms that may be used. Ms. McEntyre also noted the limitations of each partner's contribution to the infrastructure costs, and the required contents of the MOU.

After Ms. McEntyre's presentation, Mr. Jurey asked Reagan Miller, TWC representative, and Veronda Durden, DARS Commissioner, to comment on the transfer of the vocational rehabilitation program between their agencies and the requirement to share infrastructure costs. Ms. Miller briefly commented that cost sharing agreements between the two agencies had been negotiated and agreed upon. Commissioner Durden concurred with Ms. Miller's comments.

**Briefing on the Research Approach: Defining Middle-Skill STEM Occupations in Texas**

Mr. Jurey called on Ms. Rector to introduce the item; following remarks to assist members to connect a number of pieces of the Council's work, Ms. Rector then called on Council staff Royce Wu to present the item. Mr. Wu provided members with a broad introduction to middle-skill STEM occupations, followed by the scope of the planned research including the classification method for STEM occupations, and concluded with the research steps that would result in a comprehensive report to be presented to Council at its December meeting.

**Briefing on Skill Standards in Texas – An Overview of the System, Guidelines, and Functions**

Mr. Jurey called on Ms. Rector to introduce the item. Ms. Rector provided members with the historical context for their consideration in viewing the presentation. She informed members that the Texas Skill Standards Board (TSSB) has historically operated as an unfunded mandate to accomplish the duties transferred to the Council under its Sunset reauthorization legislation, thereby limiting the scope of the skill standards system. Council staff member Anne Dorsey then presented the item, including the origins and history of the TSSB; a review of the Sunset advisory commission's findings that led to the skill standards-related recommendations in the Council's reauthorization legislation; the Council's new charge under the legislation; and a description of the infrastructure, policies, and partners of the skill standards system.

**ADJOURN**

Mr. Jurey called for a motion to adjourn the meeting. Mr. Dunn moved to adjourn. Mr. Cross seconded the motion. The motion was approved by unanimous voice vote. The meeting adjourned at 10:45 a.m.

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**TWIC ACTION ITEM  
MEMORANDUM**

REF: LLP.twic.II3.120415

**TO** Council Members**SUBJECT** *Evaluation 2015: Accomplishments and Outcomes of the Texas Workforce System*

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**Introduction**

Each December, the Texas Workforce Investment Council (Council) considers for approval an annual evaluative report on Texas' workforce system. Statute specifies that this report inform the Governor and the legislature on the implementation of the system strategic plan and on the programs and performance of the workforce system.

The 2015 report is the summative evaluation for the *Advancing Texas: Strategic Plan for the Texas Workforce System (FY2010-FY2015)* (*Advancing Texas*) strategic plan period.

**Background**

Texas Government Code, Section 2308.104, specifies that the Council prepare an annual report on implementation of the strategic plan, including an analysis of system performance based upon the Formal and Less Formal performance measures approved by the Governor. The Council is also required to report on local workforce board and adult education activities, as well as work development programs that focus on welfare to work initiatives.

The report card series continues to be a focal point, providing an analysis of system and program performance. System partners are responsible for the delivery of 24 programs and services focused on education, workforce education, and workforce training services. The Council collects and disseminates funding information and performance data on 19 workforce programs, as well as five academic education programs at the secondary and postsecondary levels. Information and data from these five programs assist in understanding the scope and effort of program delivery through high schools and community and technical colleges, and these entities' efforts to prepare students to transition to further education or enter the workforce.

In conjunction with the system strategic plan, *Advancing Texas*, Formal and Less Formal measures were approved by the Governor on October 23, 2009. Formal measures are those that are essentially consistent across all workforce programs. Less Formal measures provide information essential to implementation of the workforce system strategic plan.

Council members received a detailed outline of the report and development timeline in September 2015.

**Attachment**

1. *Evaluation 2015: Accomplishments and Outcomes of the Texas Workforce System*

**Discussion**

The 2015 evaluation report is the summative evaluation report for the *Advancing Texas* strategic plan period. It includes analysis of program and system performance based upon the Formal and Less Formal

performance measures approved by the Governor, as well as local workforce board and adult education activities, and an overview of system partner progress in implementing the six-year plan. Final versions of all action plans are included, as well as an overview with 12-year performance trend information and a table denoting the following for all 14 plan objectives: key performance area, critical business issue, long term objective, and final status.

The 2015 evaluation report provides information on five components that the Council is required by statute to address:

- ▶ Texas Government Code, Section 2308.104(a), requires the Council to report annually to the Governor and the legislature on the implementation of the workforce system strategic plan, *Advancing Texas*. This plan, and the long term objectives contained within it, was developed by the Executive Committee in its capacity as the Council's strategic planning committee, and representatives from all system partners, and approved by the Governor in 2009.
- ▶ Texas Government Code, Section 2308.104(a), also requires the Council to report annually on Formal and Less Formal measures. Statute specifies that Formal measures are those that are essentially consistent across all workforce programs, and that Less Formal measures provide information essential to implementation of the workforce system strategic plan. The measures and their associated targets, where applicable, were negotiated with partner agencies before approval by the Council and final approval by the Governor.
- ▶ Texas Government Code, Section 2308.1016, mandates that the Council facilitate the efficient delivery of integrated adult education services in Texas, in part, by evaluating the adult education and literacy services administered by the Texas Education Agency (TEA) [*sic*] and the Texas Workforce Commission (TWC).
- ▶ Texas Government Code, Section 2308.304(b)(4), specifies that local board plans must include a strategic component that sets broad goals and objectives for local workforce programs. These goals must be consistent with statewide goals, objectives, and performance standards.
- ▶ Texas Government Code, Section 2308.101(14), requires the Council to report annually on work development programs that focus on welfare to work initiatives.

This evaluation report is the Council's key strategy for fulfilling the statutory responsibilities outlined above. It does not duplicate reports that are required by the Legislative Budget Board or other federal or state agencies with funding or oversight responsibility for a given workforce system program(s).

#### Report Structure

The report's focal point is a series of report cards with outcome data for program and system performance attributable to the efforts and actions of partner agencies and the delivery arms of those agencies—local workforce boards and workforce centers, community and technical colleges, independent school districts, and local adult education providers. Major report sections include:

- ▶ *Advancing Texas Summary* – As the final evaluation for *Advancing Texas*, the report includes an overview section with 12-year performance trend information. In addition, it includes a table denoting the following for all 14 plan objectives: key performance area, critical business issue, long term objective, and final status. The accompanying narrative provides an overview of key accomplishments during the six-year plan period.

- ▶ *Introduction* – This section sets the context for the report with regard to the Council and its reporting requirements. It also provides an overview of the report card series and structure, as well as data decisions, treatment, and related limitations.
- ▶ *Report Card Series* – This section includes the series of five report cards. The *system* report card shows aggregate system performance. *Performance measure* report cards are included for each of the four Formal measures and show program performance data for three key participant groups: adults, adults with barriers, and youth. All cards include a one-year change rate and a cumulative rate that aggregates the rate of change from the applicable baseline to the current year. [Texas Government Code, Section 2308.104(a)]
- ▶ *Less Formal Measures and Benchmarks* – There are six Less Formal measures derived from the action plans contained in *Advancing Texas*. Information on measures and performance data are included. [Texas Government Code, Section 2308.104(a)]
- ▶ *System Accomplishments* – The action plans in *Advancing Texas* outline the steps to be taken to accomplish the plan's objectives. This section provides a summary of how those plans have been implemented by partner agencies and monitored by the Council's System Integration Technical Advisory Committee. [Texas Government Code, Sections 2308.104(a) and 2308.304(b)(4)]
- ▶ *Adult Education and Literacy* – Statute requires that the Council evaluate adult education and literacy services administered by the TWC. The two adult education-related action plans are addressed in the System Accomplishments section. This section provides an overview of the program's transfer to and administration by the TWC; the Texas Success Initiative—a state-legislated program designed to improve student success in higher education; and future considerations. [Texas Government Code, Section 2308.1016]
- ▶ *Local Workforce Board Alignment with Advancing Texas* – Local board plans must include a strategic component that sets broad goals and objectives for local workforce programs that are consistent with statewide goals, objectives, and performance standards. This section includes a brief overview of local board planning requirements, information regarding local board input into the development of the new system strategic plan, and implementation of the Workforce Innovation and Opportunity Act of 2014. (Public Law 113-128). [Texas Government Code, Section 2308.304(b)(4)]
- ▶ *Concluding Comments* – This section includes a review of issues identified in the 2014 report as requiring action by system partners: (1) adult education and literacy services and (2) system strategic plan implementation and reporting. [Texas Government Code, Section 2308.1015(b)(1)]
- ▶ *Appendix 1 – Advancing Texas Action Plans*: The attachment includes final versions of all 14 action plans.
- ▶ *Appendix 2 – Data Addendum to Evaluation 2014*: This year the TEA, the Texas Veterans Commission, and the TWC identified a need to revise prior-year data. In addition, the Council requested that the Texas Higher Education Coordinating Board submit revised Less Formal measures data for the 2014 reporting cycle in order to have complete, final data set(s) for both measures. The addendum is provided to publish and disseminate revised data for these four agencies.



- ▶ *Appendix 3 – Program Levers – Contributions to Trend Line Changes:* This appendix provides additional general observations about the Performance Trend Data 2004–2015 chart presented in the overview, focusing on key changes (and year first reported) occurring over the 12-year period.

**Recommendation**

It is recommended that the Council approve the 2015 workforce system evaluation report for submission to the Governor and the legislature. It is further recommended that the Council authorize the Chair to approve any final edits.

# Evaluation 2015

Accomplishments and Outcomes of the Texas Workforce System

Texas Workforce Investment Council  
December 2015



## OVERVIEW

The Texas Workforce Investment Council (Council) was created in 1993 by the 73<sup>rd</sup> Texas Legislature. As an advisory body to the Governor and the legislature, the Council is charged with promoting the development of a well-educated and highly skilled workforce for Texas, and assisting with strategic planning for and evaluation of the state's workforce development system. As part of that responsibility, the Council annually reports to the Governor and the legislature on the degree to which the system is achieving state and local workforce goals and objectives. This is the final evaluation report for the fiscal years (FY) 2010–15 system strategic plan period.

Texas' workforce system comprises the workforce programs, services, and initiatives administered by eight state agencies and 28 local workforce boards, as well as independent school districts, community and technical colleges, and local adult education providers. System partners are responsible for a wide range of programs and services that focus on education, workforce education, and workforce training.

This is a vital role given how critical the number, skills, and education levels of workers are to the continued strength of the state's economy. Texas fared better than most states during the recession, and earned national acclaim for job growth after the recovery began in mid-2009.<sup>7</sup>

Systemic changes, by nature, are difficult given the different federal and state legislative and regulatory requirements associated with the myriad of funding sources available to system partners. Of note, key structural changes occurred over the six-year plan period:

- ▶ *Juvenile Justice* – Senate Bill (SB) 653 (82<sup>nd</sup> Legislature) abolished original system partner, the Texas Youth Commission (TYC), and the Texas Juvenile Probation Commission. Effective December 1, 2011, duties assigned to the two agencies were transferred to the newly created Texas Juvenile Justice Department.
- ▶ *Adult Education* – As required by SB 307 (83<sup>rd</sup> Legislature), administrative responsibility for adult education and literacy programs transferred from the Texas Education Agency to the Texas Workforce Commission (TWC). The program was transferred on September 1, 2013.

### Texas Economy Highlights

- ★ *The Texas seasonally adjusted unemployment rate fell to 4.1% in August 2015, the lowest rate of unemployment since January of 2001. The Texas rate continued to trend below the national rate of 5.1%. The state gained 217,700 nonagricultural jobs over the past year.*<sup>1</sup>
- ★ *Texas is home to 107 Fortune 1000 companies—more than any other state—and ranked second with 54 in the Fortune 500, according to Fortune Magazine's 2015 rankings.*<sup>2</sup>
- ★ *For the eleventh year in a row, Texas topped the 2015 'Best & Worst States for Business' ranking by CEOs.*<sup>3</sup>
- ★ *Texas earned the 2014 Governor's Cup—its third consecutive—recognizing the top performing state for capital investment attraction, based on total project activity.*<sup>4</sup>
- ★ *Texas claimed the top spot on the 'Best States to Make a Living 2015', scoring well across the board on a variety of employment conditions that contribute to a healthy economy.*<sup>5</sup>
- ★ *In 2015, small business owners gave Texas the highest rating (A+) for friendliness to small business for the fourth consecutive year.*<sup>6</sup>

<sup>1</sup> TWC press release (September 18, 2015).

<sup>2</sup> <http://fortune.com/> and [www.geolounge.com/](http://www.geolounge.com/).

<sup>3</sup> <http://chiefexecutive.net/> (May 7, 2015).

<sup>4</sup> [www.siteselection.com/](http://www.siteselection.com/) (March 2015).

<sup>5</sup> [www.money-rates.com/](http://www.money-rates.com/) (June 23, 2015).

<sup>6</sup> [www.forbes.com/](http://www.forbes.com/) (August 18, 2015) and [www.thumbtack.com/survey/](http://www.thumbtack.com/survey/).

<sup>7</sup> <http://businessclimate.com/> (April 26, 2012).

- ▶ *Postsecondary CTC Corrections* – As required by SB 1 (83<sup>rd</sup> Legislature), administrative responsibility for postsecondary education programs transferred from the Windham School District to the Texas Department of Criminal Justice’s Rehabilitation Programs Division, effective September 1, 2013.

### ***Advancing Texas and Evaluation 2015***

Working with system partners, the Council completed a yearlong planning process in September 2009. The result of that process was *Advancing Texas: Strategic Plan for the Texas Workforce System (FY2010–FY2015) (Advancing Texas)*, which was approved by the Governor on October 23, 2009. Building on the systems approach to workforce planning first incorporated into the previous system strategic plan—*Destination 2010—Advancing Texas* served as the blueprint for Texas’ workforce system over the last six years.

In accordance with Texas Government Code, Section 2308.104, the plan established a framework for budgeting and operation of the state’s workforce system. It was reviewed and updated in 2012 to indicate accomplishments and milestones achieved, as well as other applicable changes to the action plans.

The Council’s *Evaluation 2015* report is the summative evaluation of the *Advancing Texas* strategic plan period. As such, it includes analysis of system performance based on the Formal and Less Formal measures approved by the Governor, as well as local workforce board and adult education activities, welfare-to-work initiatives, and partner progress in implementing the plan’s objectives. Final versions of all 14 action plans are included in Appendix 1.

### **System Integration Technical Advisory Committee**

Formed in late 2003 under the previous system strategic plan, the Council’s System Integration Technical Advisory Committee (SITAC) continued to work collaboratively to address critical workforce issues that face Texas. SITAC was charged with implementation of *Destination 2010* and *Advancing Texas* and authorized to create and deploy cross-agency teams to attain integrated solutions to issues associated with implementation of each plan’s long term objectives.

Working within their own organizations and with other system partners, current and past SITAC members worked to strengthen system alignment and played a major role in the accomplishments realized over the last twelve years. Through increased collaboration, system partners leveraged opportunities in order to accomplish the majority of both plans’ objectives and continued to build relationships and processes that will ensure additional progress in the future. Under *Advancing Texas*, progress was made in many areas, including:

- ▶ career and technical education,
- ▶ dual credit offerings,
- ▶ adult education programs for those with low literacy or English language skills,
- ▶ employer use of and satisfaction with system products and services, and
- ▶ the use of employment data for program improvement.

### **Addressing Critical Business Issues**

Critical business issues are those with system-wide challenges that are expected to have a direct impact on achievement of strategic goals and key performance measures. Eight critical business issues—with 13 associated critical success factors and 14 long term objectives—were addressed during the six-year plan period. Those critical issues were grouped into three key performance areas: Systems, Operations, Competencies, and Integration; Customer Outcomes; and Programs, Products, and Services.

Significant progress was made with regard to the issues identified during development of *Advancing Texas*.

- ... integrated academic and career and technical education options**
- Collaboration between workforce and education continued to increase over the plan period. System partners worked together and independently to offer programs and services that were both more effective and available on a more timely basis. Strides were made to improve and expand career pathways for current and future workers through dual credit offerings, Early College High Schools, and initiatives such as Accelerate Texas that integrates basic skills with career and technical pathways to help adult students acquire skills and certificates in high-demand occupations.
- ... target populations as employment assets**
- Advancing Texas* identified veterans and individuals with disabilities as populations that must be considered in the pool of potential employees required by employers. In general, employment and retention outcomes exceeded targets following the economic recovery.
- Partner agencies collaborated to develop new and enhance existing methods, programs, and processes for programs targeted at the English language learner and workforce literacy over-age-17 populations. Elements of the pilot models have been incorporated in ongoing service delivery requirements for career pathway programs.
- ... data support planning and economic growth**
- When developing new or expanding programs for in-demand middle-skills occupations, community and technical colleges consider program delivery methodologies and structures to increase both effectiveness and cost efficiency. The availability of improved supply/demand data, as well as the increased identification and sharing of best practices supported continuous improvement.
- Planned development of a new, publicly accessible Texas supply and demand analysis internet portal will further improve the quality and availability of workforce data—benefiting workforce system partners, employers, and consumers.
- ... more workers with essential middle skills**
- The Council provided leadership on two plan objectives to address employer demand for skilled workers, working with system partners and stakeholders to increase awareness of career and technical education as a desirable career option and also to expand the earn-while-you-learn model of registered apprenticeship.
- Several registered apprenticeship projects were studied, with a focus on those developing a new program in a target occupation or modifying an existing program by incorporating the increased flexibility afforded by revised federal regulations, such as offering training through distance learning.
- ... relevant local and regional workforce programs and services**
- Local workforce boards provided programs and services to Texas' employers and job seekers, including target populations identified in *Advancing Texas*—veterans, individuals with low literacy or poor English language proficiency, and blind or disabled Texans. Boards increasingly collaborate locally and regionally by working with other boards and system stakeholders, leveraging resources, and ensuring that services are delivered efficiently and effectively to job seekers and employers across workforce areas.

**... increased employer confidence in system products and services**

Employer confidence in system products and services increased over the life of the plan. Building on work started under the previous system strategic plan, partner agencies used employer survey and performance data to identify training and service needs and to identify modifications to current programs and services to better suit workforce requirements. In addition, data supported measurement of employer satisfaction and provided a resource for agency strategic plan development, grant applications, and in preparation for future legislative sessions.

## **Texas Workforce System – Performance Trend Data 2004–2015**

The Council is required by statute to report program-level data and to provide an overall assessment of implementation of the workforce system strategic plan.<sup>8</sup> In the Council's annual evaluation report, workforce system performance is presented in a series of five report cards that contain data reported by partner agencies for the Formal and Less Formal measures approved by the Governor. Aggregate data are presented on the four Formal measures report cards and on the System report card.

### **Workforce System Formal Measures**

System measures are outcome oriented. They establish responsibility for end outcomes or outputs that are central to the system's success. These measures are essentially consistent across workforce programs and consist of the Formal measures found in partner agencies' performance measures for state-based budgeting and reporting. Four Formal measures approved by the Governor in 2003 remained in effect and were incorporated into *Advancing Texas*:

- ▶ *Educational Achievement* – Number and percent of all program participants who obtain a degree, other credential of completion, or complete the level enrolled in either a training or educational program.
- ▶ *Entered Employment* – Number and percent of all program participants who secure employment after exiting a program.
- ▶ *Employment Retention* – Number and percent of all program participants who retain employment at a specified point after exiting a program.
- ▶ *Customers Served* – Number of employers and individuals who received system services, including program participation.

### **The Report Card Series: Data Treatment and Limitations**

The System report card shows the performance of Texas' workforce system and includes totals for each of the four Formal measures that have been aggregated and weighted by the number of program participants. The card also shows the number, percent where applicable, and rates of change for the Formal and Less Formal measures. The total should be viewed only as a good approximation of overall system performance.

The Council believes that the report card series is a useful tool to illustrate overall system performance, but the data presented should be taken in context. Most programs are designed to serve participants that meet specific eligibility criteria and have unique needs. Accordingly, program objectives and desired outcomes vary, and approved data definitions and methodologies are program-specific. Additionally, integrated service delivery strategies may result in duplication of customer counts across programs. The System report card contains aggregate data for all agencies' applicable programs by measure as noted on the Formal measure report cards. Due to known duplicates that cannot be removed from program-

<sup>8</sup> Texas Government Code, Section 2308.104.

level data, adjustments are calculated at the System level, with unduplicated data footnoted as applicable.

- ▶ *Program-Level Reporting* – As required by statute, data are presented by program rather than by agency. System partners are responsible for the delivery of 24 programs and services focused on education, workforce education, and workforce training for three participant groups: adults, adults with barriers, and youth. The Council collects and disseminates performance data and funding information on 19 workforce programs, as well as five academic education programs at the secondary and postsecondary levels. Information and data from these five programs assist in understanding the scope and effort of program delivery through high schools and community and technical colleges, and these entities' efforts to prepare students to transition to further education or enter the workforce.
- ▶ *Agency Negotiation* – During 2004 data definition and methodology negotiations, the Council requested that where federal common definitions were relevant, those definitions and program periods be used. The intent was to lessen the differences between data sets, thereby achieving a higher degree of relatedness and relevance when aggregating data across multiple programs. Undertaken again in 2009 for *Advancing Texas*, the negotiations resulted in some definitions and program periods that differed slightly from those used during the previous strategic plan period. Occasionally, the methodology for a given program/measure may be modified during a strategic plan period (e.g., technological improvement or correction, legislative or regulatory requirement). Where possible, the agency provided revised prior year data, with exceptions footnoted in the evaluation report.
- ▶ *Unduplicated Data* – In most cases, data are unduplicated and conform to reporting definitions and methodologies agreed to by partner agencies. However, in some instances duplicate data are included in a report card. For example, Educational Achievement data may include duplicate data where a participant has outcomes for both education and training programs. Where known, these instances are footnoted on the measures report card (e.g., Postsecondary CTC Corrections: Educational Achievement and Customers Served). Programs of the TWC include duplicate data when a participant is enrolled in more than one program or service. The TWC does not adjust these duplicates at the program level, but does adjust them at the aggregate level for each Formal measure.

The System report card presents aggregate performance for the four Formal measures. Each is footnoted to show the rate or count, where necessary, adjusted to exclude duplicate TWC customers. The adjustment also takes into account Veterans Employment and Training customers, typically served through local workforce centers. Adjusted rates are typically less than one percentage point difference. For example, in 2015 the aggregate Employment Retention rate was 84.02% compared to 84.03% adjusted.

- ▶ *Data Revisions* – Each year, one or more partner agencies typically identify the need to submit corrected data for prior reporting cycle(s). Percentage point differences published in the report card series and all report narrative reflect the revised data, which are published in the **Data Addendum**.

### ***Program Levers – Contributions to Trend Line Changes***

As required by statute, the annual evaluation report presents data by program rather than by agency. It includes information on performance levels that vary significantly (+/-5%) from the prior year. Conversely, the longitudinal trend lines present a summary-level view of system performance based on data from up to 24 programs and services focused on education, workforce education, and workforce training for three participant groups: adults, adults with barriers, and youth. The 24 programs included in the report card series, along with the short titles used in the Council's annual evaluation report, are listed in the main report and in Appendix 3, which also includes more detailed information on program levers.

This overview provides general observations about the **Formal Measures: 2004–2015** chart (page vii), focusing on key changes (and year first reported) occurring over the 12-year period. It is based on



information and data reported by partner agencies for the Council's annual evaluation reports in the referenced years.

Typically defined and treated as a lag measure, Customers Served may be used as a lead measure for the purpose of system strategic planning given its tie to program infrastructure usage and capacity. This measure indicates the total number of individuals served by all system programs and services, and fluctuates based on factors such as the state of the economy and available funding for each program. Educational Achievement, Entered Employment, and Employment Retention are rate, or outcome, measures and the percentages reported for these measures are the weighted aggregate of multiple workforce programs. At the program level, these measures generally remain fairly consistent over time and are comparable within a reporting year and across reporting years.

### **Summary**

The recession and ensuing recovery were a major contributing factor to trend shifts over the 12-year period. As noted in *Evaluation 2013*, data reported for all Formal measures had shown the effects during and since recovery from the economic recession. This was true to some degree in *Evaluation 2009* for Customers Served, and began to be evidenced in 2010 for the employment-related measures due to delay in receiving and analyzing unemployment insurance wage records for measuring performance.

While minor changes occur across programs and over time, other key changes that affected the trend lines include federal or state legislation and policy changes, as well as significant increases or decreases in federal or state funding levels, including funding under the American Recovery and Reinvestment Act of 2009 (ARRA) (Public Law 111-5). Customers Served, as the most volatile trend line, clearly shows customer growth during the recession and a slow decline thereafter. During the recession, more Texans needed workforce programs and services, just as more students accessed higher education. These situations, combined with the influx of ARRA funding, created a significant increase in demand for services available through Texas' workforce system.

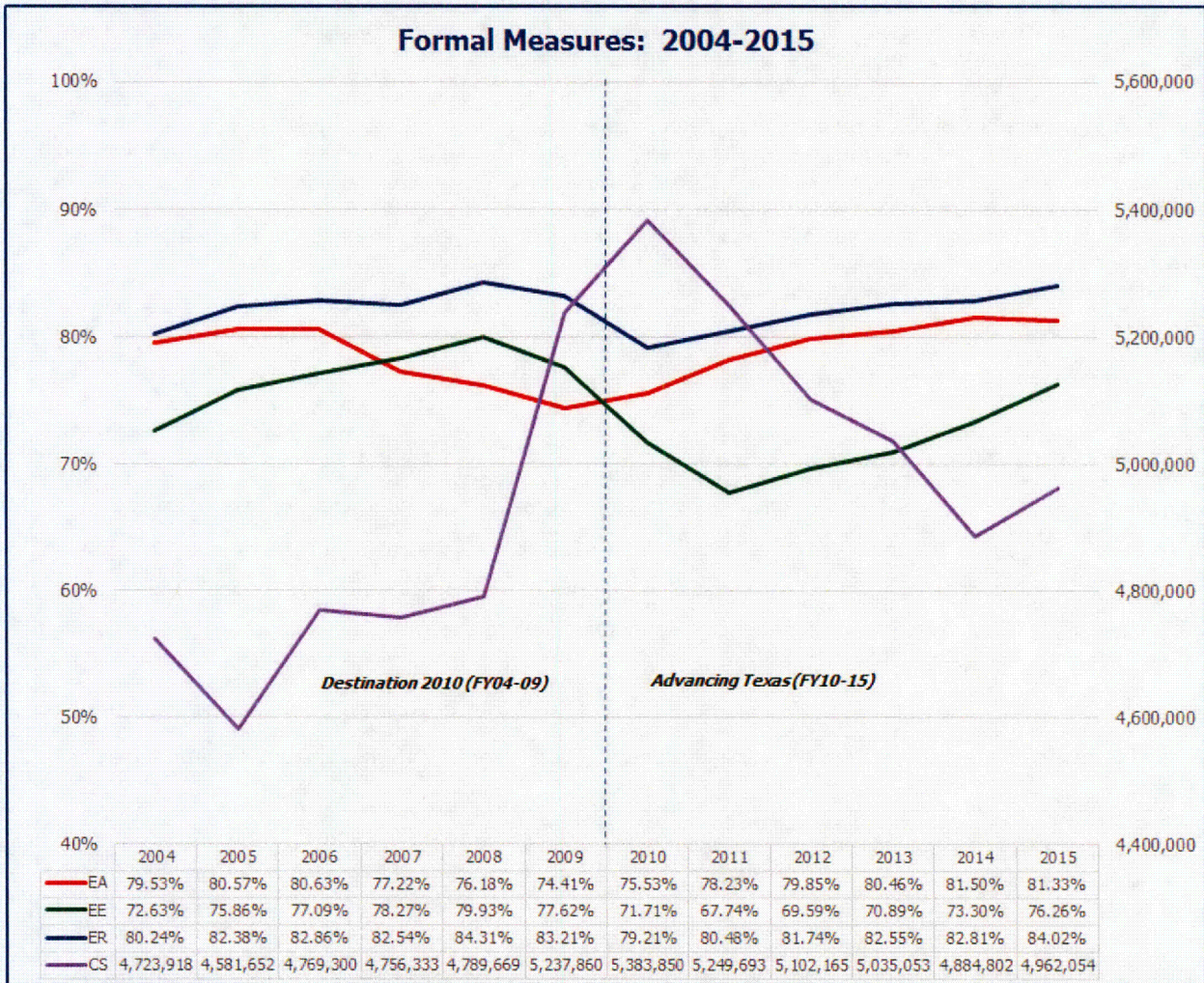
The longitudinal trend lines for Educational Achievement, Entered Employment, and Employment Retention demonstrate consistent performance across time. The recessionary period is evident in data reported by agencies from 2009 through 2011. Despite the fact that Texas fared far better than most states during the recession, both Entered Employment and Employment Retention moved downward by significant percentage points. In 2012 and 2013, these data trends had not yet returned to their pre-recession highs; however, by 2015, both trends approached their pre-recession levels. While there is no definitive causal information to which this movement can be attributed, it is likely that these are the tail ends of the higher unemployment, business contraction, and significantly reduced hiring by employers during that period.

While these employment measures were trending downward during the recession, Educational Achievement was trending upward. Higher enrollment in postsecondary institutions is often evidenced during periods of economic contractions or recession, and this is consistent with patterns during previous recessionary periods.

**Trend Data**

The chart presents aggregate data for the four Formal measures, covering two workforce system strategic plan periods: *Destination 2010* (FY04–FY09) and *Advancing Texas* (FY10–FY15). The three-dimensional format presents:

- ▶ Data table (bottom) – Formal measures data, by year, with a key and exceptions noted in the table below.
- ▶ Formal measures in rates (left axis) – Percentages for Educational Achievement (EA), Entered Employment (EE), and Employment Retention (ER).
- ▶ Formal measure in count (right axis) – Numeric value for Customers Served (CS).



	Formal Measure	Exceptions (Years Included)	Exclusions <sup>9</sup>
Key	EA	Educational Achievement	Secondary Technical Corrections (2009–forward) Self-Sufficiency Fund (2004–2008) Skills Development Fund (2004–2008)
	EE	Entered Employment	-
	ER	Employment Retention	Secondary CTE (2004–2008) Youth WIA I (2009–forward)
	CS	Customers Served	-

<sup>9</sup> Project Re-Integration of Offenders (RIO) was not funded for the FY 2012–13 or 2014–15 biennia. The TWC submitted available data for applicable measures through 2012. Data for this program are not included in trend information presented in the chart.

**Advancing Texas Achievements**

The following table denotes for all 14 plan components: key performance area, critical business issue, long term objective, summative outcome, and final data and initial data received, where appropriate, to demonstrate change over the plan period.

**Key Performance Area: Systems, Operations, Competencies, and Integration**

Objective	Summative Outcome, with final data and baseline data, where appropriate
<p><b><i>Critical Business Issue: Need for enhanced and more effective integration of academic and career and technical education (CTE) options at secondary and postsecondary levels to assist students to graduate and transition to further education or the workforce, and to reduce dropouts.</i></b></p>	
<p>Produce each biennium, commencing in 2010, a report that documents an assessment of the number and type of postsecondary education and training credentials (certificate, level two certificate, associate, bachelor's and advanced degrees) required to match the demand for a skilled and educated workforce. The assessment will include the number of forecast net job openings by occupation at each level of postsecondary education and training and the number of credentials needed to match that forecast. [S1]</p>	<p>Partner agencies collaborated to improve available supply-demand data and developed user scenarios to assist with data analysis. Awarded in 2015, a three-year federal grant will support development of a new Texas supply and demand analysis internet portal.</p>
<p>By 2013, Texas will decrease high school dropout rates by implementing rigorous Career and Technical Education (CTE) as a part of the recommended or advanced high school graduation program. [S2]                  ▶ CTE Concentrator Graduates</p>	<p>82.33% – 2015 (79.43% – 2010)</p>
<p><b><i>Critical Business Issue: Lack of alignment and clarity in educational policy and regulation for secondary and postsecondary transitions is limiting efficiency and effectiveness of overall educational outcomes.</i></b></p>	
<p>By 2013, education and training partners will have the infrastructure necessary (policies, procedures, data processes, rules, and capabilities) to facilitate the effective and efficient transfer of academic and technical dual credit courses from high schools to community colleges and four-year institutions. [S3]</p>	<p>Significant strides were made to improve and expand dual credit offerings and Early College High Schools, as well as the infrastructure supporting these and other initiatives designed to facilitate course transfer and consistency between educational institutions and systems.</p>
<p><b><i>Critical Business Issue: Career and technical education is perceived by many as a less desirable career option.</i></b></p>	
<p>By 2013, design and implement a demonstration program targeted to improve perception of career options that career technical education (CTE) programs enable. [S4]</p>	<p>The Council researched, identified, and validated best practices for providing information to improve understanding of educational pathways to careers; convened a workgroup to develop a model based on findings in the report; and published a guide detailing the model developed using the best practices research.</p>

**Key Performance Area: Customer Outcomes**

Objective	Summative Outcome, with final data and baseline data, where appropriate
<b><i>Critical Business Issue: Everyone must be part of the critical pool of potential employees that is and will be required by Texas employers, especially in target populations.</i></b>	
By 2013, the blind and disabled populations will achieve additional employment outcomes. [C1] <ul style="list-style-type: none"> <li>▶ Blind Services Entered Employment</li> <li>▶ Rehabilitation Services Entered Employment</li> <li>▶ Blind Services Employment Retention</li> <li>▶ Rehabilitation Services Employment Retention</li> </ul>	70.08% – 2015 (70.16% – 2009) 66.60% – 2015 (56.91% – 2009) 88.41% – 2015 (86.71% – 2009) 87.36% – 2015 (85.90% – 2009)
By 2013, the veteran population will achieve additional employment outcomes. [C2] <ul style="list-style-type: none"> <li>▶ Veterans E&amp;T Entered Employment</li> <li>▶ Veterans E&amp;T Employment Retention</li> </ul>	72.89% – 2015 (75.49% – 2009 revised) 86.40% – 2015 (86.93% – 2009 revised)
By 2013, design and implement integrated Adult Basic Education and workforce skills training programs to enhance employment outcomes for the English language learner population. [C3] <ul style="list-style-type: none"> <li>▶ Vocational ESL Graduates</li> <li>▶ Vocational ESL Employment</li> </ul>	69 – 2014 (111 – 2012) 59.42% – 2014 (56.19% – 2012)
By 2013, design and implement targeted Adult Basic Education programs to enhance employment outcomes for populations requiring workplace literacy skills. [C4] <ul style="list-style-type: none"> <li>▶ Workforce Literacy Employment</li> <li>▶ Workforce Literacy Graduates</li> </ul>	— 506 – 2013 (482 – 2012)  The TWC's initial request for proposals incorporated key elements of the pilot model by requiring service providers to implement career pathways programs. The commission's goal is to incrementally increase the proportion of students who exit workforce services ready for work, or who are enrolled or co-enrolled in college and career training. This model provides opportunities for literacy and basic educational development and ensures these services link students at all academic and English levels with employment, training, and college opportunities.

**Key Performance Area: Programs, Products, and Services**

Objective	Summative Outcome, with final data and baseline data, where appropriate
<b>Critical Business Issue: Increasing shortage of workers with appropriate middle skills created by a skills gap and future workforce retirements in a wide range of industries and occupations.</b>	
Community and technical colleges (CTCs) will plan and execute education and training programs to address workforce skills gaps in their regions, as identified by local needs assessments or the biennial supply-demand report produced by the THECB and TWC. [P1]	<p>The THECB and Council surveyed the CTCs to collect information on their strategies for determining employer satisfaction and using that information in institutional planning processes to improve program delivery. Models of promising practices were selected and formally recognized by the Council.</p> <p>The Council contracted with the University of Texas' Ray Marshall Center to assess the availability and capabilities of supply and demand planning tools in Texas and other states.</p>
By 2012, design, develop, and implement a pilot program to demonstrate flexibility of the 'earn while you learn' model of traditional apprenticeship programs. Where appropriate, expand and replicate into new occupational areas by 2015. [P2]	Four of six projects remained active through the pilot period or the end of their federal grant period, as applicable. The recession presented challenges to implementation, which continued through the recovery period. The Council's final report documented promising practices and lessons learned, including models for new occupations and approaches—such as distance learning.
<b>Critical Business Issue: Data is required to ensure that system initiatives will be developed and executed to strategically position Texas in the global marketplace.</b>	
The Council will produce a data set whereby system stakeholders can ascertain Texas' position relative to key indicators of competitiveness. [P3]	The Council compiled the <i>Texas Index</i> through 2013, providing a series of indicators that showed the state's general workforce, education, and economic health.
<b>Critical Business Issue: Local workforce boards must understand and meet the needs of their local communities because they are the system's front line partner in offering relevant programs and services.</b>	
Local boards will align with and support the workforce system strategic plan through their planning processes and related initiatives. This will be documented in board plans and plan modifications, which are submitted to the Council for approval. [P4]	Local boards provided programs and services to Texas' employers and job seekers, including target populations identified in <i>Advancing Texas</i> . They collaborated locally and regionally with other boards and system stakeholders to improve the efficiency and effectiveness of workforce programs and services.
<b>Critical Business Issue: Existing data gap regarding employers' needs and customer satisfaction hinders the ability to assess whether existing programs and services are adequately meeting customer requirements.</b>	
<p>Partner agencies will gather data from employer customers at appropriate intervals to determine employer needs and satisfaction. [P5]</p> <ul style="list-style-type: none"> <li>▶ HHSC-DARS: Employer Satisfaction</li> <li>▶ THECB: Project modified and completed in 2011</li> <li>▶ TVC: Employer Satisfaction</li> <li>▶ TYC: Project modified and completed in 2011</li> <li>▶ TDCJ-Windham: Employer Satisfaction</li> </ul>	<p>85.71% – 2015 (83.02% – 2012)</p> <p>—</p> <p>88.10% – 2015 (92.31% – 2012)</p> <p>—</p> <p>94.29% – 2015 (96.43% – 2012)</p>
Partner agencies will use the employment data/outcomes of their programs to understand and improve those programs. [P6]	Partner agencies used data to measure satisfaction; identify training and service needs; identify modifications to current programs and services to better suit workforce requirements; and serve as a resource for agency strategic plan development, grant applications, and in preparation for future legislative sessions.

## The Future

The Governor approved *The Texas Workforce System Strategic Plan FY 2016–FY 2023* on (DATE PENDING). The new plan will serve as the blueprint for Texas’ workforce system over the next eight years.

Over the eight-year plan period, partners will also work to fully implement the Workforce Innovation and Opportunity Act of 2014 (Public Law 113-128). In addition, administration of the vocational rehabilitation program will transfer from the Department of Assistive and Rehabilitative Services to the TWC, as required by SB 208 (84<sup>th</sup> Legislature).

During development of the new plan, three strategic imperatives became apparent as key characteristics that serve as foundational elements that represent a best-in-class workforce system. These overarching imperatives will serve as pillars upon which the capacity of the Texas workforce system should be built in order to successfully identify and respond to changing market conditions and the needs of all workforce system customers. They represent core competencies that must be embedded in all system elements to achieve the plan’s vision and mission. Therefore, it is a key tenet of the new plan that all workforce system partners have core competencies in and a commitment to customer service and satisfaction, data-driven program improvement, and continuous improvement and innovation.

**Overarching Strategic Imperatives**

- ★ Customer service and satisfaction
- ★ Data-driven program improvement
- ★ Continuous improvement and innovation

- *The Texas Workforce System Strategic Plan  
FY 2016–FY 2023*



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## INTRODUCTION

### The Council and Texas' Workforce System

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 highly skilled and well-educated workforce for Texas, and with assisting the Governor and the legislature with strategic planning for and evaluation of the Texas workforce system. The 19-member Council includes representatives from business, labor, education, and community-based organizations.

The workforce system comprises the workforce programs, services, and initiatives administered by eight state agencies and 28 local workforce boards, as well as independent school districts, community and technical colleges, and local adult education providers.

System partners are responsible for the delivery of 24 programs and services focused on education, workforce education, and workforce training for three participant groups: adults, adults with barriers, and youth. The Council collects and disseminates performance data and funding information on 19 workforce programs, as well as five academic education programs at the secondary and postsecondary levels. Information and data from these five programs assist in understanding the scope and effort of program delivery through high schools and community and technical colleges, and these entities' efforts to prepare students to transition to further education or enter the workforce.

Working with system partners, the Council completed a yearlong planning process in September 2009. The result of that process was *Advancing Texas: Strategic Plan for the Texas Workforce System (FY2010-FY2015)* (*Advancing Texas*), which was approved by the Governor on October 23, 2009. The plan was devised on a six-year time frame to align with the Texas Strategic Planning and Performance Budgeting System. It was reviewed and updated in 2012.

### Annual Evaluation

The Council is required by Texas Government Code, Chapter 2308, to monitor the state's workforce system. As part of that responsibility, the Council annually reports to the Governor and the legislature on the degree to which the system is achieving state and local workforce goals and objectives. This is the final evaluation report for the six-year strategic plan period.

### Advancing Texas

The workforce system strategy is to provide its customers—employers and current and future workers of Texas—with access to relevant and comprehensive workforce services that span a continuum from career planning and preparation, to career development and enhancement.

#### Vision

Our world-class workforce system enables Texas to compete successfully in the global market.

#### Mission

The Texas workforce system creates a globally competitive workforce through collaborative workforce system partner relationships that align, leverage, and integrate system services.

#### System Partners

- ★ Economic Development and Tourism
- ★ Texas Association of Workforce Boards
- ★ Texas Department of Criminal Justice – Windham School District
- ★ Texas Education Agency
- ★ Texas Health and Human Services Commission – Department of Assistive and Rehabilitative Services
- ★ Texas Higher Education Coordinating Board
- ★ Texas Juvenile Justice Department
- ★ Texas Veterans Commission
- ★ Texas Workforce Commission

The system strategic plan, *Advancing Texas*, and other Council products referenced in this report are posted on the Council's website at:

<http://gov.texas.gov/twic/>

State statutes require that the Council evaluate five elements in the workforce system:

- ▶ Formal and Less Formal performance measures
- ▶ Implementation of the system strategic plan, *Advancing Texas*
- ▶ Adult education action and achievements
- ▶ Local workforce board activities and alignment
- ▶ Work development programs that focus on welfare to work initiatives

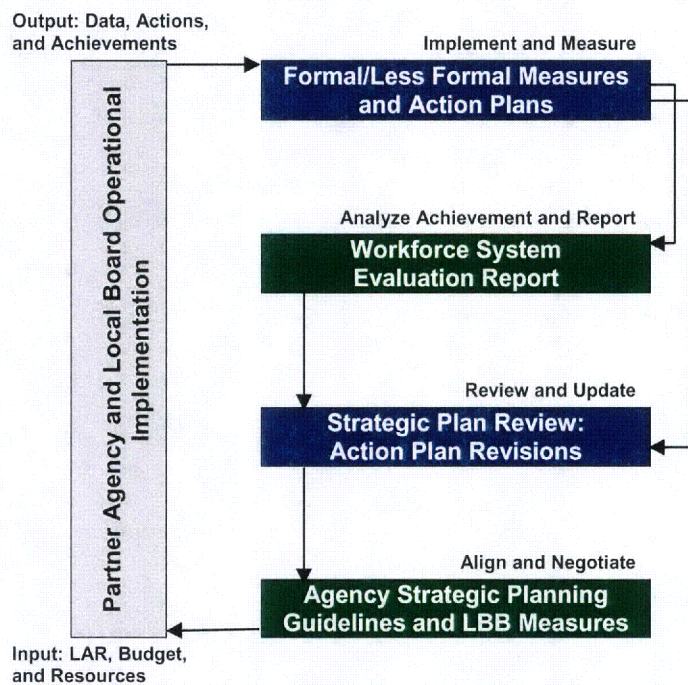
The Council uses a three-tier evaluation hierarchy that is one component of a comprehensive system performance framework, as illustrated in the graphic below. The framework depicts the inputs, outputs, and planning and evaluative components that form the cycle of planning, evaluation, and implementation that the Council engages in with system partners.

The Implement and Measure box at the top right references the three evaluation tiers, which are composed of metrics designed to evaluate system performance as well as progress toward achieving the long term objectives (LTO) identified in the system strategic plan.

- ▶ Evaluation Tiers 1 and 2 consist of Formal and Less Formal measures, respectively, which are presented in the **Report Card Series** and **Less Formal Measures** sections of this report.
- ▶ The third tier consists of action plans (AP) and progress milestones toward the LTOs, as noted in the **System Accomplishments** section.

- Key:**
- Grey = delivery/yields
  - Green = formal evaluative actions and course correction
  - Blue = planning actions and impacts
  - LAR = Legislative Appropriation Request
  - LBB = Legislative Budget Board

### Texas' Workforce System Performance Framework



### Issues Identification

System partners operate in a complex, changing economic environment as they strive to provide employers, current workers, and future workers with services that are comprehensive, timely, and relevant. There continues to be increased demand for middle-skills jobs, those that require more than a high school degree but less than a four-year degree. In Texas, future workers will be needed in traditional healthcare, energy, and technology-based jobs, as well as in the growth industries of wind, biofuel, and energy efficiency. In addition, the state's demographic composition is changing, with the workforce projected to include larger proportions of women, Hispanics, and prime-age (i.e., 25 to 54 years of age) workers.

The Council is charged with facilitating the development of a systemic, integrated approach to the delivery of programs and services that meet the needs of employers and individuals. This task is accomplished in part through identifying issues and working with system partners to achieve issue resolution. Over the *Advancing Texas* plan period, issues directly related to the scope as outlined above have been included

in the annual evaluation report. The Council also identifies and works to address issues related to the state's workforce system through a variety of other mechanisms, including:

- ▶ *System Integration Technical Advisory Committee (SITAC)* – Established by the Council Chair in December 2003 to oversee implementation of the system strategic plan, SITAC members represented all partner agencies and the Texas Association of Workforce Boards.
- ▶ *Council Strategy Sessions* – Convened in addition to, or in conjunction with, regular Council meetings in order to identify and address systemic issues.
- ▶ *Issue Briefs and Reports* – Produced periodically to address specific workforce issues.
- ▶ *Stakeholder Roundtables or Surveys* – Conducted periodically to obtain feedback regarding system stakeholder needs and to assess workforce system usage and satisfaction levels.
- ▶ *Listening Sessions* – Designed to increase members' understanding of system partners' goals, barriers, and initiatives related to workforce programs and services, as well as issues expected to be critical over the next five-to-eight years.

## Measures and Definitions

Three tiers of performance measures were included in *Advancing Texas*:

- ▶ **Tier 1 – Formal** – System measures are outcome oriented. They establish responsibility for end outcomes or outputs that are central to the system's success. Such measures are essentially consistent across workforce programs and consist of the Formal measures found in partner agencies' performance measures for state-based budgeting and reporting. Four Formal measures approved by the Governor in 2003 remained in effect and were incorporated into *Advancing Texas*:
  - *Educational Achievement* – Number and percent of all program participants who obtain a degree, other credential of completion, or complete the level enrolled in either a training or educational program.
  - *Entered Employment* – Number and percent of all program participants who secure employment after exiting a program.
  - *Employment Retention* – Number and percent of all program participants who retain employment at a specified point after exiting a program.
  - *Customers Served* – Number of employers and individuals who received system services, including program participation.
- ▶ **Tier 2 – Less Formal** – Strategy-critical measures are also outcome oriented. These consist of the Less Formal measures that establish responsibility for end outcomes or outputs that are central to system partners' missions. There were six such measures for *Advancing Texas*:
  - *Vocational ESL Graduates* – Number of vocational English as a Second Language (ESL) graduates (subset of ESL population).
  - *Vocational ESL Employment* – Percent of vocational ESL graduates who obtain employment (subset of ESL population).
  - *Workforce Literacy Graduates* – Number of workforce literacy graduates (subset of Adult Basic Education (ABE) population).

- *Workforce Literacy Employment* – Percent of workforce literacy graduates who obtain employment (subset of ABE population).
  - *CTE Concentrator Graduates* – Percent of Career Technical Education (CTE) concentrators (Code 2 and 3 CTE Participants) who graduate on the recommended or distinguished achievement high school program.
  - *Employer Satisfaction* – Agency-specific measures and definitions are presented in the **Less Formal Measures** section.
- ▶ **Tier 3 – AP Specific** – Capacity-building measures are process oriented and establish responsibility for intermediate outcomes that identify and chart achievement of tasks and milestones. They are specific to a given AP and often require a high degree of collaboration between system partners.

In 2010, definitions and methodologies were negotiated with partner agencies, in consultation with the Governor's Office and the Legislative Budget Board (LBB). Only the Tier 1 Formal measures are included in agency Legislative Appropriation Requests, and may or may not be specified as key measures<sup>10</sup>.

### Data Treatment and Limitations

Data for all Formal measures except Customers Served are presented as both an absolute number and as a percentage. All data are from the most recent 12-month reporting period available.

- ▶ *Agency Negotiation* – During 2004 data definition and methodology negotiations, the Council requested that where federal common definitions were relevant, those definitions be used, and that similar program periods also be used. The intent was to lessen the differences between data sets, thereby achieving a higher degree of relatedness and relevance when aggregating data across multiple programs. Undertaken again in 2009 for *Advancing Texas*, there are definitions and program periods that differ slightly from those used during the previous strategic plan period.
- *Program-Level Reporting* – As required by statute, data are presented by program rather than by agency.
  - *Unduplicated Data* – In most cases, data are unduplicated and conform to reporting definitions and methodologies agreed to by partner agencies. For example, Educational Achievement data may include duplicate data where a participant has outcomes for both education and training programs. Where known, these instances are footnoted on the applicable report card.
- ▶ *Data Revisions* – This year, the Texas Education Agency, the Texas Veterans Commission and the Texas Workforce Commission (TWC) identified the need to submit corrected data for the prior reporting cycle. In addition, the Council requested that the Texas Higher Education Coordinating Board submit revised Less Formal measures data for the 2014 reporting cycle in order to have complete, final data set(s) for both measures. Percentage point differences published in the **Report Card Series** for the Change 2014–2015 and Cumulative 2009–2015 and all report narrative reflect the revised data, which are published in the **Data Addendum** to this report.
- ▶ *Change Rates* – Data are presented and tracked longitudinally. This year, each report card includes columns for two rates of change:
- *Change 2014–2015* – The one-year rate captures the change from the previous year to the current year. Expressed as a percentage, the rate represents the percentage point difference from 2014 to 2015.

<sup>10</sup> Key measures indicate the extent to which a state agency is achieving its goals or objectives and consist of the outcome, output, efficiency, and explanatory measures referenced in the General Appropriations Act for each agency. [LBB, *Performance Reporting – New Key Measures* (November 2013)]

- *Cumulative 2009–2015* – The cumulative rate aggregates the rate of change from 2009 (baseline year) to the current year. Expressed as a percentage, the rate represents the percentage point difference from 2009 to 2015.
- ▶ *Explanation of Variance* –
  - *Variance Range* – Instances where the value in the Change 2014–2015 column was more than 5%, either positive or negative, are addressed within the relevant report card section. This reporting is aligned to LBB performance measures reporting requirements.
  - *Base Values* – Significant changes in numerator and/or denominator values from 2014 to 2015, with no resulting significant rate change, were also reviewed where applicable. Such instances are addressed in the respective report card sections.
- ▶ *Rounding Convention* – A rounding convention has been applied to the Formal and Less Formal measures data: .001 to .004 has been rounded down to .00; .005 to .009 has been rounded up to the next highest hundredth. Rounding rules are applied after completion of all applicable mathematical operation(s) such as division or subtraction.
- ▶ *Data Ownership* – Some partner agencies process their own data, while others have interagency agreements with other partner agencies for data processing. Raw data are confidential records owned by the applicable agency.
- ▶ *Unemployment Insurance Records* –
  - *Time Lag* – There is a significant delay in receiving and analyzing unemployment insurance (UI) wage records for measuring performance. For example, when looking at six-month employment retention, there is a six-month wait to establish the period of data collection, plus four-to-five months for employers to submit the data to the TWC.  
  
This lag continues to pose significant challenges regarding timely performance measurement in other states as well as Texas. The approximate one-year data lag is ongoing because of the UI records delay and the time necessary for agencies to process and report the data to the Council.
  - *Coverage* – An unknown number of program exiters obtain jobs that are not covered by the Texas UI system. For example, the self-employed, those who relocate and become employed in another state, and those who live in Texas but are employed across state lines are not reported in the Texas UI database. This non-coverage results in lower levels of documented employment, reflecting negatively when education and training programs' outcomes are evaluated.  
  
Data sets that are more complete may be available in instances where the agency can use other databases, such as the Wage Record Interchange System, to identify employment with employers who do not file UI wages in Texas.
- ▶ *Project Re-Integration of Offenders (Project RIO)* – Project RIO was not funded for the fiscal years 2012–13 or 2014–15 biennia. However, the TWC continued to submit available data for applicable measures. No data were reported by the TWC since 2012.

## Report Cards

The Council believes that the report card series is a useful tool to present overall system performance. System evaluation is complex. Although the four Formal measures are appropriate to provide a system snapshot, they should not be viewed in isolation from other factors. Agencies and programs have different service populations with unique needs and characteristics, which has a large effect on performance data.

Additional limitations of specific significance to a single program are contained within the card footnotes or narrative.

System performance is presented in a series of five report cards that contain data reported by partner agencies for the Formal and Less Formal (Tiers 1 and 2) measures. Aggregate data are presented on the four Formal measures report cards and on the System report card. However, it is important to note that not all data definitions or methodologies are identical. The total should be viewed only as a good approximation of overall system performance. The graphic on page 8 illustrates the relationship of Formal and Less Formal measures to the report card series.

- ▶ *Programs in the Report Card Series* – The 24 programs included in the report card series, along with the short titles used in this report, are:

Programs in the Report Card Series	Short Title
Adult Education Workforce Investment Act II	Adult Education
Adults Workforce Investment Act	Adults WIA I
Apprenticeship Chapter 133	Apprenticeship
Blind Services	Blind Services
Community and Technical College Academic	CTC Academic
Community and Technical College Technical	CTC Technical
Dislocated Workers Workforce Investment Act	Dislocated WIA I
Employment Services - Wagner Peyser	Employment Services
Perkins Secondary Career Technical Education	Secondary CTE
Postsecondary Community and Technical College Corrections	Postsecondary CTC Corrections
Rehabilitation Services	Rehabilitation Services
Senior Community Service Employment Program	SCSEP
Secondary Education	Secondary
Secondary Academic Youth Corrections	Secondary Academic Corrections
Secondary Technical Youth Corrections	Secondary Technical Corrections
Secondary Academic Windham	Secondary Academic Windham
Secondary Technical Windham	Secondary Technical Windham
Self-Sufficiency Fund	Self-Sufficiency
Skills Development Fund	Skills Development
Supplemental Nutrition Assistance Program Employment and Training	SNAP E&T
Trade Adjustment Assistance	Trade Adjustment
Temporary Assistance for Needy Families Choices	TANF Choices
Veterans Employment and Training	Veterans E&T
Youth Workforce Investment Act	Youth WIA I

- ▶ *System Report Card* – This report card contains aggregate data for the four Formal measures, with the data sets combined across programs. It also includes data for the Less Formal measures. Since Less Formal measures are specific to a single program, there is no data aggregation.
- ▶ *Formal Measure Report Cards* – Individual report cards with accompanying analysis are included for each of the four Formal measures, with outcome data by program organized into three categories: Adults, Adults with Barriers, and Youth. Each program is assigned to one of the three categories in order to establish the greatest level of outcome equivalency and comparability.

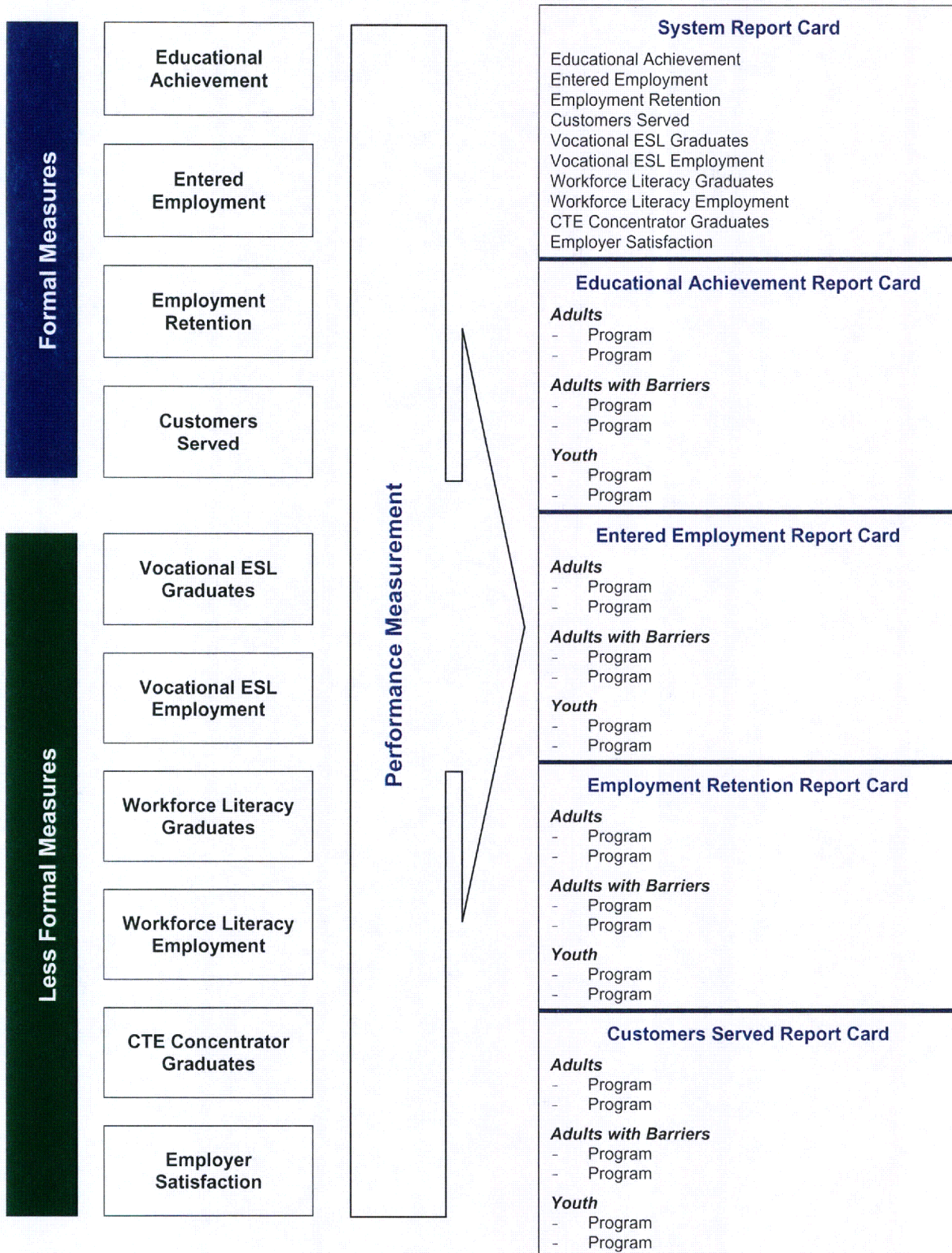
Programs in the Adults with Barriers category meet at least one of four criteria as a characteristic of the participant population: economically disadvantaged, educationally disadvantaged, incarcerated, or

physically or mentally impaired and requiring adaptive or rehabilitative services. Data for these programs address the Council's mandate to report on work development programs that focus on welfare to work initiatives.



### Report Card Structure for Reporting and Evaluating Measures

- ★ **System Report Card (1)** – Aggregates and weights based on total participant population.
- ★ **Formal Measure Report Cards (4)** – Report by population segment, program, and aggregate.



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## REPORT CARD SERIES

The System report card shows the performance of Texas' workforce system and includes totals for each of the four Formal measures that have been aggregated and weighted by the number of program participants. The card also shows the number, percent where applicable, and rates of change for both the Formal and Less Formal measures. In this report, the change columns reflect the increase or decrease between values in the 2014 report and those reported for 2015, and the cumulative change from 2009 to 2015.

Following the System report card, a report card for each Formal measure is presented and discussed. The next section of the report presents the Less Formal measures by goal, definition, benchmark, and data sets.

The Council is required by statute to report program-level data and to provide an overall assessment of implementation of the workforce system strategic plan, *Advancing Texas*. As noted in the Data Treatment and Limitations section on page 4, the aggregate data presented in the report card series should be viewed as an approximation of overall system performance.

System

2015 Workforce System Report Card				
Formal Measures	Actual	Percent	Change 2014–2015	Cumulative 2009–2015
Educational Achievement <sup>11</sup>	504,073	81.33%	-0.16%	6.92%
Entered Employment <sup>12</sup>	1,024,057	76.26%	2.96%	-1.36%
Employment Retention <sup>13</sup>	929,206	84.02%	1.21%	0.81%
Customers Served <sup>14</sup>	4,962,054	N/A	1.58%	-5.27%
<b>Less Formal Measures<sup>15</sup></b>				
CTE Concentrator Graduates <sup>A</sup>	119,668	82.33%	1.17%	2.90%
Vocational ESL Graduates <sup>B</sup>	<i>Final 2014 data published in the <b>Less Formal Measures</b> section.</i>			
Vocational ESL Employment <sup>B</sup>	<i>Final 2014 data published in the <b>Less Formal Measures</b> section.</i>			
Employer Satisfaction	<i>Agency-specific data published in <b>Less Formal Measures</b> section.</i>			

The report card series is a useful tool to present overall system performance, but the data presented should be taken in context. Most programs are designed to serve participants that meet specific eligibility criteria and have unique needs. Accordingly, program objectives and desired outcomes vary, and approved data definitions and methodologies are program-specific. Additionally, integrated service delivery strategies may result in duplication of customer counts across programs. The System report card contains aggregate data for all agencies' applicable programs by measure as noted on the Formal measure report cards. Due to known duplicates that cannot be removed from program-level data, adjustments have been calculated at the System level, with unduplicated data footnoted as applicable.

<sup>11</sup> The aggregate Educational Achievement rate, adjusted to exclude duplicate TWC customers, is 81.32%. The Texas Juvenile Justice Department (TJJD) previously reported that there were significant changes to the methodology for Secondary Technical Corrections. Comparable revised data were not available for the 2009 baseline year; therefore, the revised 2010 data for this program were used when calculating the cumulative change rate. The methodology for the TJJD's Secondary Academic Corrections measure was revised in 2014; however, comparable prior-year data were not available.

<sup>12</sup> The aggregate Entered Employment rate, adjusted to exclude duplicate TWC customers, is 75.90%.

<sup>13</sup> The aggregate Employment Retention rate, adjusted to exclude duplicate TWC customers, is 84.03%.

<sup>14</sup> The aggregate Customers Served count, adjusted to exclude duplicate TWC customers, is 4,813,885.

<sup>15</sup> Five of the six Less Formal measures are tied to pilot projects, with data becoming available in different reporting cycles. The workforce literacy pilots ended in June 2013, and pilot data are presented in the **Less Formal Measures** section. Senate Bill 307 (83<sup>rd</sup> Legislature) mandated transfer of adult education and literacy programs from the TEA to the TWC. The program was transferred on September 1, 2013. The TWC's initial request for proposals met the intent of this *Advancing Texas* objective by requiring service providers to implement career pathways programs.

(A) 2010 baseline data were used to calculate the cumulative change rate.

(B) Reporting for the two Vocational ESL measures began in 2012. This year, the Council requested that the Texas Higher Education Coordinating Board submit revised Less Formal measures data for the 2014 reporting cycle in order to have complete, final data set(s) for both measures.

Educational Achievement<sup>16</sup>

## 2015 Educational Achievement Report Card

	Actual	Percent	Change 2014–2015	Cumulative 2009–2015
<b>Adults</b>				
CTC Academic	19,801	26.32%	-1.87%	0.05%
CTC Technical	9,280	29.81%	5.29%	6.63%
Apprenticeship	3,473	80.94%	-0.72%	5.06%
Dislocated WIA I	1,958	94.77%	0.15%	0.07%
Adults WIA I	3,131	92.61%	-0.01%	-1.13%
<b>Adults Total</b>	<b>37,643</b>	<b>32.42%</b>	<b>-0.27%</b>	<b>0.83%</b>
<b>Adults with Barriers</b>				
Adult Education <sup>17</sup>	4,948	65.75%	-7.41%	2.79%
Postsecondary CTC Corrections <sup>18</sup>	1,330	40.23%	-0.48%	9.08%
Secondary Academic Windham	5,095	82.46%	-0.11%	0.27%
Secondary Technical Windham	4,619	78.02%	0.58%	-2.00%
<b>Adults with Barriers Total</b>	<b>15,992</b>	<b>69.74%</b>	<b>-2.74%</b>	<b>5.63%</b>
<b>Youth</b>				
Secondary CTE	140,083	96.36%	0.06%	7.83%
Secondary	308,727	92.63%	0.03%	4.63%
Youth WIA I	2,457	63.24%	-4.19%	10.40%
Secondary Academic Corrections <sup>19</sup>	297	40.14%	-7.38%	-0.41%
Secondary Technical Corrections <sup>20</sup>	204	28.10%	0.02%	13.89%
<b>Youth Total</b>	<b>451,768</b>	<b>93.34%</b>	<b>0.02%</b>	<b>6.45%</b>
<b>Total</b>	<b>504,073</b>	<b>81.33%</b>	<b>-0.16%</b>	<b>6.92%</b>

<sup>16</sup> Educational achievement includes participant outcomes for both educational and training programs. Data subsets (duplicates) include Postsecondary CTC Corrections. The card total has been adjusted to provide an unduplicated count.

<sup>17</sup> Senate Bill 307 (83<sup>rd</sup> Legislature) mandated transfer of adult education and literacy programs from the Texas Education Agency (TEA) to the Texas Workforce Commission (TWC). The program and the four Formal measures for Adult Education were transferred to the TWC on September 1, 2013. Methodologies were updated to reflect this change as well as revisions to the federal National Reporting System for Adult Education reporting requirements, as applicable. To ensure comparability across the *Advancing Texas* plan period, the TWC submitted revised data for the four Formal measures for 2009 (baseline year) through 2013. Revised data were published in the *Evaluation 2014 Data Addendum*.

<sup>18</sup> As required by SB 1 (83<sup>rd</sup> Legislature), administrative responsibility for postsecondary education programs transferred from the Windham School District to the Texas Department of Criminal Justice's (TDCJ) Rehabilitation Programs Division on September 1, 2013.

<sup>19</sup> The Texas Juvenile Justice Department (TJJD) reported a methodology change, effective for the 2014 reporting cycle. Revised prior-year data were not available.

<sup>20</sup> Due to a definition and methodology change, the TJJD submitted revised data for the 2010 and 2011 reporting cycles in 2012. Revised data were not available for 2009; therefore, 2010 data have been used to calculate the multi-year change rate for this measure.

## Educational Achievement Analysis

### **Educational Achievement –**

*number and percent of all program participants who obtain a degree, other credential of completion, or complete the level enrolled in either a training or educational program.*

The data sets in the Educational Achievement report card are from system programs and services that have the acquisition of knowledge and skills as a significant, intended outcome for participants. Data limitations other than general limitations, such as the time lag of unemployment insurance wage matching, are contained within the card footnotes or narrative.

... overall performance rose 6.92% over the six-year plan period, with 11 of 14 programs realizing percentage gains.

### **Data**

#### *Adults*

The data range for Adults is from 26.32% for CTC Academic programs to 94.77% for Dislocated WIA I. Performance for two of the five programs increased from 2014, with the largest change reported for CTC Technical (5.29%). Three programs reported performance of greater than 80%. The segment total of 32.42% represents an annual decrease of 0.27% and a six-year increase of 0.83% for the group.

Only CTC Technical reported a one-year increase or decrease that exceeded the 5% variance range. The Texas Higher Education Coordinating Board (THECB) cited two reasons for the 5.29% increase: (1) increased demand for technical awards due to the economic recovery, and (2) increased number of stackable certificates/awards due to the use of career pathways.

The largest six-year increases were reported for CTC Technical (6.63%) and Apprenticeship (5.06%), while Adults WIA I (-1.13%) posted the only decrease.

CTC Academic and Technical program data are based on a starting cohort and total awards earned within a six-year period. The data sets include certificates, associate's degrees, and higher degrees. While these data reflect the success of a specific cohort across time, they do not indicate the educational success of students in a 12-month period as measured by the awarding of certificates or associate degrees. In academic year 2013–14, 99,176 CTC academic and technical credentials were awarded, an increase of 6.00% from 2014 and a six-year increase of 67.42%. The number is more than triple the completions, or graduation rate, reported this year under the longitudinal definition. For this reason, the Council requested 12-month credential data from the THECB in order to provide a more complete representation of educational achievement in Texas' community and technical colleges. Of the 99,176 credentials awarded:

- ▶ Academic degrees awarded (45,270) increased 10.79% from the prior year and 90.19% over the six-year period. The THECB reported that the number of reverse transfer degrees (i.e., transfer from four-year to two-year institution) has continued to increase rapidly. In addition, initiatives were developed to increase the graduation rate.
- ▶ Technical certificates and degrees awarded (53,906) rose 2.28% and 52.12%, respectively, from 2014 and 2009. The THECB previously reported that technical programs developed as "pathways" matured, resulting in more awarded certificates and degrees.

#### *Adults with Barriers*

The data range for Adults with Barriers is from 40.23% for Postsecondary CTC Corrections, a program that deals with incarcerated adults, to 82.46% for Secondary Academic Windham. An overall annual decrease of 2.74% was noted for the group, but there was an overall six-year rise of 5.63%.

Adult Education declined 7.41% this year, but rose 2.79% over the six-year period. The TWC reported that the change to the 2014 GED created considerable challenges that affected performance. In Program

Year (PY) 2013–14, a large number of students tested prior to January 2014—when the new test was implemented—in order to complete their assessment battery using the old GED exam. This resulted in a large number of students testing during the PY, with those students posting a higher completion level due to the less rigorous nature of the previous GED test. PY 2014–15 was the first full year of implementation with the 2014 GED, which is considerably more challenging and requires stronger comprehension skills—particularly in math. Training is provided through the state professional development system to assist with teaching the higher-level competencies. In addition, the TWC noted that local programs have reported that current instructional staff may not have the skill sets needed to teach to the higher competencies and are seeking to hire staff with the required skill sets.

Although a significant six-year increase (9.08%) was reported for Postsecondary CTC Corrections, the rate fell slightly (-0.48%) again this year. Of 3,306 individuals served, 1,330 were awarded a community or technical college postsecondary degree or certificate, up from 1,293 of 3,176 last year, but significantly less than 2,055 of 6,597 in 2009. Over the plan period, state funding for college programming was significantly reduced, decreasing the number of offenders served and the resulting educational outcomes. Last year, the TDCJ reported that a new vocational course added during the spring and summer semesters and an additional location for academic courses added during the summer semester contributed to increased enrollment; however, participants did not have sufficient time to obtain certification or a degree.

#### *Youth*

The Youth category includes five programs, with a data range of 28.10% for Secondary Technical Corrections to 96.36% for Secondary CTE. In the Youth segment, 451,768 individuals achieved educational outcomes, a slight increase (0.02%) from 2014 and a significant one (6.45%) from 2009.

One of the five programs reported a change that exceeded the 5% variance range, Secondary Academic Corrections. The TJJD attributed the 7.38% decline to the reduction in the overall population of youthful offenders.

Significant six-year increases were reported for three programs: Secondary Technical Corrections (13.89%), Youth WIA I (10.40%), and Secondary CTE (7.83%).

#### *Total*

The absolute number of individuals with an educational achievement outcome (numerator) increased again this year, up to 504,073 compared to 447,195 in 2009. Of the 14 programs, six had absolute increases this year, compared to nine the previous year.

Of the 619,751 program participants, 504,073 (81.33%) achieved an educational outcome, a six-year rise of 6.92%. Postsecondary CTC Corrections' completion numbers of 1,330 in the Adults with Barriers segment were subtracted from the aggregate of all programs to achieve the unduplicated performance total and percent.

Overall performance rose 6.92% over with six-year plan period, with 11 of 14 programs realizing percentage gains. The largest six-year increases were reported for Secondary Technical Corrections (13.89%) and Youth WIA I (10.40%).

#### *Additional Data*

The following data sets were provided by partner agencies so that a more comprehensive picture of educational achievement could be presented, thereby providing important contextual information.

- ▶ Career schools and colleges awarded 84,250 degrees and certificates, a decrease of 11.71% from the prior year but a 29.65% increase from 2009. These awards include certificates reported by the TWC (52,885), as well as certificates and degrees reported by the THECB (31,365). With more career schools and for-profit institutions reporting to the THECB, the number of certificates and degrees awarded increased from 9,994 in 2009 to a high of 40,170 in 2013, declining to 31,365 this year. The 2015 figure includes 15,273 certificates, 7,606 associate's degrees, and 8,486 bachelor's

degrees. While the number of institutions reporting to the THECB increased earlier in the plan period, it decreased this year. The agency also noted that changes in federal Pell legislation, affecting the grant program available to undergraduate students, contributed to decreased enrollment and persistence at the for-profit institutions.

- ▶ Of Secondary Windham enrollments, 59.25% completed the level in which they were enrolled, based on a revised, more inclusive methodology. This represents decreases of 2.44% and 1.44% from 2014 and 2009, respectively.
- ▶ Of the 478,665 enrollments in Secondary and Secondary CTE programs, 14,081 were in Tech Prep, a six-year decrease of 92.08%. Higher enrollment in previous years was partially attributable to the availability of federal funds received under the American Recovery and Reinvestment Act of 2009 and other one-time supplemental appropriations. In addition, Tech Prep education state grants were defunded in federal fiscal year 2011. The TEA has continued to track data for this comprehensive, articulated program that offers participants the opportunity to study in a career program in high school and either gain credit or experience, which will assist them in their transition to higher education.

Data reported by the agency represent a subset of career technical education (CTE) concentrators, those students who take two or more CTE courses for three or more credits. The TEA noted that when Congress defunded Tech Prep, states did not have funding to support these activities. While school districts report increasingly fewer Tech Prep students, the number of CTE concentrators is increasing. Tech Prep data collection will end with the 2015–16 school year, with reporting only for high school seniors over that time frame.

- ▶ Adult Education students completed the level in which they were enrolled at a rate of 52.19%, down from last year (-10.61%) and 2009 (-0.10%). The TWC noted that the post-testing rate was much lower this year, leading to lower achievement overall. The agency attributed this to challenges associated with the implementation of new adult education contracts following the program's transfer to the TWC. In some service areas, grant recipients remained the same under the new contracts, while other areas saw a shift in grant recipients and providers. In such cases, students had to move locations, causing attrition.

Prior to 2014, data were also reported for the number of adults who (1) enrolled, (2) were assessed, and (3) had the minimum of 12 hours of class time required for inclusion in federal reporting. Under the revised National Reporting System for Adult Education reporting requirements, the methodology duplicates the Customers Served measure for Adult Education.



## Entered Employment

<b>2015 Entered Employment Report Card</b>				
	<b>Actual</b>	<b>Percent</b>	<b>Change 2014–2015</b>	<b>Cumulative 2009–2015</b>
<b>Adults</b>				
CTC Academic	32,656	88.98%	1.93%	-0.25%
CTC Technical	33,339	83.69%	-0.05%	-2.99%
Skills Development	793	98.51%	2.50%	2.48%
Trade Adjustment	1,169	75.76%	0.05%	-8.98%
Veterans E&T	27,034	72.89%	1.29%	-2.60%
Employment Services	737,765	76.28%	3.57%	-1.62%
Dislocated WIA I	4,675	85.42%	2.00%	-2.38%
Adults WIA I	14,272	87.05%	6.85%	2.37%
<b>Adults Total</b>	<b>851,703</b>	<b>77.07%</b>	<b>3.51%</b>	<b>-1.29%</b>
<b>Adults with Barriers</b>				
Blind Services	1,478	70.08%	-9.34%	-0.08%
Rehabilitation Services	13,680	66.60%	0.04%	9.68%
Adult Education <sup>21</sup>	4,813	43.72%	0.88%	-2.89%
SNAP E&T	21,938	78.08%	-3.56%	-5.36%
Self-Sufficiency	145	72.86%	-5.60%	-12.12%
SCSEP	132	51.97%	-2.22%	12.10%
TANF Choices	20,981	85.14%	2.51%	-2.18%
<b>Adults with Barriers Total</b>	<b>63,167</b>	<b>72.73%</b>	<b>-0.64%</b>	<b>-1.86%</b>
<b>Youth</b>				
Secondary CTE	104,778	72.19%	1.30%	-0.87%
Youth WIA I	4,409	75.95%	1.89%	4.46%
<b>Youth Total</b>	<b>109,187</b>	<b>72.34%</b>	<b>1.33%</b>	<b>-0.62%</b>
<b>Total</b>	<b>1,024,057</b>	<b>76.26%</b>	<b>2.96%</b>	<b>-1.36%</b>

<sup>21</sup> Senate Bill 307 (83<sup>rd</sup> Legislature) mandated transfer of adult education and literacy programs from the Texas Education Agency to the Texas Workforce Commission (TWC). The program and the four Formal measures for Adult Education were transferred to the TWC on September 1, 2013. Methodologies were updated to reflect this change as well as revisions to the federal National Reporting System for Adult Education reporting requirements, as applicable. To ensure comparability across the *Advancing Texas* plan period, the TWC submitted revised data for the four Formal measures for 2009 (baseline year) through 2013. Revised data were published in the *Evaluation 2014 Data Addendum*.

## Entered Employment Analysis

### **Entered Employment –**

*number and percent of all program participants who secure employment after exiting a program.*

The data sets in the Entered Employment report card are from workforce system programs and services that have the acquisition of employment as a significant, intended outcome for participants. Data limitations other than general limitations, such as the time lag of unemployment (UI) wage matching, are contained within the card footnotes or narrative.

As noted in the **Introduction**, there is a delay in receiving and analyzing UI wage records for measuring performance such as entered employment. While the programs have different reporting cycles, most data reflect performance for mid-to-late 2013 and continue to reflect the economic recovery.

*... overall performance declined 1.36% over the six-year plan period, with five of 17 programs realizing percentage gains.*

### **Data**

#### *Adults*

The data range for Adults is from 72.89% for Veterans E&T to 98.51% for Skills Development. All eight programs reported performance of over 72%. An annual increase of 3.51% was noted for the group, while performance was down 1.29% from 2009.

While all eight programs experienced declines in 2010, several have reported increases since then, with seven reporting increases this year. A significant six-year decline was reported for Trade Adjustment (-8.98%), a federally funded program that helps workers who are adversely affected by foreign imports or off shoring of jobs.

Only Adults WIA I reported a change that exceeded the 5% variance range. The program had a one-year gain of 6.85%, with a six-year rise of 2.37%. The TWC attributed the continued increase to a strong hiring environment following the economic recovery.

The largest absolute change was reported for Employment Services, with 737,765 individuals entering employment (numerator) compared to 813,925 last year and 1,062,058 in 2010. However, the entered employment rate rose 3.57% from 2014, which continues to point to a strong economy.

Of note, the absolute number of individuals entering employment continued to rise for both CTC Academic and CTC Technical.

#### *Adults with Barriers*

The data range for this group is from 43.72% for Adult Education to 85.14% for TANF Choices. Of the seven programs, four reported entered employment rates of 70% or higher. After rising for three consecutive years, overall performance fell slightly (-0.64%), representing a six-year decrease of 1.86%.

Three programs reported positive changes this year and of the four reporting decreases, two exceeded the 5% variance range: Blind Services and Self-Sufficiency.

After posting a significant increase (10.86%) last year, Blind Services declined 9.34%, resulting in a slight loss (-0.08%) since 2009. The Health and Human Services Commission's Department of Assistive and Rehabilitative Services (DARS) previously noted that the Division for Blind Services implemented procedures to increase the entered employment rate. For example, evaluation services before determining participants' eligibility were increased. In addition, management review of cases were conducted prior to unsuccessful closure in an attempt to identify strategies that might result in a successful closure based on established criteria.

This year, DARS reported that the number of successful case closures (numerator) for Blind Services—1,478 compared to 1,397 in 2014—increased over the previous year and exceeded the state legislative target. The 2015 employment rate of 70.08% also exceeded the state legislative target and the federal benchmark of 68.9%. Concurrently, a management-directed effort focused on counselors exercising case management best practices and closing cases where a successful outcome could not be achieved.

Self-Sufficiency declined 5.60% and 12.12% from 2014 and 2009, respectively. The TWC noted that while the employment rate declined, the number of participants receiving services under Self-Sufficiency rose—highlighting the high rate of clients unable to enter employment due to barriers such as lack of transportation or childcare.

#### *Youth*

The Youth category includes two programs, with the segment rising 1.33% from 2014, but falling 0.62% over the six-year period. Secondary CTE rose 1.30%, resulting in a 0.87% decrease from 2009. Youth WIA I rose 1.89% from 2014, representing a 4.46% increase over the six-year period.

#### *Total*

Of the 1,342,832 program participants, 1,024,057 (76.26%) entered employment. This figure represents an increase of 2.96% from 2014 but a six-year decrease of 1.36%. Twelve of 17 programs showed one-year percentage increases. Two programs posted six-year double-digit percentage changes: Self-Sufficiency (-12.12%) and SCSEP (12.10%).

After rising in 2010 and 2011, the absolute number of individuals served fell again this year and the number entering employment fell slightly compared to the prior year. The number of program participants (denominator) was 1,342,832, down from the 2011 high of 1,901,523. The number entering employment (numerator) decreased from 1,107,573 last year to 1,024,057, with 10 of 17 programs reporting absolute increases.

For most programs, data reported in 2010 reflected participants exiting during the recession. Performance declines were expected to continue in 2011 and possibly 2012 given the delay in UI wage reporting. Since then, gains reported by many programs reflect continued economic improvement.

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## Employment Retention

## 2015 Employment Retention Report Card

	Actual	Percent	Change 2014–2015	Cumulative 2009–2015
<b>Adults</b>				
CTC Academic	19,768	85.81%	-0.23%	-1.16%
CTC Technical	27,651	91.34%	-0.33%	-0.70%
Skills Development	22,779	96.30%	0.40%	2.45%
Trade Adjustment	1,051	91.39%	1.51%	-1.40%
Veterans E&T	31,160	86.40%	1.66%	-0.53%
Employment Services	746,431	84.29%	1.22%	0.89%
Dislocated WIA I	4,422	89.90%	0.33%	-0.30%
Adults WIA I	13,906	79.23%	-0.64%	-6.02%
<b>Adults Total</b>	<b>867,168</b>	<b>84.84%</b>	<b>1.19%</b>	<b>0.73%</b>
<b>Adults with Barriers</b>				
Blind Services	725	88.41%	1.23%	1.70%
Rehabilitation Services	9,628	87.36%	-0.40%	1.46%
Adult Education <sup>22</sup>	17,878	57.71%	2.44%	-2.69%
SNAP E&T	15,929	87.25%	-0.25%	4.67%
Self-Sufficiency	75	78.13%	-10.63%	-5.75%
TANF Choices	15,275	79.47%	0.27%	2.11%
<b>Adults with Barriers Total</b>	<b>59,510</b>	<b>74.02%</b>	<b>1.13%</b>	<b>0.86%</b>
<b>Youth</b>				
Youth WIA I	2,528	75.51%	2.43%	1.35%
<b>Youth Total</b>	<b>2,528</b>	<b>75.51%</b>	<b>2.43%</b>	<b>1.35%</b>
<b>Total</b>	<b>929,206</b>	<b>84.02%</b>	<b>1.21%</b>	<b>0.81%</b>

<sup>22</sup> Senate Bill 307 (83<sup>rd</sup> Legislature) mandated transfer of adult education and literacy programs from the Texas Education Agency to the Texas Workforce Commission (TWC). The program and the four Formal measures for Adult Education were transferred to the TWC on September 1, 2013. Methodologies were updated to reflect this change as well as revisions to the federal National Reporting System for Adult Education reporting requirements, as applicable. To ensure comparability across the *Advancing Texas* plan period, the TWC submitted revised data for the four Formal measures for 2009 (baseline year) through 2013. Revised data were published in the *Evaluation 2014 Data Addendum*.

## Employment Retention Analysis

### **Employment Retention –**

*number and percent of all program participants who retain employment at a specified point after exiting a program.*

As with Entered Employment, the data sets in the Employment Retention report card are from workforce system programs and services that have the acquisition and maintenance of employment as a significant, intended outcome for participants. Data limitations other than general limitations, such as the time lag of unemployment insurance (UI) wage matching, are contained within the card footnotes or narrative.

... overall performance rose 0.81% over the six-year plan period, with seven of 15 programs realizing percentage gains.

There is a significant delay in receiving and analyzing UI wage records for measuring retention. The programs have different reporting cycles, with some reported measures reflecting the effects of the economic recession later than others. Despite expectations that the recession would be a significant factor in 2011 and possibly 2012, improved outcomes have been reported for the last five years.

### **Data**

#### *Adults*

The data range for Adults is from 79.23% for Adults WIA I to 96.30% for Skills Development. Overall, this segment increased from last year (1.19%) and over the six-year period (0.73%).

No programs reported an increase or decrease that exceeded the 5% variance range. Five of the eight programs reported increases this year. The largest increase was posted for Veterans E&T (1.66%), while Adults WIA I fell 0.64%. The largest six-year changes were reported for Adults WIA I (-6.02%) and Skills Development (2.45%).

#### *Adults with Barriers*

The data range for Adults with Barriers is from 57.71% for Adult Education to 88.41% for Blind Services, with five of six programs reporting retention of over 78%. Overall, performance increased 1.13% and 0.86% from 2014 and 2009, respectively. Three programs posted positive changes from the prior year.

Only one program reported a change that exceeded the 5% variance range. After increasing last year, Self-Sufficiency declined 10.63%—a six-year decrease of 5.75%. The Self Sufficiency program provides grants to community and technical colleges and community-based organizations to implement customized job training programs in cooperation with employers and to help low-income individuals and those receiving public assistance achieve self-sufficiency and independence. The TWC noted that participants often have one or more challenges (e.g., childcare, transportation) that affect the ability to obtain or retain employment. Projects continue to be designed with support services in an effort to increase employment retention.

The greatest six-year increase was reported for SNAP E&T (4.67%). This program promotes long-term self-sufficiency and independence by preparing recipients for employment through work-related education and training activities.

#### *Youth*

The Youth category includes only one program. Performance for Youth WIA I rose 2.43% from 2014 and 1.35% over the six-year period.

#### *Total*

Of the 1,105,896 program participants who entered employment, 929,206 (84.02%) retained employment. This represents increases of 1.21% from 2014 and 0.81% from 2009.

The absolute number of individuals entering employment and the number retaining employment fell this year. The number of individuals finding employment (denominator) was 1,105,896, compared to 1,148,409 in 2014. The number retaining employment (numerator) decreased from 951,054 to 929,206. The decreases are largely attributable to the Employment Services program, with lower service numbers expected as the economy continued to improve.

In 2010, data reported for most programs reflected individuals who exited during the recession. That accounted for the performance declines experienced by programs with positive trends during the last strategic plan period, which includes all programs in the Adults category. That trend was expected to continue in the 2011 and 2012 reporting cycles; however, the overall percentage of individuals retaining employment has risen annually the last five years.

Overall performance rose 0.81% over with six-year plan period, with seven of 15 programs realizing percentage gains. The largest six-year increases were reported for SNAP E&T (4.67%) and Skills Development (2.45%).

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Customers Served<sup>23</sup>

## 2015 Customers Served Report Card

	Actual	Change 2014–2015	Cumulative 2009–2015
<b>Adults</b>			
CTC Academic	450,663	0.65%	18.91%
CTC Technical	183,101	-3.55%	12.85%
Apprenticeship	4,648	8.32%	13.95%
Skills Development	26,040	101.27%	-5.48%
Trade Adjustment	3,886	0.60%	-39.77%
Veterans E&T	29,863	-38.26%	-67.65%
Employment Services	1,223,098	-3.73%	-32.39%
Dislocated WIA I	8,965	6.56%	-46.99%
Adults WIA I	38,053	30.71%	23.00%
<b>Adults Total</b>	<b>1,968,317</b>	<b>-2.32%</b>	<b>-22.15%</b>
<b>Adults with Barriers</b>			
Blind Services	11,038	4.39%	8.81%
Rehabilitation Services	75,738	7.80%	5.31%
Adult Education <sup>A</sup>	78,385	1.88%	-14.31%
SNAP E&T	55,435	33.36%	91.41%
Self-Sufficiency	1,517	702.65%	97.78%
SCSEP	964	-19.20%	-35.04%
TANF Choices	33,627	-17.98%	-44.53%
Postsecondary CTC Corrections <sup>A</sup>	3,306	4.09%	-49.89%
Secondary Academic Windham	54,773	0.50%	-26.08%
Secondary Technical Windham	10,554	14.87%	-6.52%
<b>Adults with Barriers Total</b>	<b>325,337</b>	<b>5.43%</b>	<b>-8.96%</b>
<b>Youth</b>			
Secondary CTE	1,210,587	6.07%	19.53%
Secondary	1,449,066	2.77%	11.18%
Youth WIA I	8,955	-7.01%	-74.77%
Secondary Academic Corrections	1,862	-5.24%	-50.35%
Secondary Technical Corrections	1,236	-7.14%	-62.10%
<b>Youth Total</b>	<b>2,671,706</b>	<b>4.19%</b>	<b>13.27%</b>
<b>Total</b>	<b>4,962,054</b>	<b>1.58%</b>	<b>-5.27%</b>

<sup>23</sup> Data subsets (duplicates) include Postsecondary CTC Corrections. The card total has been adjusted to provide an unduplicated count.

<sup>A</sup> Administrative responsibility changed effective September 1, 2013. Additional information provided in report narrative.

## Customers Served Analysis

### **Customers Served –**

*number of employers and individuals who received system services, including program participation.*

As with all other Formal measures, the data sets in the Customers Served report card are from Texas' workforce system programs and services. Data limitations other than general limitations addressed in the **Introduction** are contained within the card footnotes or narrative.

While Customers Served is typically defined and treated as a lag measure, it was recommended for inclusion as a Formal measure for two reasons:

- ▶ Customers Served may be used as a lead measure for the purpose of system strategic planning given its tie to program infrastructure usage and capacity; and
- ▶ Total Customers Served indicates the number of individuals served by system programs and services. It should be noted that a given individual might receive services from one or more programs, either concurrently or at different points in time. Thus, the absolute number of individuals served is typically less than the total presented on the Customers Served report card as it represents aggregate, program-level participation counts. While known duplicates cannot be removed from program-level data, adjustments have been calculated at the System report card level, footnoted as a point of reference on page 11.

*... the number served declined 5.27% over the six-year plan period, largely due to the economic recovery.*

As stated on the previous page (note A), administrative responsibility for two programs changed during the plan period:

- ▶ *Adult Education* – As required by Senate Bill (SB) 307 (83<sup>rd</sup> Legislature), administrative responsibility for adult education and literacy programs transferred from the Texas Education Agency (TEA) to the Texas Workforce Commission (TWC). The program and the four Formal measures for Adult Education were transferred to the TWC on September 1, 2013. Methodologies were updated to reflect this change as well as revisions to the federal National Reporting System for Adult Education reporting requirements, as applicable. Prior to 2014, data were reported for all students; however, students must now have 12 contact hours and a baseline assessment. To ensure comparability across the *Advancing Texas* plan period, the TWC submitted revised data for the four Formal measures for 2009 (baseline year) through 2013. Revised data were published in the *Evaluation 2014 Data Addendum* and used for all calculations.
- ▶ *Postsecondary CTC Corrections* – As required by SB 1 (83<sup>rd</sup> Legislature), administrative responsibility for postsecondary education programs transferred from the Windham School District to the Texas Department of Criminal Justice's Rehabilitation Programs Division, effective September 1, 2013.

Program data submitted this year reflect participation from August/September 2014 through August 2015. The beginning effects of the recession were evidenced by several programs in *Evaluation 2009*, with that trend continuing in 2010 and to a lesser degree in 2011. In many cases, significant decreases in service levels reported in 2011 were due to the expiration of supplemental funding such as that provided under the American Recovery and Reinvestment Act (ARRA) of 2009. While some decreases are attributable to reduced federal or state funding levels, in large part the number served since 2012 reflects the improved economy. Notably, many reported decreases were for programs that typically have higher enrollment during adverse economic conditions.

## Data

### Adults

The data range for Adults is from 3,886 customers served by Trade Adjustment programs to 1,223,098 served by Employment Services through local boards' workforce centers and WorkInTexas.com. The nine programs in this segment reported serving 1,968,317 individuals, down 2.32% from last year and 22.15% from 2009.

Veterans E&T (-38.26%) decreased again this year, with a six-year decrease of 67.65%. Previously, the Texas Veterans Commission (TVC) attributed declining performance to the U.S. Department of Labor's (DOL) issuance of Priority of Service guidelines (June 2010) that transferred more basic employment service functions to non-TVC workforce center staff. This transfer allowed the TVC staff to provide more one-on-one intensive services to those most difficult to serve who are identified through a comprehensive assessment process. These veterans often receive assistance overcoming numerous, serious barriers to employment. On April 10, 2014, the DOL issued new guidelines restricting the roles of disabled veterans' outreach program specialists and local veterans' employment representatives staff. The guidance was meant to limit the number of eligible veterans and eligible spouses served by the disabled specialists by requiring a focus on individuals with one or more of six specified, significant barriers to employment (e.g., disabled, homeless, recently released offender). The local employment representatives are to perform only those duties related to outreach to the employer community and facilitation within the state's employment service delivery system. This major policy change continued to affect performance in 2015.

Four TWC programs posted increases that exceeded the 5% variance range:

- ▶ *Skills Development* – The TWC attributed the 101.27% rise to an increase in the number of projects that had an earlier start date for training. The agency noted that some projects had a significant number of trainees connected to them, further contributing to the increase. For example, one project with 975 trainees has been very active from the onset. The number served varied greatly over the six-year period, ranging from 35,599 in 2010 to 12,938 last year.
- ▶ *Adults WIA I and Dislocated WIA I* – Adults WIA I (30.71%) and Dislocated WIA I (6.56%) rose this year. The TWC reported that the increases—higher than projected for fiscal year (FY) 2015—were due to the implementation of a service delivery strategy to provide one-time supportive services in a large workforce area. Examination of the strategy identified that it was being applied too broadly without regard to the comprehensive needs of the WIA customer population. The strategy is being modified to provide support services to participants after development of a complete employment plan.

Adults WIA I increased 23.00% over the plan period, while Dislocated WIA I decreased 46.99% over the six-year span. Dislocated WIA I peaked in 2010 (19,961)—due to the economic recession and the growing number of unemployed individuals, as well as availability of additional funding under the ARRA. The TWC previously noted that the number of Dislocated WIA I customers served tends to follow trends in the larger unemployment insurance (UI) program. As the number of UI claims drops, the number of Dislocated WIA I customers enrolled drops as well. In addition, to ensure that they could continue serving existing participants, many local boards reduced enrollment during the period of uncertainty regarding the potential impact of federal shutdown in 2014.

- ▶ *Apprenticeship* – The TWC reported an increase in the number of apprentices being trained in state FY 2015, rising to 4,648. This represents a gain of 8.32% from 2014 and 13.95% since 2009. There has been general growth across programs, as well as higher participation in new training programs. Of note, carpenters and millwrights added 163 apprentices during the reporting period.

Three education and training-focused programs also reported double-digit increases over the six-year plan period: CTC Academic (18.91%), CTC Technical (12.85%), and Apprenticeship (13.95%). With the exception of Veterans E&T, the programs experiencing double-digit declines from 2009 were those that

were expected to fall following the economic recovery: Trade Adjustment (-39.77%), Employment Services (-32.39%), and Dislocated WIA I (-46.99%).

#### *Adults with Barriers*

The data range for Adults with Barriers is 964 customers served by the SCSEP program to 78,385 customers served by Adult Education and literacy programs. The 10 programs in this segment reported serving 325,337 individuals, representing an increase of 5.43% from last year but an 8.96% decrease from 2009.

Rehabilitation Services rose 7.80% this year, with a six-year increase of 5.31%. The HHSC's Department of Assistive and Rehabilitative Services reported that the rise reflects a division goal to increase the number of eligible consumers served and the success of strategies employed in field offices throughout the state to accomplish this goal in state FY 2015. Strategies included focusing outreach to underserved populations (e.g., veterans with disabilities and individuals with mental, intellectual, and developmental disabilities); increasing collaboration with community partners; developing teams for outreach and referral tracking; assessing underutilized referral sources; and utilizing public service announcements.

Two TWC programs posted significant increases this year, with significant decreases reported for two:

- ▶ *Self-Sufficiency* – This program assists businesses by designing, financing, and implementing customized job training programs in partnership with public community and technical colleges, a higher education extension service, and community-based organizations, for the creation of new jobs and/or the retraining of the existing workforce. With 1,517 individuals served, performance rose 702.65% this year and 97.78% since 2009. The TWC reported an increase in the number of projects awarded, noting that one project with 310 trainees had been very active—providing training to a majority of the targeted individuals. The number served varied greatly over the six-year period, ranging from 50 in 2011—when the agency did not receive adequate proposals for funding—to 1,517 this year.
- ▶ *SNAP E&T* – After rising in 2010 and 2011, the number of SNAP E&T participants declined for three years before rising 33.36% this year, resulting in a six-year increase of 91.41%. SNAP assists participants in obtaining employment through participation in work programs and education and training activities. The TWC attributed the 2010 and 2011 gains to the weaker economy that resulted in increased caseloads. From 2012 through 2014, the number of new mandatory work registrants eligible for SNAP E&T and referred by the HHSC declined and the local boards continued to reach out to and engage the General Population mandatory work registrants to maintain service levels.<sup>24</sup> This year, the availability of additional funds allowed for an increase in the number of SNAP E&T customers served. However, the TWC noted that there is no certainty the state will receive additional funding in the future.
- ▶ *SCSEP* – The availability of ARRA and DOL additional funding made available through the Consolidated Appropriations Act, 2010, allowed more low-income, older job seekers to receive paid, on-the-job training and employment services in 2010. Enrollments declined 35.04% since 2009, partly due to the expiration of ARRA funding and a reduction in SCSEP grants. While the number served was down 19.20% this year, the TWC reported that the 2014–15 grant was for 494 participants, an increase of eight positions. Under the 2013–14 grant, participants' hours were decreased to 16 per week for six weeks and more participants were able to enroll. The 2014–15 grant had a one-time healthcare grant and a large amount of the participants' wages went to training. The agency stated the DOL did not communicate that healthcare participants had to be paid from the regular 2014–15 grant until after it was awarded; therefore, participants' hours were not decreased until the last two weeks of the grant. With over 60 participants enrolled in healthcare training and using funds from the regular grant, not as many participants were able to enroll in the regular grant.

<sup>24</sup> SNAP recipients ages 16 to 59 who are not employed or are employed fewer than 30 hours per week, are considered SNAP E&T General Population mandatory work registrants, and are required to participate in SNAP E&T. ABAWDs (i.e., Able-Bodied Adults Without Dependents—SNAP recipients who are at least 18 but less than 50 years of age and are not employed or are employed less than 20 hours per week) are considered mandatory work registrants and are required to participate in SNAP E&T.

- ▶ *TANF Choices* – The Choices program assists applicants, recipients, nonrecipient parents, and former recipients of TANF cash assistance to transition from welfare to work through participation in work-related activities, including job search, job readiness classes, basic skills training, education, vocational training, and support services. The number served declined 17.98% this year, resulting in a six-year decrease of 44.53%. The TWC reported that the decrease was due to continued reduction in the TANF caseload and the higher proportion of the caseload that is exempt for participation in work activities.

After declining annually since the 2010 high of 93,975, Adult Education rose 1.88% this year to 78,385 customers served; however, service levels declined 14.31% over the six-year plan period. Last year, the TWC changed the measure definition and calculation methodology to be consistent with revised federal requirements. Revised data, published in the *Evaluation 2014 Data Addendum*, were submitted to enable historic comparisons from the 2009 baseline. FY 2013 and FY 2014 were also transitional years for the state's adult education and literacy programs as administrative responsibility transferred from the TEA to the TWC. For FY 2015, the TWC issued a request for proposals for service delivery and negotiated aggressive increases in the number of customers to be served, with increases expected to be reflected in this year's performance data.

Secondary Technical Windham increased 14.87% in 2015, but declined 6.52% from 2009. The TEA reported that the change was due to an expansion in the number of programs available to students.

#### *Youth*

The data range for the Youth category is 1,236 customers served through Secondary Technical Corrections to 1,449,066 customers served by Secondary programs. The five programs in this segment served 2,671,706 individuals, up 4.19% from the prior year and 13.27% from 2009.

Four programs reported one-year changes that exceeded the 5% variance range. Significant six-year changes were reported for all five programs, ranging from an increase of 19.53% for Secondary CTE to a decrease of 74.77% for Youth WIA I.

Secondary CTE rose 6.07%, resulting in a six-year gain of 19.53%. The TEA indicated the change might be due to increased student enrollment in CTE courses in order to meet the requirements for CTE endorsement options under the Foundation High School Program.

Youth WIA I fell 7.01% this year, representing a six-year decrease of 74.77%. The TWC attributed the change to continuing improvement in the economy resulting in more employment opportunities for youth. The agency indicated the decrease might also be a reflection of changing job search options available to youth such as social networking and a proliferation of job posting sites, particularly those catering to specific occupations and industries.

Service levels for both programs administered by the Texas Juvenile Justice Department (TJJD) fell this year. Secondary Academic Corrections has declined annually, with a 5.24% change this year and a cumulative decrease of 50.35%. The TJJD attributed the 2015 change to the reduction in overall youth population served by the program.

After rising 4.64% last year, Secondary Technical Corrections fell 7.14% in 2015. The TJJD continues to face challenges with hiring and retaining instructors for the workforce development program. In addition, several instructors retired this year.

#### *Total*

Partners in Texas' workforce system served 4,962,054 individuals, representing an increase of 1.58% from last year but a decrease of 5.27% from 2009. Of the 24 programs, service levels rose for 16 this year.

The TWC reported that 88,811 employers received services, up 5.54% from last year, but an overall decrease of 42.31% from 2009. In 2012, the agency noted that at the beginning of FY 2012, local boards were asked to focus on providing employers with more assistance related to hiring, such as through job postings and job fairs. The boards previously provided extensive labor market information (LMI) to employers, raising the question as to whether the employers were using the information. With the shift in focus, employers now obtain LMI assistance only upon request, thus reducing the number served but increasing the emphasis on hiring assistance.

This year, the TWC has prioritized services to employers across multiple programs. The agency noted that, in particular, employers' utilization of Work Opportunity Tax Credit (WOTC) services has increased significantly. The WOTC is a DOL-administered, federal income tax benefit for employers who hire individuals from specified target populations. The WOTC reduces the federal tax liability for a business, serving as an incentive to select job candidates who may be disadvantaged in their efforts to find employment. The main objective of the program is to enable individuals to obtain employment, earn a steady income, and become contributing taxpayers.

In many cases, the higher participation rates reported in 2010 reflected service levels, and receipt of additional program funding, during the recession. This measure is not affected by the reporting delays inherent in post-program measures, such as entered and retained employment. Therefore, the effects of the economic downturn that began prior to 2009 were most evident in the data reported in 2010 for this measure.

While some 2012 decreases were attributable to reduced federal or state funding levels, in large part the 2013 and 2014 results were indicative of economic recovery. Programs associated with negative economic conditions and layoffs, such as Dislocated WIA I that saw significant increases in 2010, fell to lower levels during the recovery. Continued enrollment increases in some academic and skills-based programs such as Apprenticeship and Secondary CTE indicate increased efforts by system partners to provide individuals who are qualified or who are in preparation for shifting skill needs to meet the growing demand for middle-skills jobs.

## LESS FORMAL MEASURES AND BENCHMARKS

### Action Plans

Approved by the Governor in October 2009, the six Less Formal measures were derived from action plans (AP) contained in the three key performance areas (KPA) of *Advancing Texas*. These strategy-critical measures established responsibility for end outcomes or outputs that were central to system partners' missions and linked directly to programmatic long term objectives (LTO).

### Actions and Outcomes

Five of the six Less Formal measures were tied to pilot projects, with data becoming available in different reporting cycles. For each measure, the first year of data availability (baseline year) established the benchmark. The measures and related LTOs are presented below, grouped by KPA. Additional details on AP implementation are provided in the **System Accomplishments** section.

#### ***KPA: Systems, Operations, Competencies, and Integration***

*LTO – By 2013, Texas will decrease high school dropout rates by implementing rigorous career technical education (CTE) as a part of the recommended or advanced high school graduation program.*

#### *LTO Measure:*

*CTE Concentrator Graduates – Percent of CTE concentrators (Code 2 and 3 CTE Participants) who graduate on the recommended or distinguished achievement high school program.*

*Benchmark (established by data submitted for the 2010 report): 79.43%*

*CTE Concentrator percentage: 82.33%*

*Data: 119,668 graduates from a population of 145,348*

*Change from data reported in 2014: 1.17%*

*Cumulative change 2010–2015: 2.90%*

## **KPA: Customer Outcomes**

*LTO – By 2013, design and implement integrated Adult Education and workforce skills training programs to enhance employment outcomes for the English language learner population.*

Reporting for both Less Formal measures began in 2012. Prior to 2014, the Texas Education Agency (TEA) was the reporting agency for pilot projects operated under this AP. The Texas Higher Education Coordinating Board (THECB), as the funding and managing agency for the projects, provided data to the TEA for review, confirmation, and submission to the Council. Effective last year, the THECB was directly responsible for reporting to the Council. This year, the Council requested that the THECB submit revised data for the 2014 reporting cycle in order to have complete, final data set(s) for both measures. Graduate data remained the same while employment data were updated.

For 2014, the agency noted that the number of students decreased due to the end of funding. Institutions were only required to report data for students funded under the grant, and funding extensions were approved for only three of eight pilot sites.

### *LTO Measure 1:*

*Vocational ESL Graduates – Number of vocational English as a Second Language (ESL) graduates (subset of ESL population).*

*Benchmark (established by revised data submitted for the 2012 report): 111*

*Final data (2014): 69*

*Change from data reported in 2013: -65.33%*

*Cumulative change 2012–2014: -37.84%*

*Explanatory Information: Data represent the number of vocational ESL completers (subset of Adult Basic Education Innovation Grant (ABE-IG) participants). It was possible for a student to earn more than one certificate (level 1, state, or national) during the reporting period; however, data reflect an unduplicated count.*

### *LTO Measure 2:*

*Vocational ESL Employment – Percent of vocational ESL graduates who obtain employment (subset of ESL population).*

*Benchmark (established by revised data submitted for the 2012 report): 56.19%*

*Employment percentage: 59.42%*

*Final data (2014): 41 counted as entering employment from a population of 69*

*Change from data reported in 2013: -2.89%*

*Cumulative change 2012–2014: 3.23%*

*Explanatory Information: Data represent the percent of vocational ESL program completers in the ABE-IG program who obtain employment after exiting a program (subset of ABE-IG participants).*



*LTO – By 2013, design and implement targeted Adult Basic Education (ABE) programs to enhance employment outcomes for populations requiring workplace literacy skills.*

The TEA began reporting both Less Formal measures in 2012. Senate Bill 307 (83<sup>rd</sup> Legislature) mandated transfer of adult education and literacy programs from the TEA to the Texas Workforce Commission (TWC), and the program was transferred on September 1, 2013. The TWC's initial request for proposals met the AP's intent by requiring service providers to implement career pathways programs.

Related performance reporting by the TWC reflects this program requirement; therefore, the two Less Formal measures associated with the pilot programs were not transferred to the TWC. Data submitted by the TEA in 2012 and 2013 constitute final reporting for the pilots required under the AP. In 2013, the TEA also submitted other data for the two-year pilot period, including:

- ▶ Fast-track GED instruction integrated with career readiness was offered by adult education providers, with services available at 36 sites in 103 classes.
- ▶ Services were provided to 969 students, with 302 obtaining their GED.
- ▶ The average hours of instruction over a six-to-eight week period was 69.02, and 267 participants received extended class time via distance learning.

*LTO Measure 1:*

*Workforce Literacy Graduates – Number of workforce literacy graduates (subset of ABE population).*

*Benchmark (established by data submitted for the 2012 report): 482*

*Final data (2013): 506*

*Change from data reported in 2012: 4.98%*

*LTO Measure 2:*

*Workforce Literacy Employment – Percent of workforce literacy graduates who obtain employment (subset of ABE population).*

*Benchmark (established by data submitted for the 2013 report): 37.50%*

*Final data (2013): 3 counted as entering employment from a population of 8*

*Explanatory Information: In 2012, reporting for this measure was deferred. Data submitted in 2013 were for a partial program period only, representing outcomes for the initial year of the two-year pilot period. Given transfer of the program to the TWC, revised data were not requested or received in 2014 or 2015.*

**KPA: Programs, Products, and Services**

*LTO – Partner agencies will gather data from employer customers at appropriate intervals to determine employer needs and satisfaction.*

Five system partners had projects that addressed measurement of employer satisfaction with system products and services. Two projects owned by the THECB and the Texas Youth Commission were completed in 2011 and closed in conjunction with approval of the *2012 Update* to the system strategic plan, *Advancing Texas*. For the three active projects, agency-specific measures and definitions were developed during the *2012 Update* review process, with reporting beginning in 2012.

*LTO Measure – Health and Human Services Commission-Department of Assistive and Rehabilitative Services (DARS):*

*Employer Satisfaction – Percent of Vocational Rehabilitation business partners satisfied with services provided.*

*Benchmark (established by data submitted for the 2012 report): 83.02%*

*Satisfaction rate: 85.71%*

*Data: 18 counted as satisfied from a population of 21 survey respondents*

*Change from data reported in 2014: 7.14%*

*Cumulative change 2012–2015: 2.70%*

*Survey Response Rate: 52.50%*

*Explanatory Information: In fiscal year (FY) 2015, DARS redesigned its approach to staffing, tracking, and delivering business services. This effort was part of the priorities and strategies in the Health and Human Services System/DARS Strategic Plan for 2015–19 and was a management action approved by the Sunset Advisory Commission. To implement the recommendations, DARS developed a consolidated portfolio of services to businesses and implemented a single business services tracking and reporting system. As a result, the baseline data for employers was reset in the new database, resulting in fewer employers being surveyed.*

*This year, DARS also revised the survey tool; therefore, the results are not entirely comparable to FY 2014 results, but are a reasonable indicator of employer satisfaction. In FY 2016, DARS is considering options for a redesigned customer service survey that aligns with the services and system established for the consolidated employer relations functions of the Divisions for Blind and Rehabilitation Services.*

*LTO Measure – Texas Veterans Commission (TVC)*

*Employer Satisfaction – Percent of veterans business representative employer customers satisfied with services provided.*

*Benchmark (established by data submitted for the 2012 report): 92.31%*

*Satisfaction rate: 88.10%*

*Data: 74 counted as satisfied from a population of 84 survey respondents*

*Change from data reported in 2014: 0.04%*

*Cumulative change 2012–2015: -4.21%*

*Survey Response Rate: 48.00%*

*Explanatory Information: The TVC completes two employer satisfaction surveys annually as part of the agency's efforts to increase employer outreach and partnerships. Due to guidance from the U.S. Department of Labor's Veterans' Employment and Training Service, the veterans employment representatives were integrated with the local veterans employment representatives. All veterans employer liaisons are being incorporated as team members in local workforce boards' business service units to focus primarily on outreach to the employer community and facilitation within the state's employment service delivery system.*

*LTO Measure – Windham School District (Windham)*

*Employer Satisfaction – Percent of employers satisfied with services provided.*

*Benchmark (established by data submitted for the 2012 report): 96.43%*

*Satisfaction rate: 94.29%*

*Data: 33 counted as satisfied from a population of 35 survey respondents*

*Change from data reported in 2014: -5.71%*

*Cumulative change 2012–2015: -2.14%*

*Survey Response Rate: n/a*

*Explanatory Information: Fifty-seven employer surveys were submitted. Of those, 35 included responses specific to calculation of the employer satisfaction measure. The response rate cannot be calculated as the base sample size is not known for each survey strategy. Aggregate data were reported for three survey distribution strategies, with the number of total employers responding for each presented below:*

<i>Method 1: Distribution by Texas Department of Criminal Justice Parole Division/metro areas</i>	<i>1</i>
<i>Method 2: Distribution by Windham staff at workforce centers, job fairs, and to other stakeholders</i>	<i>46</i>
<i>Method 3: Distribution by Windham staff to employers that work closely with CTE instructors</i>	<i>10</i>

## SYSTEM ACCOMPLISHMENTS

### Action Plans

Action plans (AP) are the high-level plans that identify the major tasks, milestones, time frames, and performance measures necessary for achieving the 14 long term objectives (LTO) and/or system goals outlined in *Advancing Texas*. Typically, APs span multiple years and assign accountability to a system partner(s) for each major task or milestone. They are driven by the plan's overall mission, strategy statements, LTOs, and critical success factors.

Two types of APs were included in *Advancing Texas*:

- ▶ *System APs* affect the system as a whole, include multiple partners at various times, and are directly linked to the system LTOs.
- ▶ *Partner APs* affect a specific partner and are usually linked to a programmatic LTO of a specific agency.

### Key Outcomes

Outcomes for the 14 LTOs are presented below, grouped by the plan's three key performance areas (KPA). During the development of *Advancing Texas*, the KPAs were determined by examining similarities between the critical business issues and by identifying where those issues affect the state's workforce system.

#### ***KPA: Systems, Operations, Competencies, and Integration***

This KPA included four APs that addressed system issues, such as the need for current supply-demand information and several projects related to career and technical education (CTE).

*LTO – Produce each biennium, commencing in 2010, a report that documents an assessment of the number and type of postsecondary education and training credentials (certificate, level two certificate, associate, bachelor's and advanced degrees) required to match the demand for a skilled and educated workforce. The assessment will include the number of forecast net job openings by occupation at each level of postsecondary education and training and the number of credentials needed to match that forecast.*

This LTO addressed an integrated planning initiative that required partner coordination. Work has been completed by the Texas Higher Education Coordinating Board (THECB) and the Texas Workforce Commission (TWC) to create a supply and demand database, through the TWC's Strategic Workforce Assessment Program (SWAP).

*... effectively integrating planning initiatives that require partner coordination to ensure alignment.*

Readily available supply-demand reports provide data that help education and training providers to plan and better align their programs to industry needs as customers can access local data and produce customized reports. SWAP provides pre-defined occupational subsets for local workforce area target occupations; AchieveTexas career clusters; and science, technology, engineering, and mathematics (STEM) occupations. Within SWAP, an occupations-to-programs crosswalk validated by the TWC uses the Standard Occupational Classification system and the Classification of Instructional Programs. New features, reports, data items, and analytical tools are in continuous development, dependent on user needs and available funding.

Initially, the TWC developed a *SWAP User's Guide* to introduce stakeholders to SWAP's analysis tools. The agency later created an interactive format to better guide users in developing reports and allow for continued evolution of online tools. User scenarios that pose hypothetical education or workforce planning issues were completed in 2013 to demonstrate how SWAP can be used to provide appropriate data and analysis.

The TWC planned to work through the local boards' planning departments to introduce SWAP to its education partners and to obtain feedback on whether the project met user needs. This plan was modified, and the TWC communicated directly with the community and technical colleges (CTC). In 2013, letters introducing SWAP were sent to all CTC presidents and to each school's Skills Development Fund program contact.

The TWC also planned to conduct a statistically valid user survey to assess interest in the product. While a survey was not conducted, the agency studied use of the tool by counting "hits" to the SWAP web pages. Analysis indicated usage varied month-to-month. A more in-depth analysis (e.g., user session, page views) was not possible since SWAP is housed as a module on another website.

House Bill (HB) 809 (83<sup>rd</sup> Legislature) required dissemination of information regarding employment opportunities to secondary school students. At least quarterly, the TWC is to provide the Texas Education Agency (TEA) with information regarding disaggregated current and projected employment opportunities in the state. The TWC provides the required information through a new web-based tool, Help Wanted Online<sup>25</sup>, which allows secondary students and others to access up-to-date information for employment opportunities in any number of occupational areas—by county, educational service center region, or local workforce areas.

In June 2015, the TWC was awarded a three-year Workforce Data Quality Initiative grant from the U.S. Department of Labor (DOL). Grant funds will support development of a new Texas supply and demand analysis internet portal and the expansion and upgrading of other labor market and career information products. The new publicly accessible, web-based tool will improve the quality and availability of workforce data—benefiting workforce system partners, employers, and consumers.

The TWC and the THECB have worked independently and together on several related reports and online applications. Efforts will continue with emphasis on products designed to facilitate informed choices by individuals interested in pursuing postsecondary education. Through such efforts, labor market data are being used as part of the continuous improvement process at the individual student and institutional levels.

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*LTO – By 2013, Texas will decrease high school dropout rates by implementing rigorous career technical education as a part of the recommended or advanced high school graduation program.*

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CTE programs provide valuable skills training, and are proven to improve high school students' successful completion. Enhanced and more effective integration of academic and CTE options at both the secondary and postsecondary levels increases graduation rates and assists with student transition to further education or into the workforce. This LTO focused on college and career readiness, with the intent of increasing the availability of both academic and rigorous CTE courses to support students through a range of choices including two- and four-year degrees, apprenticeship, and the military.

*... college and career readiness will be achieved by the availability of both academic courses and rigorous career and technical education courses.*

Several of the AP's tasks were affected by passage of HB 5 (83<sup>rd</sup> Legislature) which required changes to public school accountability, including to assessment and graduation

requirements. The bill allows the education commissioner to join a multi-state consortium for developing CTE courses in high-demand career areas and allows school districts to develop CTE courses or career

<sup>25</sup> <http://www.texasindustryprofiles.com/apps/mHWOL/index.asp/>.

training programs. It also requires the TEA, in collaboration with the THECB and the TWC, to evaluate the changes to the curriculum requirements mandated by the bill.

Criteria were being developed for the Campus Distinction Designations for the 21<sup>st</sup> Century Workforce Development program as required by HB 3 (81<sup>st</sup> Legislature); however, the 83<sup>rd</sup> Legislature discontinued this project. The TEA continues to make progress on all other AP tasks, including:

*CTE Course Development and Texas Essential Knowledge and Skills (TEKS)*—The CTE TEKS, the state-mandated curriculum, incorporating the College and Career Readiness Standards, were adopted by the State Board of Education (State Board) and implemented in 2010–11. The TEA reviews corresponding TEKS courses in an effort to ensure secondary/postsecondary alignment. In addition, the THECB reviews the *Workforce Education Course Manual* on a periodic schedule to ensure course currency.

The State Board completed review and revision of the CTE TEKS in September 2015, after having convened review committees in the summer and fall of 2014. The board-appointed committees included representatives from secondary education, postsecondary education, professional associations, and business and industry. With the exception of the financial mathematics course, effective for the 2015–16 school year, the revisions will be effective in the 2017–18 school year.

The TEA previously reported that about 200 CTE courses have been developed and adopted by the State Board. Courses were organized around the 16 national career clusters, and included multiple courses that met graduation requirements for fourth-year science or math as well as one option each for English, fine arts, and speech. However, HB 5 (83<sup>rd</sup> Legislature) required significant changes to the high school graduation program/requirements, establishing the Foundation High School Program for all students entering high school beginning in 2014–15.

Under the Foundation High School Program rules adopted by the State Board, advanced CTE courses with substantively similar and rigorous academic content may satisfy the third and fourth mathematics credit, or the third and fourth science credits. During the CTE TEKS revision, additional CTE courses were considered for math or science credit. HB 5 also required that the State Board adopt at least six advanced CTE and technology education courses, including personal financial literacy and statistics courses, to satisfy the fourth mathematics credit.<sup>26</sup>

*Professional Development*—Professional development addressing the CTE TEKS has been under way for teachers since 2010. Initially, training was scheduled and facilitated through the state's Education Service Centers and courses are now available online through Project Share. This internet portal was designed to provide professional development resources for teachers across the state and to build professional learning communities where educators can collaborate and participate in online learning opportunities. The ninth and final CTE professional development course was deployed during the 2013–14 school year. All nine courses are monitored and updated as needed.

*Dual Credit and Credit Transfer*—The TEA works with the THECB to design, develop, and coordinate policies and processes related to dual credit courses and credit transfer. *Study of Early Assessment and Early Intervention Models*, prepared by Jobs for the Future, was published in 2012. It fulfilled the requirements of HB 3468 (82<sup>nd</sup> Legislature) which required the TEA, in consultation with the THECB, to conduct a study of best practices and existing programs offering early assessments of high school students to determine college readiness, identify any deficiencies in college readiness, and provide intervention to address any deficiencies before high school graduation.

*Early College High Schools*—The TEA continues to develop and deploy early college high schools (ECHS). These schools are located on or in proximity to a college campus to allow students in historically underrepresented college-going populations the opportunity to earn a high school diploma and an associate's degree or up to 60 hours of college credit over four years. The designation process is

<sup>26</sup> Texas Education Code (TEC), Title 2, Subtitle F, Section 28.00222.

required for all current ECHSs, as well as applicants seeking designation. Forty-four ECHS designations were announced in fiscal year (FY) 2015, increasing the total number to 154 for the 2015–16 school year.

Last year, the TEA entered into a memorandum of understanding with the TWC and the THECB to fund and operate a grant program that encourages the development and creation of CTE-focused ECHSs. The initial grants were awarded in June 2014, with six campuses approved through four grantees.

In addition, the TEA announced the designation of 19 new Texas Science, Technology, Engineering and Mathematics (T-STEM) Academies for 2015–16, for a total of 104. T-STEM Academies are rigorous secondary schools focusing on improving instruction and academic performance in science and mathematics-related subjects and increasing the number of students who study and enter STEM careers. They are demonstration schools and learning labs that develop innovative methods to improve science and mathematics instructions.

End-of-Course (EOC) Exams—The EOC exams are being implemented in a multi-phase approach beginning with 2011–12 ninth-grade students and with successive grades added annually. Longitudinal data are expected to be available following the 2015–16 academic year. However, HB 5 (83<sup>rd</sup> Legislature) reduced the number of EOCs from 15 to five, which required changes related to cumulative scores and related issues that may impact data availability.

With the reduced number of required exams, the TEA noted it was likely that most students will take all but one EOC exam prior to grade 11. Across the five required subject areas—algebra I, English I, English II, biology, U.S. history—most high school students are passing the EOC exams on the first try. Based on preliminary statewide results for the 2014–15 school year, 83.5% of students in the class of 2015 had already passed all five required assessments and faced no state-mandated tests during their senior year.<sup>27</sup>

HB 3 (81<sup>st</sup> Legislature) required the TEA to conduct research to substantiate any correlation between EOC performance and success in military service or postsecondary workforce training. As noted above, data will not be available until the 2014–15 graduating seniors have joined the military and/or completed some level of postsecondary workforce training.

*LTO – By 2013, education and training partners will have the infrastructure necessary (policies, procedures, data processes, rules, and capabilities) to facilitate the effective and efficient transfer of academic and technical dual credit courses from high schools to community colleges and four-year institutions.*

More coordinated and integrated planning efforts are needed to improve programs and initiatives to ensure seamless education and career transitions. As noted above, HB 5 (83<sup>rd</sup> Legislature) required changes to public school accountability, including to assessment and graduation requirements that directly affected several *Advancing Texas* APs.

*... clear and aligned educational policy and regulations for secondary and postsecondary transitions will improve the efficiency and effectiveness of educational outcomes.*

Work on this LTO focuses on the processes for transferring dual credit from high schools to postsecondary institutions. Dual credit enrollment at all Texas higher education institutions has risen significantly since record keeping began in 1999, reaching a high of 112,361 in 2014 (fall enrollment). Students enrolled in technical semester credit-hour courses

at Texas CTCs constituted 12.3% (fall 2013), 13.3% (spring 2014), 4.9% (summer 2014), and 13.7% (fall 2014) of total dual credit students.<sup>28</sup>

<sup>27</sup> TEA press release (June 3, 2015).

<sup>28</sup> The THECB defines dual credit as a process by which a high school junior or senior enrolls in a course and receives simultaneous credit from both the college and the high school. Data include fractional dual credit semester credit hours (e.g., greater than zero, less than one hour).

The TEA and the THECB continue to work together on all aspects of the infrastructure for transferring academic and technical dual credit courses from high schools to community colleges and four-year institutions. Related research and publications include:

- ▶ *Study of the Intersection of Dual Credit Course Policies and End of Course Requirements Authorized by HB 3, 81<sup>st</sup> Texas Legislature* (January 2011) – Prepared by the TEA and Shapley Research Associates, the study addressed the HB 3 (81<sup>st</sup> Legislature) requirement for the commissioners of education and higher education to study the feasibility of allowing students to satisfy EOC requirements by successfully completing a dual credit course through a higher education institution, and to make recommendations to the legislature based on that study.
- ▶ *Research Study of Texas Dual Credit Programs and Courses* (March 2011) – The TEA, in collaboration with the THECB, contracted with American Institutes for Research and Gibson Consulting Group Inc. to conduct the study.
- ▶ *Dual Credit Report* (March 2012) – Published by the THECB, this report fulfilled the requirements of Rider 33, HB 1 (82<sup>nd</sup> Legislature).
- ▶ *Study of Early Assessment and Early Intervention Models* (November 2012) – As noted in the previous AP report, this study was prepared by Jobs for the Future to fulfill the requirements of HB 3468 (82<sup>nd</sup> Legislature).

Key actions over the six-year plan period include:

EOC Exams—As noted in the LTO report above, EOC exams are being phased in beginning with 2011–12 ninth-grade students, with successive grades being added annually. Longitudinal data are expected to be available following the 2015–16 academic year.

Data Systems Improvement—Beginning fall 2011, THECB data systems allow the tracking of students from dual credit into college-level courses with associated course grades included. This change provides greater opportunities to evaluate the preparedness level of students who take courses as dual credit versus as a traditional college course, as well as the success that each group has in successive college courses. Data analysis will be limited to the number of cohorts included in the system, beginning with the FY 2012 cohort.

The TEA implemented the Texas Student Data System as an alternative system. Early adopters began using the new system in the 2013–14 school year. The system is being rolled out to the remaining local educational agencies in Texas in three phases, ending in 2016–17.

The Texas Public Education Information Resource website ([www.texaseducationinfo.org/](http://www.texaseducationinfo.org/)) generates dual credit enrollment and outcome reports. A new report released this year provides Texas public college enrollment and employment outcomes for Texas public high school graduates, with data for CTE participants, non-CTE participants, and all graduates.

Learning Outcomes Consistency—The THECB continues to work with CTC and university faculty to develop explicit learning outcomes that will be consistent across academic courses taught statewide. The learning outcomes are distributed to all faculty in the discipline at the institutions for comment, with final recommendations made to the *Academic Course Guide Manual (ACGM)* committee for adoption. The ACGM is the official list of approved courses for general academic transfer to public universities and, as such, serves as the academic course inventory for CTCs. Last year, the THECB reported that of over 1,000 active courses, this process had been completed for the most commonly used courses. Work will continue to develop outcomes for additional courses.

In addition to expanding learning outcomes in ACGM courses, the THECB is in the planning stage for developing programs of study for technical courses. HB 2628 (84<sup>th</sup> Legislature) requires the THECB to periodically review each field of study curriculum to ensure alignment with student interest, and with



academic and industry needs. It also sets out the process under which the THECB will collaborate with partner agencies, institutions of higher education, CTE experts, and college and career readiness experts to develop programs of study curricula. Programs of study provide understandable and viable education and career training pathways for students and facilitate transfer options. They may support higher completion and graduation rates, and an increasing number of individuals with licenses or credentials needed in today's job market.

*Dual Credit Mechanisms*—The TEA continues to deploy ECHSs. As noted in the LTO report above, 154 were approved for the 2015–16 school year, as well as 104 T-STEM Academies and the CTE ECHS campuses that were established as a result of the grant program jointly sponsored by the TEA, the THECB, and the TWC. The agency has implemented an annual application process for schools seeking initial or renewed ECHS designation. To operate as an approved ECHS, a district or charter school must partner with an institution of higher education and apply to the TEA. To receive ECHS designation, a school must implement the ECHS Blueprint which has been researched and designed to target, enroll, and serve students who may not otherwise consider attending college.

The TEA also continues to work with public high schools to meet the TEC, Section 28.009, mandate to offer all students at least 12 hours of college credit. School districts have local authority over which methods to use, with options including dual credit, advanced placement, international baccalaureate, and advanced technical credit courses, as well as locally articulated courses. HB 5 (83<sup>rd</sup> Legislature) provides options for a performance acknowledgement on a student's diploma and transcript, including outstanding performance in a dual credit course. HB 181 (84<sup>th</sup> Legislature) limited the requirement to transcripts only, effective with high school diplomas issued at the end of the 2014–15 school year.

*LTO – By 2013, design and implement a demonstration program targeted to improve perception of career options that career technical education (CTE) programs enable.*

Career information and awareness may facilitate more effective transitions to further education or the workforce. This LTO focused on increasing awareness of CTE as preparation for either postsecondary education or careers. CTE options are increasingly important, as many high-skill, high-wage jobs critical to Texas' economy require some postsecondary education, but less than a four-year degree.

... career and technical education provides preparation for desirable career options.

During *Advancing Texas'* development, the Council elected to be responsible for this AP, with the Executive Committee providing oversight. This role is consistent with the Council's charge in Texas Government Code (TGC), Section 2308.101(8), to encourage, support, or develop research and demonstration projects designed to develop new programs and approaches to service delivery.

To accomplish the AP's objective, the Council researched, identified, and validated best practices for providing information to improve understanding of educational pathways to careers. The Council published *Research Findings: Raising Awareness of Career Technical Education in Texas Schools* (September 2010) and in 2011 convened a workgroup to develop a model based on findings in the report. The resulting guide, *Career Awareness Model: A Guide to a Sequential, Cohort-Based Approach* (June 2013), details the model developed using the Council's best practices research. Posted on the Council's website (<http://gov.texas.gov/twic/work/>), the guide includes:

- ▶ an introduction stating the importance of understanding the career options available to students after high school and college and the educational requirements of these options,
- ▶ a short description of how the model was designed by a stakeholder team using the results from the Council's research study, and
- ▶ a detailed description of program components and implementation standards.

Last year, Council staff coordinated with the Career and Technology Association of Texas to request feedback on the guide and model. The association's listserv members were asked to indicate if they had used the guide or implemented elements of the model or plan to do so in the future, and to provide comments on the outcomes, both positive and negative. Survey responses were not sufficient to permit analysis.

### ***KPA: Customer Outcomes***

To meet the growing and changing demands of Texas' employers, everyone must be part of the critical pool of potential employees. *Advancing Texas* identified four target populations, addressed by the four LTOs outlined below.

*LTO – By 2013, the blind and disabled populations will achieve additional employment outcomes.*

The Health and Human Services Commission's Department of Assistive and Rehabilitative Services (DARS) is responsible for developing system capabilities, including transition technologies, designed to ensure employment outcomes for workers with disabilities or who are blind or visually impaired.

*... with focused assistance the blind and disabled can achieve enhanced employment outcomes.*

For several years, DARS has been involved in successful, innovative models that have created and facilitated partnerships between business/industry and rehabilitation providers. DARS has also used an embedded training model

when working with medium and large businesses in a variety of industries. DARS developed a template for fee-based embedded training and accompanying policies that went into effect on August 1, 2012. Cost reimbursement contracts were completed and replaced with ongoing, fee-based arrangements with community rehabilitation providers and businesses.

In FY 2014, DARS closed out all contract activities related to the embedded training model. Based on guidance from the federal Rehabilitation Services Administration, implementation of a revised model was deferred until issuance of a technical assistance circular about the use of work-based learning models. In the interim, DARS continued to work with consumers and employers to provide on-the-job training, as well as work adjustment training and job placement, through its contracts with community rehabilitation providers. Renewal or re-contracting decisions were generally based on an evaluation of factors such as the contractor's accomplishment of or progress toward measurable goals and the presence and resolution of monitoring findings. At the end of FY 2014, the number of fee-for-service contracts for employment-related services totaled 413 and 94, respectively, for the general and the blind vocational rehabilitation programs. The baseline FY 2015 number was expected to stay the same given that no substantive changes were anticipated for the first quarter of the new year.

The TWC's sunset bill, Senate Bill (SB) 208, continued the agency for 12 years, through September 1, 2027. Subject to federal approval, if required, the bill mandates transferring services to help people with disabilities from DARS to the TWC, effective September 1, 2016. By March 1, 2016, the agencies are to submit a transition plan to the legislative oversight committee and the Governor, to be finalized after consideration of the committee's comments and recommendations. The bill further requires integration of DARS' two separate vocational rehabilitation programs—those serving adults with disabilities, or the blind or visually impaired—to eliminate administrative duplication and better serve customers. The TWC is to create a designated state unit for vocational rehabilitation services to comply with federal regulations, and to integrate the two programs no later than October 1, 2017.

Last year, the DARS-Divisions for Rehabilitation Services (DRS) and Blind Services (DBS) began work to establish a consolidated DARS business relations team. Following DARS' sunset review, the Sunset Advisory Commission's decision report (January 2015) for DARS indicated that DARS would retain responsibility for immediate actions, with the TWC to ensure that the recommendation carry forward following the program transfer. The change was effective in September, and is expected to allow DARS to

better coordinate internal and external efforts in order to build stronger business relations and improve consumers' employment outcomes.

While working with the TWC on transition plans, DARS continues to work in partnership with businesses, local workforce boards and centers, secondary and postsecondary education institutions, and other community organizations. Examples of current initiatives include:

*Project HIRE*—In 2012, the Texas Council for Development Disabilities awarded the DRS a five-year, \$1.25 million grant. Project HIRE—Helping Individuals Reach Employment—partners include South Texas College, the University of Texas-Pan American, Communication Access Ability Group of South Texas, Easter Seals Rio Grande Valley, the Lower Rio Grande Valley local workforce board, the DBS, and an advisory committee drawn from the local disability, business, and education communities. The grant is assisting 50 individuals with developmental disabilities in Hidalgo County who are 18–35-years old to attend South Texas College. The intended outcome for each participant is a continuing education certificate, vocational certificate or degree, and ultimately, employment.

Focused, one-on-one assistance such as educational coaches, individual and family support, and both college and employment readiness are provided. The grant also supports work with local businesses to mentor and support the students, including opportunities for job shadowing and on-the-job-training.

Last year, DARS reported that 43 students had participated, including two who completed South Texas College certificate programs during year three. Another pilot site planned for El Paso was expected to assist DARS in evaluating this supported education model. Additional replication strategies will be identified and implemented based on DARS' initial findings, as well as the pilot evaluation planned for the final year of the grant.

*Project SEARCH*—Business-led, school-to-work internships provide work experience to help disabled individuals who are 18–22 years old transition to employment. By participating in the one-year training, DRS and DBS consumers benefit from career exploration, innovative adaptations, long-term job coaching, and continuous feedback from teachers, job coaches, and employers. The innovative workforce and career development model benefits the individual, workplace, and community.

*Work Matters*—In FY 2014, the DBS launched the Work Matters initiative to identify higher wage employment opportunities for consumers and to align division operations to maximize those opportunities. The DRS joined the initiative, enabling the divisions to work together to improve consumers' employment opportunities. The initiative has two projects: (1) strengthening business and partner relationships with federal contractors, state agencies, private industry, and local workforce boards and centers; and (2) increasing the use of data to help consumers define optimal vocational opportunities, and incorporating the data, tools, and strategies into counseling and guidance processes used by vocational rehabilitation counselors.

*Diversity Symposia and Job Fairs*—In May, DARS, the DOL's Office of Federal Contract Compliance Programs, the U.S. Department of Veterans Affairs, the Alamo Area Disability Alliance, and the Alamo local board hosted the third annual AHEAD: Alliances Helping Employers Achieve Diversity symposium and job fair. The event was designed to increase employment opportunities for veterans and other individuals with disabilities while helping employers, particularly federal contractors and subcontractors, diversify their workforce. The event was part of a DARS strategy to assist employers who are subject to recent changes to Section 503 of the Rehabilitation Act of 1973, as amended, which established a nationwide utilization goal (7%) for qualified individuals with disabilities. Last year, DARS reported plans to continue its partnership with this DOL office and to collaborate with workforce system partners to develop and implement a statewide strategy to connect contractors with qualified applicants. Similar events have been held in other Texas cities.

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*LTO – By 2013, the veteran population will achieve additional employment outcomes.*

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This LTO specified that the Texas Veterans Commission (TVC) would work to ensure state and leveraged federal services provide veterans with the programs, products, and services necessary to accommodate their needs and to enable them to enter the workforce successfully. Key actions included:

*Employer and Participant Services*—The TVC offers employment services to Texas veterans and helps employers find qualified veteran job applicants. In 2009, the TVC launched a statewide initiative by hiring a dedicated business outreach coordinator to work more closely with employers, the TWC, and local workforce boards to leverage more training and placement services for veterans.

*... veterans with a wide range of disabilities receive training, referral, and placement services and return to the civilian workforce.*

The TVC expanded this successful initiative, with veterans business representatives strategically located in central Texas, the Dallas/Ft. Worth area, San Antonio, and Houston. At no cost, the representatives have assisted employers by providing personalized services and assessing employers' needs in order to match the skills, abilities, and experiences

of veteran job candidates. In response to new DOL's Veterans' Employment and Training Service (DOLVETS) guidelines, employment representatives are integrating with local boards' business service units to focus primarily on outreach to the employer community and facilitation within the state's employment service delivery system.

The TVC also works with the TWC on the annual statewide Hiring Red, White & You! hiring fair for Texas veterans, service members, and their spouses—with the fourth annual event scheduled for November 2015. The TVC prepares veterans by conducting workshops to assist with applications, resumes, and interviewing techniques, and by providing one-on-one counseling. In the first three years, 31,228 job seekers connected with 4,732 employers. Last year, 1,759 employers participated—up almost 200 statewide from the prior year. The event resulted in 431 onsite hires, as well as other networking that led to interviews and post-event job offers.

*Coordinating Council for Veterans Services*—SB 1796 (82<sup>nd</sup> Legislature) established the Texas Coordinating Council for Veterans Services to coordinate activities of state agencies that assist veterans; coordinate outreach efforts; and facilitate relationships among state, federal, and local agencies to identify and address issues affecting veterans. SB 1892 (83<sup>rd</sup> Legislature) expanded the group's membership and simplified the workgroup structure to allow more flexibility. Chaired by the TVC, the group's first biennial report to the legislature (October 2012) included recommendations in six areas including employment and higher education. The second report (October 2014) included recommendations in eight areas, as well as cross-topic issues and an update on actions taken over the two-year period.

*Veteran Entrepreneurship*—SB 1476 (83<sup>rd</sup> Legislature) formally created the Veteran Entrepreneur Program. Based on a pilot project launched in 2012, the program fosters and promotes veteran business ownership and entrepreneurship throughout Texas. Veterans interested in entrepreneurship receive assistance through a series of seminars that disseminate information regarding business plan development, financial guidance, government procurement, and information regarding franchise opportunities. In addition, a business training course and a government-contracting event have been offered. Since the seminars started in mid-2012, more than 1,000 veterans have received assistance.

This year, the TVC launched the Veteran Entrepreneur Academy, a five-month program followed by a two-year mentorship with a business counselor. With onsite and online classes, the program is designed to provide veteran entrepreneurs with a strong foundation in small business basics. Active duty and honorably discharged veterans or their spouses who complete the onsite and online components receive a certificate of completion and are eligible for loans up to \$35,000 at a fixed, 5% interest rate.

*State of Texas Soldier Employment Initiative*—The TVC and the TWC partnered on the State of Texas Soldier Employment Initiative. Funded by the DOL, the initiative was part of a \$750,000 pilot project to help returning U.S. Army veterans find employment prior to separating from the service, particularly in

growth industries such as the medical, energy, and technology fields. Texas was one of four states chosen for the project due to the high population of Army veterans and its history of collaboration with the DOL and the Army to improve veterans' employment access. Initiative representatives, all veterans themselves, were located in four local workforce areas that provide services to communities near Fort Hood in Killeen, Fort Bliss in El Paso, Camp Mabry in Austin, and Ellington Air Field in Houston. The pilot ended June 30, 2014; however, the TWC requested and received a no-cost extension from the DOL. Remaining grant funds supported ongoing activities for Forts Hood and Bliss through June 2015.

*Collaborating with Federal Partners*—Actions included:

- ▶ *REALifelines* – Working with the U.S. Department of Defense and the Veterans Administration, the TVC provided individualized job training, counseling, and reemployment services to assist severely injured veterans in returning to civilian life. *REALifelines* counselors were located at Brooke Army Medical Center, Fort Bliss, and Fort Hood. In December 2012, the TVC was notified that the program would no longer be funded as a special initiative. The agency was able to retain the counselors as disabled veterans outreach program specialists. After the program was discontinued in December 2013, the TVC consulted with the DOLVETS and requested special initiative funding to support three disabled veterans outreach program specialists to provide employment services at military treatment facilities.
- ▶ *Transition Assistance Program* – The TVC previously coordinated with the DOL to facilitate seminars to provide job search and related services to military personnel within 180 days of separation or retirement. The number of seminars and participants increased with the military drawdown and enactment of the VOW to Hire Heroes Act of 2011, which made participation mandatory for most service members. As required by the VOW Act, the program is now administered by contracted facilitators; however, the TVC continued to assist with some sessions.

*Outreach and Recognition*—During the plan period, the TVC launched a series of public service announcements and the Texas Veterans Portal<sup>29</sup>. The portal provides state and federal benefits information for veterans, active duty service members, spouses, and dependents.

The TVC recognizes employers that are committed to hiring veterans. An *Employer Spotlight* section is included on the agency's website and Employers of the Year are honored annually. Award categories have included large, medium, and small employer; large, medium and small public entity; disabled veteran employer; local workforce center; local workforce board; extra mile; and grantee of the year.

*LTO – By 2013, design and implement integrated Adult Education and workforce skills training programs to enhance employment outcomes for the English language learner population.*

This LTO required the TEA and the TWC to develop new and enhance existing methods, programs, and processes for programs targeted at the over 17 English language learner (ELL) population that integrated both language and occupational skill acquisition. The ELL population that was the focus of this AP consisted of individuals who have a high school diploma or postsecondary credential in their native country but for whom English is not their first language. This rapidly growing population requires additional skills for workforce-related success.

*... providing the growing population of English language learners with additional skills for workforce-related success.*

The Council collaborated with the state demographer, and in 2010 published the first companion paper to *A Primer on Adult Education in Texas* that included information on the nativity, education, and working age of Texas' population. Data showed that over 3.8 million individuals qualified for adult education services, with that number expected to double by 2040. Of the 3.8 million, almost 1.7 million were in the ELL population, with over 500,000 of those in the target population for this AP.

<sup>29</sup> Housed on the Texas.gov website at <http://veterans.portal.texas.gov/en/pages/default.aspx/>.

In 2010, a work group was formed to design and develop a pilot model to be executed through the CTCs and local boards. The group, assisting with this LTO and one focused on workplace literacy included representatives from the TEA, the TWC, the THECB, the CTCs, local boards, adult education providers, and Council staff.

The THECB supported the effort under Riders 45 and 56, SB 1 (81<sup>st</sup> Legislature) and was added as a participant on this AP in conjunction with the *2012 Update to Advancing Texas*. A request for applications was issued then later revised and reissued to allow the projects to be more flexible yet still focus on intended outcomes for integrated basic education and skills training.

Since 2010, the THECB and the TWC have partnered with 21 colleges to establish and support the Accelerate Texas (previously ABE-Innovation Grant) initiative, designed to engage Texas CTCs to implement integrated pathways for advancing lower-skilled adult learners into high-demand occupations. Of the 21 colleges, eight participated in the pilot that began in fall 2011 and ran through August 2013: Alamo Colleges, Amarillo Community College, El Centro College, Hill College, South Texas College, Tyler Junior College, and Wharton County Junior College. A previously funded program at El Paso Community College was also monitored as a pilot.

Performance reporting for the pilots began in 2012, with data published in the **Less Formal Measures** section. Seven of the pilot colleges were awarded funding to support student completion and data entry through FY 2014. One college did not have any students enrolled in certificate programs after the grant ended, so no additional funding for data submission was provided. The THECB reported there were fewer students during this period as the schools were tracking completers and only three colleges had new students.

A descriptive analysis of the Accelerate Texas programs was completed by Texas State University in November 2013. While the report did not focus solely on the pilot colleges, it provided information on barriers encountered and lessons learned. Key lessons learned include:

- ▶ Two barriers were identified by some of the mentoring colleges regarding their mentees: (1) identification of adult education and literacy providers to conduct the basic skills portion of the integrated pathway, and (2) changes in contracted providers. For example, not all colleges have a provider on their campuses or a strong relationship with one in their region. In some cases, grant funds have been used for a basic skills instructor.
- ▶ Colleges with a higher level of integration between workforce training programs and adult education or basic skills support staff and faculty had a greater likelihood of sustaining and scaling the model beyond the second year of funding.
- ▶ Funding the technical training portion of the integrated pathway was a challenge, including for the mentor colleges. Colleges identified a variety of funding streams (e.g., grants, scholarships, self-pay) to support tuition and fees for students working concurrently on GED and technical training. Local boards may assist with child care or transportation but few support tuition and fees for students who do not have a GED.

In addition, Texas A&M University's Public Policy Research Institute is conducting an ongoing evaluation of the programs, including the mentor colleges. Alamo, Amarillo, and South Texas—the remaining pilot colleges with continued funding—were included in the evaluation completed in December 2014. The Institute will continue evaluating Accelerate Texas colleges through December 2016.

These remaining pilot colleges with continued funding built sustainable Accelerate Texas models on their college campuses and within their districts. In FY 2013, they were identified as mentor colleges and continue to support newly funded colleges in the design and implementation of their integrated programs.

The 2015–2017 Accelerate Texas request for applications required that colleges offering an integrated pathway offer 75% of their workforce training certificates as Marketable Skills Achievement awards

(minimum nine semester credit hours or 144 contact hours) or level 1 certificates (minimum 15 semester credit hours or 360 contact hours). Twenty-five percent of the certificates can be identified through local employer, local industry association need, or real-time labor market demand.

Under the request for applications, colleges could apply as a single college or as a mentor college. Single colleges will be supported by a mentor college during the first two years of funding. If successful in sustaining the program with non-grant funds, the school will be eligible to be a lead, or mentor, college. The mentor approach to support scaling the model will continue.

HB 1 (84<sup>th</sup> Legislature) included a THECB appropriation of over \$4 million to support community college grants over the 2016–17 biennium. As directed by Rider 36, competitive grants will be used to scale and sustain Accelerate Texas program models for increasing the participation and success of adult education and literacy students transitioning into postsecondary education and/or training programs and for students assessed under the Texas Success Initiative Assessment as demonstrating basic academic skills.

*LTO – By 2013, design and implement targeted Adult Basic Education (ABE) programs to enhance employment outcomes for populations requiring workplace literacy skills.*

This LTO specified that the TEA and the TWC were responsible for developing new and enhancing existing methods, programs, and processes for programs that address workplace literacy acquisition targeted at the workforce literacy population over age 17. Workforce literacy skills are the basic and soft skills considered necessary to perform in entry-level occupations or the skills needed to adapt to technological advances in the workplace.

*... assisting those with low literacy levels through targeted literacy programs to gain or maintain employment.*

A nationally recognized career awareness curriculum, previously offered by some Texas sites with successful results, was selected for the pilot projects. The career exploration awareness component focused on workplace literacy skills designed to facilitate the transition from adult education to workforce training.

In 2010, the TWC completed an assessment that identified the Alamo, Capital Area, and Gulf Coast local workforce boards as pilot program candidates based on their strong relationships with adult education providers. The work group described in the previous LTO report designed a model of program outreach and delivery that fit within existing adult education funding, program offerings, and initiatives, and that could be offered concurrently with adult education levels 4 through 6 as defined by the National Reporting System.

The TEA committed \$400,000 in Adult Education State Leadership funds for the pilots, which were negotiated with multiple adult education providers in the three regions. Launched in July 2011, the pilots were extended for an additional year and ran through June 2013. To increase enrollment, adult education programs recruited from existing classes and accepted students below levels 4 through 6. Transition counselors/coordinators were hired to assist learners in making wise choices and successful transitions to postsecondary education, training, and employment.

Local workforce literacy resource teams assisted with service delivery design, as well as identification of partner roles and responsibilities and obstacles to success. In August 2013, Texas LEARNS completed a toolkit containing deliverables developed by the participating programs.

Council staff was charged with evaluating the pilots to determine strengths and weaknesses, and to make recommendations for improvement. A logic model and evaluation plan were presented to the Council in June 2013; however, a structured evaluation could not be conducted due to the lack of vigorous and reliable data collection. Available performance data are published in the **Less Formal Measures** section.

SB 307 (83<sup>rd</sup> Legislature) mandated transfer of adult education and literacy programs from the TEA to the TWC, and the program was transferred on September 1, 2013. The TWC adopted program rules in

February 2014 and restructured the local provider system and state support and professional development services that deliver teacher training and program support and innovation.

The TWC's initial request for proposals incorporated key elements of the pilot model by requiring service providers to implement career pathways programs. The commission's goal is to incrementally increase the proportion of students who exit workforce services ready for work, or who are enrolled or co-enrolled in college and career training. This model provides opportunities for literacy and basic educational development and ensures these services link all students, regardless of academic and English levels, with employment, training, and college opportunities.

Program year 2014–15 grant recipients are required to provide: (1) college and career bridge activities; (2) individualized training, education, and career plans for students itemizing short- and long-term goals; and (3) career pathway models that include integrated education and training and work-based project models. To support increases in career and postsecondary education and training outcomes for the program, the TWC is implementing multiple strategies including enhanced enrollment and performance criteria, incentives for innovative acceleration, and integration and transition models, including Accelerate Texas, the integrated education and training model being implemented in coordination with the THECB.

### ***KPA: Programs, Products, and Services***

The six LTOs included in this KPA addressed issues ranging from the need for middle-skilled workers to increasing employer satisfaction with system products and services.

*LTO – Community and technical colleges will plan and execute education and training programs to address workforce skills gaps in their regions, as identified by local needs assessments or the biennial supply-demand report produced by the THECB and TWC.*

Middle-skill jobs require education and/or training beyond high school, but less than a four-year degree. Such jobs currently account for nearly half the jobs in the U.S. and in Texas, with that number projected to grow. However, given its success in job creation, Texas has an increasing need for workers with appropriate middle skills.

*... integrate and expand middle-skills training to meet current and future employer demand.*

Texas' CTCs serve a vital role in training individuals for middle-skill jobs. Better aligning customer needs with program development and delivery helps to ensure the availability of a population with the skills needed to meet current and future employer needs.

The tasks outlined for this LTO are dependent on delivery of the biennial supply-demand report required under another LTO. In 2011, the TWC and the THECB proposed a modified approach for the supply-demand analysis that centered on development of a web-based system to allow customers such as the CTCs to access their own local data and produce customized reports.

To support use of the online system, the TWC created user scenarios that pose hypothetical education or workforce planning issues, including several with applicability for higher education users. Letters introducing the SWAP scenarios were sent to all CTC presidents and to each school's Skills Development Fund program contact. They provide a reference for determining how closely aligned the CTC programs are to local workforce needs and for identifying gaps that require colleges to adjust program offerings.

In 2011, the THECB partnered with the Council to survey the CTCs to collect information on their strategies for determining employer satisfaction and using that information in institutional planning processes to improve program delivery. Blinn College and Lone Star College System were selected as models of promising practices and were formally recognized by the Council in December 2011. Sharing and possible replication of promising practices should result in opportunities for institutions to improve workforce training and employer satisfaction.



When developing new or expanding existing programs for emerging high-skill occupations, the CTCs consider program delivery methodologies and structures in an effort to increase both effectiveness and cost efficiency. Such efforts are ongoing and include work accomplished by South Texas College, Southwest Texas Junior College, and the Texas State Technical Colleges.

The Council contracted with the University of Texas' Ray Marshall Center to assess the availability and capabilities of supply and demand planning tools used in Texas and other states. The July 2014 report noted that there is a significant demand for better "gap analysis"—supply/demand reports that can generate current labor supply and projected labor demand and determine the differences in a regional area. The Council considered the report's findings during development of the next workforce system strategic plan and will continue to do so in its future work.

This year, the TWC was awarded a three-year grant that will support development of a Texas supply and demand analysis internet portal. The new publicly accessible, web-based tool will improve the quality and availability of workforce data available for CTC planning purposes.

*LTO – By 2012, design, develop, and implement a pilot program to demonstrate flexibility of the 'earn while you learn' model of traditional apprenticeship programs. Where appropriate, expand and replicate into new occupational areas by 2015.*

Under the Council's leadership, this LTO required expansion of the earn-while-you-learn model to address employer demand for skilled workers. The Council Chair assigned the Executive Committee the responsibility of overseeing implementation and reporting to the full Council. A project leadership team, including members from system partners—the THECB, the TVC, and the TWC—was created in 2010 and charged with identifying and recommending potential projects. The team reviewed projects in the following target industries: allied healthcare, health information technology, energy, aviation, and logistics and distribution.

*... expand the earn-while-you-learn model for deployment into middle-skills areas.*

The team then recommended, and the Executive Committee approved, six projects. Four remained active through the Council's pilot period or the end of their federal grant period, as applicable.

- ▶ *Pilots—defined as a partnership formed to develop a registered apprenticeship program in an occupational area that has not traditionally used apprenticeship as a means to train its workforce:*
  - Community Health Worker—Coastal Area Health Education Center
  - Health Information Technology—Dallas-Fort Worth Hospital Council Education and Research Foundation
- ▶ *Demonstrations—defined as a partnership formed to adapt an existing registered apprenticeship program to meet emerging industry demand:*
  - Comprehensive-National Electrician Solar Training—Austin Electrical Joint Apprenticeship Training Committee, ImagineSolar, and the Capital Area local workforce board [grant ended in July 2012; final report released in March 2013]
  - Distance Learning, Pre-Apprenticeship, and Outreach to Underserved Populations—Independent Electrical Contractors of Texas

The Council worked with the DOL and pilot project staff to develop action plans with major tasks and timelines for development and implementation of the new programs. The leadership team continued to: provide support and technical assistance, help identify funding and other resources, and monitor progress through quarterly written and verbal reports. In March 2012, the team and Executive Committee met in a joint session and heard updates from all projects. Regular reports were provided via conference call through August 2013.

Challenges were encountered as the projects began during the recession and implementation continued during the economic recovery. However, many lessons were learned, including the awareness and willingness to adapt in response to changing needs, by both employers and current and potential participants. *Registered Apprenticeship as a Strategy to Meet Employer Demand for Skilled Workers* (December 2013), the Council's final report, included documentation of promising practices.

*LTO – The Council will produce a data set whereby system stakeholders can ascertain Texas' position relative to key indicators of competitiveness.*

Data are required to ensure that system initiatives will be developed and executed to strategically position Texas in the global marketplace. Data must be available to benchmark Texas against other states and countries in the most significant and strategic education, workforce, and market outcomes. Since 2005, the Council has compiled data and published the *Texas Index*, with the final version released in 2013.

The *2013 Texas Index (2013 Index)* research report compiled data for 38 indicators organized into four domains, based on the value proposition that skilled and well-educated people create innovations that result in products and services that are sold in the marketplace. This continuum generates economic

*... data are required to ensure that system initiatives will be developed and executed to strategically position Texas in the global marketplace.*

activity that builds wealth for the state, and increases the level of wealth for Texans. In support of the proposition, data in the report focused on four critical, interrelated elements: intellectual capital, human capital, financial capital, and standard of living.

The *2013 Index* included 10-year trend data, as well as national and international comparative data. The report also contained a report card that indicated how Texas was performing across the four domains, thus identifying achievement as well as areas for improvement.

Results in the *2013 Index* showed that Texas was doing comparatively well, and continued to invest in the future of its residents. Texas successfully attracted businesses and created jobs through both the recession and recovery periods, with a competitive advantage over other states in areas such as labor productivity, gross state product per capita, and exports. The unemployment rate remained slightly elevated due to natural growth in the workforce and the return of previously discouraged job seekers to those counted as unemployed. However, the Texas unemployment rate was still more than one percent lower than the U.S. average.

The data indicated room for improvement in the areas of educational and workforce educational achievement. Strategies that increase enrollment and completion of postsecondary education, particularly supporting employment in middle-skill occupations, continue to be important. Skilled workers in these occupations are highly sought by employers. Higher education concentration in science, technology, engineering, and math disciplines increased, and Texas produced the second greatest number of patents of any state, indicating a strong focus on innovation.

The *2013 Index* displayed a comprehensive view of the state's recovery from the recession, with signs of an economy in full recovery prevalent in the data over the reporting cycle. Areas in training and education, research and development, and market composition were thriving, as the majority of indicators in these domains reflected a positive change. In addition, participant access indicators showed progress, indicating that prosperity in the state was on the rise. Data showed significant progress in recent years, and based on trends, more progress was expected for the state.

Since the Council first produced the index in 2005, other state entities have increasingly collected and disseminated similar data and information. The Comptroller's Office provides information on state revenue and budget, technology, jobs and education, and the economy. In June, the comptroller released a new 50-state scorecard that provides economic, demographic, and other comparisons ([www.comptroller.texas.gov/fiscalnotes/50states/](http://www.comptroller.texas.gov/fiscalnotes/50states/)). Other specialized websites include: [www.thetexasconomy.org/](http://www.thetexasconomy.org/) with economic indicators and financial trends; and <http://texasahead.org/> with

key economic indicators, forecasts, and in-depth reports. In addition, the TexasEDGE Data Center (<http://texasahead.org/regionalrpts/>) enables users to create custom reports using interactive maps and tools.

Of particular interest, the THECB examined how to benchmark Texas' education data to other states and nations. The Council for Continuous Improvement and Innovation in Higher Education was charged with developing a culture of continuous improvement in Texas higher education and a higher education system that is internationally competitive. The group recommended that an advisory committee be established to develop the new long-range plan for higher education in Texas. Approved by the Coordinating Board in July, *60x30TX* specifies an overarching goal: by 2030, at least 60% of Texans ages 25–34 will have a certificate or degree. The goal focuses on this population as an indicator of the economic future of the state and its ability to remain globally competitive, noting that the state's large population makes the Texas economy similar in size to that of many countries.

*LTO – Local boards will align with and support the workforce system strategic plan through their planning processes and related initiatives. This will be documented in board plans and plan modifications, which are submitted to the Council for approval.*

As the system's frontline partners, local boards must continue to enhance planning and collaborative efforts across workforce system components to meet employer and community needs. This LTO addressed local planning requirements and their relationship to the Council and the system strategic plan.

*... local boards must understand and meet the needs of their local communities by offering relevant workforce programs and services.*

Title 1, Section 118, of the federal Workforce Investment Act (WIA) required that each local board develop and submit to the Governor a comprehensive five-year local plan. TGC,

Section 2308.304(b), also requires each board to develop a local plan that must have goals and objectives that are consistent with statewide goals, objectives, and performance standards.

State law, and federal law under the WIA, required the Council to review local plans and modifications and make recommendations to the Governor for approval. Planning guidelines issued by the TWC typically included an appendix that specified the Council's request for information and data that would demonstrate alignment with the system strategic plan. While boards developed new local plans approximately every five years, plan modifications were generally required annually to update information and implement new state and local initiatives.

Given Congress' intent to reauthorize the WIA and the DOL Employment and Training Administration's revisions to state planning guidance, the DOL extended all WIA Title I state plans in 2011 and in 2012. In early 2012, the DOL issued guidance requiring states to submit a new five-year state plan for WIA Title I and the Wagner-Peyser Act.

In September 2012, the Council endorsed, and the Governor approved, the new state plan. The TWC then extended the local plans through March 2013 to allow time for boards to develop new five-year plans. In December 2012, the TWC further extended the local plans through June 2013, enabling boards to use the most recent labor market data in determining target occupations and industries and to provide adequate time for public comment.

The TWC issued Program Years 2013–2018 planning requirements for local boards, including instructions for documenting alignment with *Advancing Texas*, in December 2012. Boards documented strategies designed to meet the needs of three populations and to facilitate their entry into the workforce: (1) veterans, (2) the blind or disabled, and (3) those with low literacy or English language skills. They also described an innovative strategy that included collaboration with two or more system partners.

The TWC and Council staff conducted a joint plan review process, and the 28 board plans were approved by the TWC commissioners at the May 21, 2013, docket. The Council endorsed all 28 plans at its June

2013 meeting, and the Governor approved them later that month. The *Evaluation 2013* report included detailed examples of local board strategies and ongoing activities that aligned with *Advancing Texas*.

Last year, local boards were not required to submit new local plans or modifications. Implementation of *Advancing Texas* continued and work began to prepare for development of the next system strategic plan. In anticipation of the strategic planning process, formally launched in September 2014, the Council focused on better understanding issues related to system partners' workforce programs and services. Actions were taken to obtain local board input, with information provided in the *Evaluation 2014* report.

Due to the enactment of the Workforce Innovation and Opportunity Act of 2014 (WIOA, Public Law 113-128), new board plans or modifications were not required this year. Most provisions of the new law took effect July 1, 2015. The WIOA requires a single state plan that describes the state's overall strategy for workforce development and how the strategy will meet identified skill needs for workers, job seekers, and employers. Local plans must be aligned to the strategy described in the state plan and describe how services provided at the local level will be aligned to regional labor market needs. Additional information is provided in the **Local Board Alignment** section.

*LTO – Partner agencies will gather data from employer customers at appropriate intervals to determine employer needs and satisfaction.*

*LTO – Partner agencies will use the employment data/outcomes of their programs to understand and improve those programs.*

The Council and system partners recognize employers as a primary customer of the state's workforce system. Data gaps regarding their needs and satisfaction hinder the ability to assess whether existing programs and services adequately meet customer requirements. To be effective, programs and services must address and adapt to changing employer needs. During the previous strategic plan period, several partner agencies increased their efforts to become more familiar with employers' awareness and

*... assessing employer needs and satisfaction ... and using employment data and outcomes to assist with program improvement efforts.*

perception of existing services and to gather information about projected hiring and training needs.

These two LTOs incorporated five and three agency projects, respectively, that were continued from the previous system strategic plan. Two projects associated with determining

employer satisfaction—one implemented by the THECB and one by the Texas Youth Commission (TYC)—were completed and closed in conjunction with approval of the *2012 Update to Advancing Texas*.

### THECB

After developing an online survey system, the THECB worked with the TWC to notify employers of the survey. The agency also informed the Texas Association of Community Colleges and local workforce boards in an effort to increase awareness and participation. Survey responses were not sufficient to permit statistical analysis of the programs or employers' satisfaction.

The THECB considered new options to meet the plan's intent, and in 2011 partnered with the Council to survey the CTCs. A two-phase survey process was used to collect information on the CTCs' strategies for determining employer satisfaction and using that information in institutional planning processes to improve program delivery. Blinn College and Lone Star College System were selected as models of promising practices and were formally recognized by the Council in December 2011.

Texas Juvenile Justice Department [formerly TYC]

In prior years, the TYC administered an annual survey during the state assessment process for Prison Industry Enhancement programs, a process instituted under the previous system strategic plan. No data have been collected since 2010 as there were no programs in operation.

An additional survey was developed and piloted for employers that work with youth on parole, with plans to implement it on a larger scale, and to shift from a paper-based to an electronic format. Due to an agency-wide reduction in force, implementation of this survey was deferred. With all major tasks completed, the project was closed in 2012.

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Agencies use employer data and information collected through web-based, telephone, and in-person surveys to (1) measure satisfaction; (2) identify training and service needs; (3) identify modifications to current programs and services to better suit workforce requirements; and (4) serve as a resource for agency strategic plan development and in preparation for future legislative sessions. Tasks associated with the two LTOs complement and support each other.

Performance data for the three active projects are published in the **Less Formal Measures** section. Project updates for all active projects are presented below:

DARS

DARS' divisions continued to work on two employer-related projects. An online survey was developed to collect employer feedback upon service completion and/or after successful job placements. Survey data are used to assess employer satisfaction with DARS services and to identify opportunities for program and service improvements.

Last year, the DRS and the DBS launched a joint effort to develop a consolidated business relations function designed to improve services to businesses throughout the state and enable greater collaboration with local boards and workforce centers. A cross-divisional workgroup was charged with developing an implementation plan and coordinating implementation activities through FY 2015. The plan was also to incorporate the Sunset Advisory Commission's August 2014 recommendations related to a consolidated business relations approach and closer coordination with local workforce boards and centers. Business relations specialists were assigned to a region rather than operating as a separate unit at the central office. This structure enabled the specialists to provide ongoing and in-depth training and support to the field staff by focusing on the regional needs of the staff and businesses.

Following DARS' sunset review, the Sunset Advisory Commission's decision report (January 2015) indicated that DARS would retain responsibility for immediate actions and that the TWC would ensure that the recommendation carry forward following the program's transfer. The change was effective in September 2015, and is expected to allow DARS to better coordinate internal and external efforts in order to build stronger business relations and improve consumers' employment outcomes. While working with the TWC on transition plans, DARS continues to work in partnership with businesses, local workforce boards and centers, secondary and postsecondary education institutions, and other community organizations.

Other initiatives reported during the six-year plan period included:

"SWAT Immersions"—Since 2011, DARS' business relations unit has conducted "SWAT immersions" to train local field units. The sessions assisted units with business relations strategy development and implementation, and using key data on businesses, labor demands, job-ready consumers, and market trends. In FY 2015, SWAT training was replaced by regionally focused training and support. The unified approach to business relations was expected to result in training efforts similar to SWAT training, but revised to align with the agency's new approach. Business relations and employment assistance staff also continued their outreach through statewide initiatives with large and mid-sized companies, and through ongoing activities with employers, local boards and centers, and other community partners in each region.

Strategic Planning Grant—In 2012, DARS received a grant from the University of Massachusetts to work on strategic planning related to vocational rehabilitation processes and services. Following work sessions conducted through the grant, DRS staff reviewed existing policies and procedures to assess opportunities for clarification, change, or development of additional policies or procedures necessary to support effective program operations. Substantial policy revisions began in FY 2014, as did efforts to increase alignment between strategic and operational planning and to establish business processes to support achievement of the agency's strategic objectives.

Data System Development—DARS previously reported implementing a customized cloud-based site as a data system for business relations and a mechanism to create a link between job-ready consumers and employers. Last year, system expansion was suspended pending implementation of the joint business relations strategy and establishment of a consolidated business relations team. DARS planned to reassess system needs and explore options that would enable staff to more efficiently track and report business outreach activities and outcomes as envisioned for the new team, and as required to implement the agency's Sunset recommendations and the WIOA.

Employer Satisfaction Surveys—DARS continued to use SurveyMonkey to conduct the employer satisfaction survey, which became available through the online employer portal in June 2013. Selective use of SurveyMonkey continued as DARS worked to align business systems and operations with the Sunset recommendations. Surveys are sent to businesses upon completion of services provided (e.g., services and support in hiring a consumer referred by DARS, job retention services, training) and/or after successful consumer placements. The DRS and the DBS both use the data to assess employer satisfaction and to identify opportunities for program and service improvements, and also to identify opportunities for staff coaching and training, staff recognition, program improvements, and replication of successful practices.

#### TVC

In 2009, the TVC launched a statewide initiative focused on placing veterans into employment by hiring a dedicated business outreach coordinator. The successful effort was expanded, with four business representatives strategically located across the state. The coordinators worked to establish partnerships with regional employers and to market TVC's employment services. Due to guidance from the DOLVETS, they were integrated with the local veterans employment representatives, and all veterans employer liaisons are being incorporated as team members in local boards' business service units.

In recent years, the TVC completed two employer satisfaction surveys annually, continuing the process as part of the agency's efforts to increase employer outreach and partnerships. Previously, Veterans Employment Services field staff was also surveyed. Based on data analysis, a Disabled Veterans Outreach Program focus group was convened and several changes were implemented to improve effectiveness and efficiency.

In addition, staff reviews data from monthly performance reports provided by the TWC and conducts annual trend analyses in order to evaluate service delivery models and make adjustments where appropriate. Trend analyses have been used to forecast staffing needs and for the Jobs for Veterans State Grant application that is submitted to the DOLVETS for approval. Data are also used in preparing for career fairs and hiring events.

Data review and analysis also facilitate communication of best practices to state, regional, and local staff, and to other stakeholders such as the DOLVETS. At the annual TVC conference, best practices are communicated through training and panel discussions and employer satisfaction data and comments are incorporated in staff training.

Annual employer awards are presented at the agency's fall conference. In addition, employers are featured on the agency's website and in their publications.

Texas Department of Criminal Justice (TDCJ)–Windham School District (Windham)

In 2011, Windham administered an electronic employer survey but encountered low response rates, incomplete responses, and data issues. For example, contact information derived from unemployment insurance wage records was used, but many of the contacts were unfamiliar with the program or unaware that employees were ex-offenders.

Since 2012, Windham has conducted the survey using several methods, including distribution (1) through the TDCJ's Parole Division in Dallas, Houston, and San Antonio metro areas; (2) at job fairs, workforce centers, and to various stakeholders; and (3) directly to employers. Windham has added a website link to the survey, and continues to review data to determine employer satisfaction and to plan program and management initiatives.

Windham also gathers information on targeted and high-demand occupations, emerging trends, and nontraditional careers identified by the 28 local boards and industry stakeholders. Windham staff meets annually with local board and industry representatives to tour job sites to keep abreast of new industry trends and to discuss career opportunities for ex-offenders.

Employer survey data are also used to assess satisfaction with the job knowledge and skills of program participants. Survey data and data collected from local board and industry representatives are used to evaluate training programs for alignment with current employer demand and suitability for ex-offenders. Based on the review, program modifications may be made. Last year, for example, Windham reported plans to begin offering welding, machining fundamentals, and CNC machining for female offenders to address the current demand in the manufacturing industry.

## ADULT EDUCATION AND LITERACY

### Mandate and Background

Under Texas Government Code (TGC), Section 2308.1016, the Texas Workforce Investment Council (Council) is responsible for facilitating the efficient delivery of integrated adult education and literacy services in Texas. The Council is also charged with evaluating the adult education and literacy programs formerly administered by the Texas Education Agency (TEA) and by the Texas Workforce Commission (TWC). The Council's role is to identify duplicative planning efforts, lack of adequate client information sharing, or other challenges that adversely affect program delivery.

TGC, Section 2308.104, specifies that the Council will develop a single strategic plan for the workforce system that includes goals, objectives, and performance measures. It also states that the agencies administering a workforce program will use the system strategic plan in developing their operational plans.

Over the *Advancing Texas*' plan period, changes were implemented that significantly affected the delivery of adult education and literacy services in Texas. These included the transfer of adult education from the TEA to the TWC and the implementation of the Texas Success Initiative Assessment (TSIA).

### Program Transfer

Senate Bill (SB) 307 (83<sup>rd</sup> Legislature) mandated transfer of the adult education and literacy program from the TEA to the TWC, and the program was transferred on September 1, 2013. As a result, the Texas Higher Education Coordinating Board (THECB) and the TWC were accountable for the adult education English language learner and workforce skills training objective in *Advancing Texas*, and the TWC retained accountability for the workplace literacy for adults with low literacy objective. The outcomes for both plan objectives, addressed in the **System Accomplishments** section, focused on the identification and implementation of strategies that ensure an increasing number of students are prepared to attain some postsecondary credential. The Council supported partner agency implementation of both objectives.

Adult education and literacy programs funded by the TWC provide English language, math, reading, and writing instruction to help students acquire the skills needed to succeed in the workforce, earn a high school equivalency, or enter college or career training. Rules adopted by the commission on February 4, 2014, positioned the agency to prioritize services around education demands and workforce development needs in order to implement the objectives outlined in SB 307, as well as federal guidance, direction provided by the commission, and stakeholder input.

As stated in the rule<sup>30</sup> preamble and the TWC's initial request for proposals, the commission's goal is to incrementally increase the proportion of students who exit workforce services ready for work, or who are enrolled or co-enrolled in college and career training. This model provides opportunities for literacy and basic educational development and ensures these services link students at all academic and English levels with employment, training, and college opportunities.

#### Redirecting Adult Education and Literacy

**Goal:** To support increases in employment, higher education transition, skill gains, and secondary completion through demonstrated approaches that integrate system services and leverage community partnerships.

- Adopted by the Texas Workforce Commission on November 25, 2014

During the rule comment period, concerns were raised that the approach might have unintended consequences (e.g., serving higher-functioning students to the detriment of lower-functioning students).

<sup>30</sup> Texas Administrative Code, Title 40, Part 20, Chapter 805—Adult Education and Literacy.



However, as the TWC indicated, there are strategies in place and in development, often using interagency collaborations, which should allow the program to develop increased employment and workforce training outcomes over time, while serving more students regardless of functional level. One example cited was the THECB's Accelerate Texas initiative that provides students with lower skills or limited English with access to career and technical training.

In 2014, the TWC awarded over \$60 million in state and federal funds to a network of 35 education, workforce, and nonprofit entities to deliver enhanced adult education services statewide. The request for proposals incorporated key elements of the pilot model developed in response to the *Advancing Texas'* workplace literacy objective by requiring service providers to implement career pathways programs.

All program year 2014–15 grant recipients are required to provide: (1) college and career bridge activities; (2) individualized training, education, and career plans for students itemizing short- and long-term goals; and (3) career pathway programs that include education and training and work-based project models. To support increases in career and postsecondary education and training outcomes for the program, the TWC is implementing multiple strategies including enhanced enrollment and performance criteria, incentives for innovative acceleration, and integration and transition models, such as the Accelerate Texas integrated education and training model being implemented in coordination with the THECB.

### **Texas Success Initiative**

Texas public community and technical colleges (CTC) were created to expand access to higher education. Open admissions policies that facilitate broad access and emphasize enrollment resulted in institutions enrolling many students who may not be adequately prepared for college-level coursework. Underprepared students face significant barriers to completing college, and many do not complete. Since 1987, the legislature has guided a series of reforms that determine readiness for college-level coursework, including aligning public education and higher education through clearly defined college and career readiness standards, improving developmental education, and establishing a single threshold for measuring college readiness.

Developmental education courses are designed to help underprepared students transition into college-level coursework. However, data demonstrate that developmental education program delivery has not always been effective. Students placed in the lowest levels of developmental education are the least likely to progress into advanced coursework or complete the desired level of attainment, while those that test at higher levels may be required to repeat content that has been mastered. When a student's primary goal is employment, such delays become significant barriers to postsecondary completion.

#### ***Establishing a Standard College Readiness Measure***

A key component of the alignment effort between secondary and postsecondary education was the establishment of a college readiness measure based on the Texas College and Career Readiness Standards (CCRS). However, institutions used one or more of four different assessments to determine whether students met this standard, and each institution could set a passing standard above the THECB's minimum standard. These discrepancies resulted in vast inconsistencies between institutions in student advising and placement.

In 2011, House Bill (HB) 1244 (82<sup>nd</sup> Legislature) mandated adjustments be made to the Texas Success Initiative (TSI) to improve the academic preparedness of students enrolling in higher education. The legislation authorized the THECB to prescribe a single standard for assessment of college readiness and set a single threshold for enrollment across all Texas public institutions of higher education, effective with the 2013–14 academic year. To address the requirements, the THECB collaborated with the Council, the TEA, and the TWC in monthly discussions to consider the populations served, challenges, best practices, and opportunities to improve student outcomes and to benefit the workforce system. The workgroup also worked to align efforts with the transfer of adult education from the TEA to the TWC in order to ensure efficiency and eliminate duplication of services.

In 2012, the THECB began the process of determining and setting a single standard for assessment, as well as a single threshold for readiness and enrollment that would meet faculty expectations across institutions of higher education and that could be integrated into Texas public high schools. Contributing review teams included faculty leaders, assessment experts, and other stakeholders. The process included a review of standards and gap analyses, meetings with faculty members, and development and field-testing. The proposed standard and assessments were approved in the spring of 2013.

### ***Differentiating Student Needs—Texas Success Initiative Assessment***

Under the original TSI created in 2003, students were required to comply with the TSI (Texas Education Code, Section 51.3062(f)) in order to enroll in Texas public institutions of higher education. Presently, the majority of students are exempt from the TSIA, based on an ACT/SAT college readiness score, military service, enrollment as non-degree and non-certificate seekers, and other exemptions. The TSI is intended to support completion among students who face more significant challenges to postsecondary attainment.

Prior to 2013–14 and the implementation of the new TSI assessment, the four original testing instruments were designed to classify students as college ready or not college ready. Typically, students who did not meet the minimum passing standard of the exam, in any one or all three of the content areas, were placed into the same developmental education program. The HB 1244 requirement for a single assessment offered an opportunity to include a diagnostic component that would support identifying and remediating gaps between secondary and postsecondary learning. In the summer of 2012, the THECB met with review teams and conducted content and field-testing for a new TSIA. The assessment was aligned with the CCRS and the national adult education standards and designed to differentiate student needs, allowing for more individualized methods of remediation tailored to gaps in a student's learning.

#### **Texas Success Initiative Assessment (TSIA)**

*The TSIA classifies student performance in three different skill levels: college ready, developmental education, and adult basic education. In addition, the assessment includes a diagnostic component that helps clarify the student's specific strengths and weaknesses, enabling institutions to accelerate students through appropriate remediation options designed to effectively help them meet their academic and workforce goals.*

Beginning with implementation in the fall of 2013, the new TSIA was also aligned with developmental education reform efforts. The assessment produces a diagnostic profile designed to help determine if an individual is academically ready for college-level course work or if the individual requires developmental education or additional remediation. The assessment is aligned to the National Reporting System (NRS) standards for adult education and literacy and provides a diagnostic for students assessed with skills below secondary school level in one, two, or all three skill areas. The TSIA Adult Basic Education (ABE) Diagnostic distinguishes between:<sup>31</sup>

- ▶ students whose skill levels are within secondary school ranges, i.e., developmental education students assessed at NRS levels 5 and 6; and
- ▶ students whose skill levels fall below high school, i.e., students scoring at NRS levels 1 through 4.

### ***Developing a Referral System***

In Texas, the CTCs continue to provide open access to any student and to develop programs and processes that help more students attain some postsecondary credential. In some cases, students require specialized services or access to programs and services. These are provided through partnerships with the postsecondary institution's credit or non-credit workforce training and/or continuing

<sup>31</sup> Developmental education includes courses/interventions that address students who are assessed by the Developmental Education Diagnostic or who are assessed at levels 5 through 6 on the TSIA ABE Diagnostic. Basic Academic Skills Education refers to the newly developed non-course competency-based options that address students with a high school diploma who assess within levels 3 through 4 on the TSIA ABE Diagnostic.

education department and adult education services, social service agencies, local workforce offices, credit recovery programs, and employer-based training programs.

Throughout development of the TSIA, stakeholders considered the needs of students assessed at skill levels that fall significantly below the knowledge and skills required for success in college-level courses. These students require more extensive assistance, as well as a different type of assistance, than students who are better prepared for college success.

Over the *Advancing Texas*' plan period, Council staff participated with the THECB and the TWC in a series of collaborative meetings to support development and implementation of the TSIA. The *TSI Operational Plan for Serving Lower Skilled Learners* (April 2014) focused solely on the role of community colleges, as the institutions that have the highest percentage and number of students testing at or below developmental education levels. It included 10 recommendations for more effectively serving students assessed at NRS levels 1 through 4 on the TSIA ABE Diagnostic.

One recommendation called for advising and referring students assessed in NRS levels 1 and 2 in all three content areas—reading, writing, and math. Options include continuing education on campus or, by referral, to an appropriate agency/organization (e.g., the TWC, the Department of Assistive and Rehabilitative Services, community-based organizations). The plan noted that, outside of the English language learner population, the disabled and learning disabled are two of the largest groups testing at these levels, and would be better served through evaluation or vocational rehabilitation offered outside the college or through continuing education.

Another recommendation addressed the development of a statewide referral system. In collaboration with partner agencies, the THECB would review and build on existing resources and determine the need to establish, with its workforce system partners, a statewide online resource and referral system for use by institutions of higher education, adult education providers, and other appropriate organizations to optimize the services provided to those assessed in NRS levels 1 and 2.

### ***Implications and Related Issues***

The state's adult education and literacy system has long been considered to be underfunded, and often operates at capacity. The new TSI requirements, accompanied by a more directed focus on individuals assessed at higher levels, may result in a service gap for individuals at lower literacy levels or who desire to access adult education for personal or family literacy purposes.

Due to the large number of eligible Texans seeking enrollment in adult education programs, wait lists are common with providers.<sup>32</sup> If the TSIA results in additional individuals being directed to these providers, the state's adult education system will need to find additional capacity through additional funding, lower costs, and/or delivery efficiencies, to meet the needs of a larger population in need of services.

Several related, or compounding, issues were noted in the operational plan, including:

- ▶ Students who have not completed a high school credential are ineligible for federal financial aid (e.g., Pell grant, loans, work-study). However, they are included in the population prioritized by federally funded adult education programs.
- ▶ Public community colleges have legislative mandates requiring the provision of adult literacy and other basic skills programs for adults.<sup>33</sup> While there are currently programs available at some community college campuses designed to address this need, such programs are not found on all campuses.

<sup>32</sup> Texas Workforce Investment Council, *Results of the 2012 Research and Survey of Adult Education Providers in Texas* (June 2012).

<sup>33</sup> Texas Education Code, Section 130.003(e)(8).

- ▶ Additional funding for support services (e.g., day care, tuition assistance) would also be beneficial. Many students cannot afford the amount of time and money necessary to achieve a high school diploma or GED, much less a postsecondary credential.

HB 1054 (84<sup>th</sup> Legislature) requires that institutions of higher education include non-course competency-based developmental education programs and interventions designed for students whose performance falls significantly below college readiness standards. Through summer 2018, the THECB will analyze data and institutional utilization of such options that are serving students assessed below TSIA level 5. The THECB is currently working with the College Board on two research studies, the *SAT Validity Study* and the *TSI Assessment Validity Study*. The latter will be based on data from fall 2013–14 through fall 2014–15, and is expected to be completed in the fall of 2016.

The THECB has funded the TSI Professional Development Program at Texas State University, for the purpose of delivering statewide, multi-faceted professional development support targeting advising and placement, non-traditional instructional models and career pathways models. The THECB and Texas are surveying institutions in order to inform regional professional development activities offered in academic year 2015–16. In addition, an online resource portal of promising practices for underprepared students will be maintained.

### Future Considerations

The availability of a well-educated and skilled workforce is essential for competing in the global economy. Adult education, combined with skills training required by employers, is a strategy for meeting this need.

The Council will continue to monitor system partners' efforts to increase access to, referral between, and outcomes of adult education in Texas. Key initiatives and mandates to be tracked include:

*Workforce Innovation and Opportunity Act (WIOA) Implementation*—The WIOA expands the purpose of adult education, emphasizing activities that should increase an individual's ability to transition to postsecondary education and obtain employment. It also promotes the integration of adult education with occupational education and training, including the development of career pathways systems, and encourages collaboration with employers.

In March, the TWC submitted a transition year state plan for programs authorized under the Adult Education and Family Literacy Act (WIOA, Title II) to the U.S. Department of Education. The state's *WIOA Combined State Plan* is being developed by the TWC and will be considered by the Council in February 2016. Following approval by the Council and the Governor, the state plan must be submitted to the U.S. Department of Labor by March 3, 2016.

*Accelerate Texas*—Accelerate Texas is an integrated career pathway model that supports the transition and success of lower skilled students into entry-level workforce training programs leading to credentials of value in regional labor markets. As noted in the **System Accomplishments** section, elements of the pilot model developed for English language learners have been incorporated in the initiative's design.

HB 1 (84<sup>th</sup> Legislature) included a THECB appropriation of over \$4 million to support community college grants over the 2016–17 biennium. As directed by Rider 36, competitive grants will be used to scale and sustain Accelerate Texas program models for increasing the participation and success of adult education and literacy students transitioning into postsecondary education and/or training programs and for students assessed under the TSIA as demonstrating basic academic skills.

#### Focusing on Career Pathways

*The WIOA promotes the development of career pathways systems and encourages collaboration with employers.*

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*Accelerate Texas programs help adult students acquire skills and certificates in high-demand occupations by integrating basic skills with career and technical pathways.*

The TWC, in coordination with the THECB, is also implementing the Accelerate Texas model as one strategy to increase career and postsecondary education and training outcomes for the adult education and literacy program.

*Statewide Strategic Plan for Adult Basic Education*—TWC Rider 32, HB 1 (84<sup>th</sup> Legislature), requires the TWC, in consultation with the Council, to develop a comprehensive statewide strategic plan to address the projected future demand for adult education, gaps in the adult education system, improved efficiency of coordinated activities between state agencies, increased education and work-related outcomes for adult education students, and the types of programs and instruction necessary to help prepare adults for 21st century work and life. The TWC is to report on implementation and annual progress to the Council, the Governor, and the Legislative Budget Board (LBB) in December of every even-numbered year.

The strategic plan is being developed with input from program stakeholders, including the Adult Education and Literacy Advisory Committee. In November 2014, the commission approved a goal and four strategies for the program. Work on the draft plan continued in fall 2015.

*Adult Education and Postsecondary Education Alignment*—THECB Rider 27, HB 1 (84<sup>th</sup> Legislature), requires the THECB to coordinate with the TEA and the TWC to prepare a report on the alignment of adult education and literacy and postsecondary education. The rider specifies data and information to be included. It is also to present recommendations for the continued coordination and alignment of adult education and literacy assessments and the TSIA Assessment for appropriate student placement in adult education and literacy basic academic skills or developmental education courses and interventions. The report is to be submitted to applicable legislative committees, the Governor, the TWC, and the LBB by May 1, 2016.

*Texas Success Initiative*—Approved by the THECB in April 2014, the *TSIA Operational Plan for Serving Lower-Skilled Learners* proposed phased implementation, beginning in fall 2014, and close monitoring of outcomes to make informed adjustments. A formal validity study is expected to be complete in the fall of 2016. As noted in the plan, if data show that targeted interventions are not being utilized significantly by institutions of higher education or that they are of limited effectiveness at such a scale—suggesting that higher education institutions do not have the capacity (e.g., financial and labor resources, operational structures) to serve the lowest academically skilled population—the THECB will utilize stakeholder input to appropriately review and revise the plan's recommendations.

*Research Partnership*—In July, the THECB approved a partnership with the RAND Corporation on a four-year, \$2.5 million research grant administered by the U.S. Department of Education's Institute of Education Services. A working group—including representatives from Houston Community College, El Paso Community College, and South Texas College—will develop, implement, and refine innovative approaches to better serve students testing at the ABE level on the TSIA.

*Referral System*—During development of the new workforce system strategic plan, *The Texas Workforce System Strategic Plan FY 2016–FY 2023*, adult education was one of several identified key issues with cross-partner implications. The THECB and the TWC share a system partner strategy to increase access to, referral between, and outcomes of adult education programs and services. During fiscal years 2016–2019, the agencies will collaborate to develop and implement a student referral system between federally funded adult education and literacy providers and CTCs. The referral system will be designed to assist individuals seeking adult education services find a program responsive to their needs. If deemed appropriate, consideration will be given to integrating community-based providers into the referral system. A related performance measure will be developed prior to implementation of the new system.

#### **Building a Referral System**

*The TWC and the THECB will partner to develop and implement a student referral system between federally funded adult education and literacy providers and community and technical colleges.*

*- The Texas Workforce System Strategic Plan FY 2016–FY 2023*

*Standards and Benchmarks Revisions and Alignment*—Proposed regulations for the new WIOA require the TWC to align its adult education content standards with its state-adopted content standards by July 1, 2016. In July, the TWC issued a request for proposals for an initiative to update the Texas Adult Education Content Standards and Benchmarks; however, the request was canceled in August. The scope of work included revising and aligning the standards and benchmarks with the TSIA, the CCRS, the Texas Certificate of High School Equivalency, and the NRS guideline descriptors. The TWC plans to identify an entity to complete this work.

## Local Workforce Board Alignment with *Advancing Texas*

### Local Board Plan Alignment under *Advancing Texas*

The Texas Workforce Investment Council (Council) is charged in both state and federal law with recommending to the Governor approval of local workforce development board plans and plan modifications as required under Title I of the Workforce Investment Act (WIA) of 1998, the Wagner-Peyser Act, and other applicable statutes. WIA, Section 118(a), required that each board develop and submit to the Governor a comprehensive local plan consistent with the WIA state plan. WIA, Section 111, stated that the Council, as the designated State Workforce Investment Board, shall assist the Governor in the review of board plans.

Texas Government Code (TGC), Section 2308.101(a)(5), requires the Council to review local plans for workforce development and make recommendations to the Governor for approval. In addition, TGC, Section 2308.304(b)(4), specifies that local plans must include a strategic component that sets broad goals and objectives for local workforce programs, and that outcomes must be consistent with statewide goals, objectives, and performance standards. *Advancing Texas* established statewide goals and objectives through fiscal year (FY) 2015. The plan contained 14 long term objectives with associated action plans to guide implementation. Local board plans were required to include goals and objectives that aligned with *Advancing Texas*.

Given the continued intent to reauthorize the WIA and the Department of Labor's Employment and Training Administration's (DOLETA) revisions to state planning guidance, the DOLETA extended all WIA Title I state plans in 2011 and in 2012. In early 2012, the DOLETA issued the final planning guidance to states, which required the Texas Workforce Commission (TWC) to develop a new WIA Title I state plan for submission to the DOLETA by September 17, 2012.

In September 2012, the Council endorsed and the Governor approved the new state plan. The TWC then extended the local plans through March 2013 to allow time for boards to develop new five-year plans. In December 2012, the TWC further extended the local plans through June 2013, to enable boards to use the most recent labor market data in determining target occupations and industries, and to provide adequate time for public comment.

The new local board plans cover the five-year period of FY 2013–2018. In September 2012, the TWC initiated the planning process with the release of *Texas Workforce Development Board Planning Guidelines for Fiscal Years 2013–2018* [WD Letter 25-12, September 7, 2012; Change 1, December 19, 2012]. The guidelines provided instruction on required content, including documentation of alignment with local goals and objectives and the relevant statewide goals and objectives in *Advancing Texas*. They also outlined the Council's request for information and data to demonstrate alignment.

The TWC and Council staff conducted a joint review process for the board plans. The TWC reviewed plans for compliance with planning guidelines and requirements. Council staff reviewed each plan for alignment with the state strategic plan, *Advancing Texas*. Following review and evaluation, all 28 local plans were determined to meet the Council's requirements for demonstrating alignment with *Advancing Texas*. The 28 plans were approved by the TWC commissioners at the May 21, 2013, docket. The Council endorsed all 28 plans at its quarterly meeting on June 7, 2013, and the Governor approved them later that month.

The *Evaluation 2013* report included detailed examples of local board strategies and ongoing activities that aligned with *Advancing Texas*. It provided information on strategies and related performance measures/targets that, if applicable, are designed to meet the needs and facilitate workforce entry of three groups: veterans, Texans with low literacy or poor English language proficiency, and blind or disabled Texans. In addition, the report highlighted innovative strategies that include collaboration with

two or more system partners—including a description of the rationale for the strategy, intended outcomes, and how the strategy's process and outcomes would be evaluated to determine success over time.

### System Strategic Planning Input

Last year, local boards were not required to submit new local plans or modifications. When local plans or modifications are not required in a given year, the TWC has previously worked with Council staff to obtain local board information documenting alignment with the system strategic plan.

While implementation of *Advancing Texas* continued, work was underway to prepare for development of the next workforce system strategic plan. To prepare for the strategic planning process, which formally launched in September 2014, the Council focused on better understanding issues related to system partner workforce programs and services. Actions taken to obtain input from local boards included:

- ▶ *Regional Strategic Meetings* – The TWC held a series of regional strategic meetings with participation by the commissioners and agency staff. The Council Chair and director attended three meetings to gather information for consideration in the strategic planning process. Each board led two panel discussions focusing on:
  - key industry priorities and what the board is doing to address their needs, including their work with chambers of commerce, economic development organizations, or other industry officials; and
  - any other key area the board was working on locally (e.g., youth services, linkages with independent school districts/career technical education, child care, adult education).

#### Workforce System Strategic Plan

*As key workforce system partners, local board representatives actively participated in the implementation of Advancing Texas and in development of the new system strategic plan, The Texas Workforce System Strategic Plan FY 2016–FY 2023.*

In addition, each board presented local challenges and opportunities, including ideas for moving the system forward over the next five years. Following the presentations, the commissioners, TWC staff, and board representatives further discussed local opportunities, challenges, and ideas for moving the system forward over that time frame.

- ▶ *Council Listening Sessions* – Local board representatives participated in listening sessions conducted by the Council prior to the start of strategic planning in September 2014. The sessions were designed to identify key issues and opportunities that must be addressed in the next five to eight years.
- ▶ *Texas Association of Workforce Boards (TAWB)* – In August 2014, the Council director attended a TAWB meeting to provide an update on the Council's planning activities and obtain input on the group's related questions and strategic issues.
- ▶ *System Integration Technical Advisory Committee (SITAC)* – The TAWB was represented on SITAC by the North Central board's executive director. Strategic priorities identified by system partners were presented at the June and September 2014 committee meetings, with TAWB information provided in September. Through facilitated sessions, SITAC discussed potential strategies for addressing partners' priorities, possible constraints, and opportunities for collaboration. Members then reviewed the priorities from a system-level perspective. A rank-ordered list was provided to the Council's Executive Committee, which was designated by the Council Chair as the strategic planning committee.

### Workforce Innovation and Opportunity Act Implementation

Because of the significant workforce system reform initiated by the Texas Legislature in 1993 and 1995, the WIA contained provisions that allowed Texas to retain—or grandfather—major elements of its



workforce system that were consistent with the WIA, including its system of local workforce delivery. The Workforce Innovation and Opportunity Act of 2014 (WIOA, Public Law 113-128), which became effective July 1, 2015, repealed the WIA and maintained the provisions that allowed Texas to continue under prior consistent state law.

The WIOA requires states to submit a unified or combined state plan to the secretary of labor that outlines the state's overall strategy for workforce development and how the strategy will meet identified skill needs for workers, job seekers, and employers. The *WIOA Combined State Plan* is being developed by the TWC and will be considered by the Council in February 2016. Following approval by the Council and the Governor, the state plan must be submitted to the U.S. Department of Labor by March 3, 2016.

### **Local Area Designation**

WIOA, Section 106(b), outlines the requirements for local workforce area designation, including initial designation of any local area that was designated as such under the WIA. Texas rules developed under prior consistent state law meet the WIOA requirements for the designation and redesignation of workforce areas.<sup>34</sup>

In October, the TWC issued guidance to workforce boards regarding the process for requesting initial designation as a local workforce area under the WIOA. Area designations requested and recommended by the Commission will be included in the *WIOA Combined State Plan*, for approval by the Council and subsequently by the Governor.<sup>35</sup>

### **Local and Regional Planning**

New board plans or modifications were not required in 2015 due to enactment of the WIOA. Under the WIOA, local plans must be aligned to the strategy described in the state plan and also describe how services provided at the local level will be aligned to regional labor market needs.

States are required to establish regions to ensure that training and employment services support economic growth and meet regional labor market needs. Local boards and chief executive officers are charged with designing the system regionally, aligning workforce policies and services with regional economies that support the service delivery strategies and needs.

Regional partnerships help facilitate the alignment of workforce development activities with regional economic development activities and better support the execution and implementation of sector strategies and career pathways. Cooperation between regions also can lower costs and increase the effectiveness of service delivery to businesses and job seekers through the coordination of shared services, processes, and operations.

#### **Regional Collaboration**

*Texas has a history of supporting and encouraging regional planning and service delivery efforts ... benefits include collaborative planning, pooling and leveraging of resources, and capacity building.*

The 28 local boards and the TWC are working together to determine how WIOA requirements will be implemented in Texas. In the spring of 2015, a regional identification workgroup—with representatives from workforce areas and TWC staff—met several times. The group provided recommendations to TWC staff, providing the basis for a concept paper that articulated the rationale for determining regions in Texas.

The workgroup recommended that the commission recognize Texas' current workforce areas as their own independent regions. This will allow the areas to maintain their operations as currently structured and ensure that services are delivered efficiently and effectively. The concept paper noted that formally

<sup>34</sup> TGC, Section 2308.252, and Texas Administrative Code, Section 901.1.

<sup>35</sup> August 11, 2015 docket minutes.

designating new regions might have the adverse result of reducing potential collaborative efforts outside of the specified geographical boundaries. Regions will also be identified in the WIOA state plan.

Although regional planning is a new requirement under the WIOA, Texas' local boards have engaged in regional planning since their inception—demonstrating a history of promoting to and collaborating with stakeholders, leveraging resources, and ensuring that services are delivered efficiently and effectively to job seekers and employers beyond the designated workforce areas. Examples include:

- ▶ meeting the needs of industries through the collaboration of businesses;
- ▶ supporting the needs of the oil and gas industry;
- ▶ participating in a multi-state, grant-funded consortium that helps low-income, low-skill job seekers earn the skills and credentials needed to obtain in-demand occupations;
- ▶ establishing a multiregional coordinated strategy to recruit and train for the needs of businesses;
- ▶ meeting the needs of employers and job seekers through skills training and the creation and credentialing of a work-ready workforce; and
- ▶ responding to natural and other disasters by leveraging resources to help support those most in need.

### **Future Considerations**

As frontline partners in the workforce system, local boards must continue to enhance planning and collaborative efforts across workforce system components to meet employer and community needs. To meet the employers' needs, it is essential that service delivery strategies address regional demand in order to support economic growth. Local efforts and regional collaborations will continue and be based on labor market analysis and the needs of industry and economic development entities.

In the coming months the Council will work with the TWC and the boards to determine how local plans and modifications will demonstrate alignment under the statewide goals and objectives in the new system strategic plan, *The Texas Workforce System Strategic Plan FY 2016–FY 2023*.

## CONCLUDING COMMENTS

This report is the summative evaluation for the six-year strategic plan, *Advancing Texas*. Over the plan period, progress was made in many areas reflecting the efforts of system partners, the Council, and its System Integration Technical Advisory Committee (SITAC). Formed in late 2003 under the previous system strategic plan, SITAC was charged with implementation of *Destination 2010* and *Advancing Texas* and authorized to create and deploy cross-agency teams to attain integrated solutions to issues associated with implementation of each plan's long term objectives.

Working within their own organizations and with other system partners, SITAC members worked to strengthen system alignment and played a major role in the accomplishments realized over the last twelve years. Through increased collaboration, system partners leveraged opportunities in order to accomplish the majority of both plans' objectives and continued to build relationships and processes that would ensure additional progress in the future.

Each year, the Council and SITAC worked with system partners to address critical issues identified in the system strategic plan and to identify issues that may require action in the coming year. These included issues that directly related to the report's scope as outlined in the **Introduction**. Two such issues were identified last year: (1) adult education and literacy programs, and (2) system strategic plan implementation and reporting.

### Adult Education and Literacy Services

Last year, changes were implemented that significantly affected the delivery of adult education and literacy services in Texas. These included the transfer of adult education from the Texas Education Agency (TEA) to the Texas Workforce Commission (TWC) and the implementation of the Texas Success Initiative Assessment (TSIA).

#### *Program Transfer*

Senate Bill 307 (83<sup>rd</sup> Legislature) mandated transfer of adult education from the TEA to the TWC. The program was transferred on September 1, 2013. In 2014, program rules were finalized and over \$60 million in state and federal funds were awarded to a network of 35 education, workforce, and nonprofit entities to deliver enhanced adult education services statewide. Of note, the TWC's initial request for proposals incorporated key elements of the pilot model developed in response to one *Advancing Texas* action plan by requiring service providers to implement career pathways programs.

#### *Texas Success Initiative Assessment*

House Bill 1244 (82<sup>nd</sup> Legislature), mandated adjustments be made to the Texas Success Initiative (TSI) to improve the academic preparedness of students enrolling in higher education. The Texas Higher Education Coordinating Board (THECB) was authorized to prescribe a single standard for assessment of college readiness and set a single threshold for enrollment across Texas public institutions of higher education, effective with the 2013–14 academic year.

Council staff participated with the THECB and the TWC in a series of collaborative meetings to support development of the TSI implementation plan. The *TSI Operational Plan for Serving Lower Skilled Learners*, adopted by the THECB on April 24, 2014, focuses solely on the role of community colleges, as the institutions that have the highest percentage and number of students testing at or below developmental education levels. It includes 10 recommendations for more effectively serving students assessed at National Reporting System (NRS) levels 1 through 4 on the TSIA Adult Basic Education Diagnostic.

One recommendation addresses the development of a statewide referral system. In collaboration with partner agencies, the THECB would review and build on existing resources and determine the need to establish a statewide online resource and referral system for use by institutions of higher education, adult education providers, and other appropriate organizations to optimize the services provided to those assessed in NRS levels 1 and 2.

The state's adult education and literacy system has long been considered to be underfunded, and often operates at capacity. Due to the large number of eligible Texans seeking enrollment in adult education programs, wait lists are common with providers.<sup>36</sup> If the TSIA results in additional individuals being directed to these providers, the state's adult education system will need to find increased capacity through additional funding, lower costs, and/or delivery efficiencies, to meet the needs of a larger population in need of services.

During development of the new workforce system strategic plan, adult education was identified as a key issue with cross-partner implications. The THECB and the TWC share a system partner strategy to increase access to, referral between, and outcomes of adult education programs and services. During fiscal years (FY) 2016–19, the agencies will collaborate to develop and implement a student referral system between federally funded adult education and literacy providers and community and technical colleges.

The availability of a well-educated and skilled workforce is essential for competing in today's global economy. Adult education, combined with skills training required by employers, is a strategy for meeting this need. The Council will continue to monitor system partners' efforts to increase capacity and further improve adult education in Texas.

### **System Strategic Plan Implementation and Reporting**

As noted in the **Introduction**, state statutes require that the Council evaluate five elements in the workforce system, including (1) system strategic plan implementation and (2) Formal and Less Formal performance measures. Statute requires that the report include program-level data, which creates challenges related to the submission and presentation of aggregate versus unduplicated data. It is essential that comparable data sets be reported by agencies, per approved definitions and methodologies, for longitudinal tracking and analysis.<sup>37</sup>

Under both the previous system strategic plan—*Destination 2010*—and *Advancing Texas*, the Council worked with agencies and the Legislative Budget Board (LBB) to establish measures definitions that, where possible, align with existing federal common definitions, as well as LBB performance measures. In addition, established protocols (e.g., LBB '5% Variance') and standard rounding conventions are used.

The Council and partner agencies have worked to identify and implement process improvements for all work phases associated with preparation of the annual evaluation report. When agencies identify the need to revise prior-year data, the Council publishes the data in a report addendum and uses the revised figures in applicable calculations. Similarly, if a measure methodology is modified (e.g., legislation, data source availability), revised prior-year data are requested and treated in the same manner.

However, reporting is greatly facilitated for both parties when agencies notify the Council in a timely manner of potential changes required by federal or state legislation or by the issuance of new federal regulations or guidance. In addition, it is incumbent on partner agencies to communicate reporting requirements to appropriate staff and to ensure that data and information are submitted on a timely basis and meet agreed-to specifications.

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<sup>36</sup> Texas Workforce Investment Council, *Results of the 2012 Research and Survey of Adult Education Providers in Texas* (June 2012).

<sup>37</sup> Texas Government Code, Section 2308.104.

The report **Overview** includes 12-year performance trend data for the four Formal measures. As required by statute, the annual evaluation report presents data by program rather than by agency. Conversely, the longitudinal trend lines present a summary-level view of system performance based on data from up to 24 programs and services focused on education, workforce education, and workforce training for three participant groups: adults, adults with barriers, and youth.

Over the last 12 years, strides have been made with regard to plan implementation and reporting to the Council. However, such functions remain a more adjunct process for some partner agencies, while more fully integrated by others. Lack of full integration may be appropriate for pilot projects; however, reporting for projects being scaled or for mainstream programs should be incorporated in the agency's standard business practices.

Under the new system strategic plan, the Council will continue to work with system partners to build upon process improvements made to date in an effort to more fully systematize these processes. In the coming year, staff will work with partner agencies to review and update the definitions and methodologies for all Formal measures, as well as to develop definitions and methodologies for the new Less Formal measures. The system evaluation structure will be redesigned, yet will continue to address all elements required by statute.

Program and other data from across the workforce system are critical in evaluating the extent to which workforce system programs, services, and products are meeting the needs of customers and stakeholders. The collection of key data, as well as the reporting and analysis of that data—in a consistent and useful manner—are essential in demonstrating outcomes, determining if changes are required or desired, and establishing benchmarks for future performance. To achieve these data-related organizational competencies relative to the performance measures noted in this plan, partner agencies may need to build or modify their existing data systems. By doing so, the Texas workforce system can measure what matters most and build the collection and analysis capabilities that are missing.

★ ★ ★

On (DATE PENDING), Governor Greg Abbott approved the new workforce system strategic plan, *The Texas Workforce System Strategic Plan FY 2016–FY 2023*. A primary focus of the Council in FY 2016 will be the first year of implementation of the new plan and the development of a balanced scorecard approach to system evaluation.

## ADVANCING TEXAS ACTION PLANS

Action plans are the high-level plans that identify major tasks, milestones, timeframes, and performance measures necessary for attainment of the long term objectives specified in the workforce system strategic plan. *Advancing Texas* contained 14 such plans.

This attachment includes final versions of all 14 action plans.

Action Plan ID: S1		Action Plan Owner: SITAC	Action Plan – 2015 Review		Updated: 8/31/15	Rev: 2
Action Plan Status: FINAL		Long Term Objective				Plan Type: Partner
Key Performance Area: Systems, Operations, Competencies and Integration		Produce each biennium, commencing in 2010, a report that documents an assessment of the number and type of postsecondary education and training credentials (certificate, level two certificate, associate, bachelor's and advanced degrees) required to match the demand for a skilled and educated workforce. The assessment will include the number of forecast net job openings by occupation at each level of postsecondary education and training and the number of credentials needed to match that forecast.				
Accountable Participants: THECB, TWC, Council		Key Performance Measures				
Critical Business Issue: Need for enhanced and more effective integration of academic and career and technical education (CTE) options at secondary and postsecondary levels to assist students to graduate and transition to further education or the workforce, and to reduce dropouts.		<ul style="list-style-type: none"> <li>Report, with data as specified.</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Design overall project scope and plan, including user assessment via interagency task team. Considerations and determinations to include: <ul style="list-style-type: none"> <li>geographical area,</li> <li>method of CIP-SOC match, and</li> <li>Potential limit on number of occupations forecast (priority, growth, other significance).</li> </ul>	09/2009	01/2010	Ongoing data collection: <ul style="list-style-type: none"> <li>THECB (supply) – annual enrollment and graduation data.</li> <li>TWC (demand) – employment and job opening projections.</li> </ul>	Completed Strategic Workforce Assessment Program (SWAP) – by local workforce development area.
✓	2	Design and develop data collection tools and techniques, analysis requirements and reporting methods.	01/2010	03/2010		Completed <ul style="list-style-type: none"> <li>Validate occupations-to-programs crosswalk. [Completed]</li> <li>Develop process for updating and modifying crosswalk. [Completed]</li> </ul>
✓	3	Execute data gathering and analysis.	03/2010	06/2010		Completed
✓	4	Design and develop initial report deliverables.	07/2010	09/2010		Completed TWC modified plan of work: Develop <i>SWAP User's Guide</i> designed to introduce stakeholders to SWAP's analysis tools and allow individuals to perform specific supply-demand analyses. [Draft completed August 2011]
✓	5	Design and implement online, interactive user tools.	07/2010	ongoing		In Progress <ul style="list-style-type: none"> <li>TWC-develop interactive guide and case scenarios. [March 2012]</li> <li>TWC-partner with THECB to inform community colleges and other entities of online tool and potential uses. [Ongoing]</li> </ul>
✓	6	Distribute report to selected users and customers.  <i>NOTE: TWC determination made to build on user guide and develop online, interactive user tools rather than develop written report.</i>	09/2010	12/2010		Completed

<b>Action Plan ID: S1</b>		<b>Action Plan Owner: SITAC</b>	<b>Action Plan – 2015 Review</b>		<b>Updated: 8/31/15</b>	<b>Rev: 2</b>
<b>Action Plan Status: FINAL</b>		<b>Long Term Objective</b>				<b>Plan Type:</b> <b>Partner</b>
<b>Key Performance Area:</b> Systems, Operations, Competencies and Integration		Produce each biennium, commencing in 2010, a report that documents an assessment of the number and type of postsecondary education and training credentials (certificate, level two certificate, associate, bachelor's and advanced degrees) required to match the demand for a skilled and educated workforce. The assessment will include the number of forecast net job openings by occupation at each level of postsecondary education and training and the number of credentials needed to match that forecast.				
<b>Accountable Participants:</b> THECB, TWC, Council		<b>Key Performance Measures</b>				
<b>Critical Business Issue:</b> Need for enhanced and more effective integration of academic and career and technical education (CTE) options at secondary and postsecondary levels to assist students to graduate and transition to further education or the workforce, and to reduce dropouts.		<ul style="list-style-type: none"> <li>Report, with data as specified.</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	7	Continuous improvement in data, compilation, review and distribution.	11/2011	ongoing		In Progress TWC awarded three-year Workforce Data Quality Initiative grant to develop Texas supply and demand analysis portal and upgrade/expand other labor market and career information products. [Awarded June 2015]



<b>Action Plan ID: S2</b>		<b>Action Plan Owner:</b> TEA	<b>Action Plan – 2015 Review</b>		<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL		<b>Long Term Objective</b>				<b>Plan Type:</b>  <b>Partner</b>
<b>Key Performance Area:</b> Systems, Operations, Competencies and Integration		By 2013, Texas will decrease high school dropout rates by implementing rigorous Career and Technical Education (CTE) as a part of the recommended or advanced high school graduation program.				
<b>Accountable Participants:</b> TEA		<b>Key Performance Measures</b>				
<b>Critical Business Issue:</b> Need for enhanced and more effective integration of academic and career and technical education (CTE) options at secondary levels to assist students to graduate, and to reduce the number of CTE students that drop out before graduation.		<ul style="list-style-type: none"> <li>Percent of CTE concentrators (Code 2 and 3 CTE Participants) who graduate on the recommended or distinguished achievement high school program. Achieve a minimum CTE concentrator rate of 81% annually.</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Design, develop and adopt CTE courses to meet recommended or advanced high school program graduation requirements for the fourth year of math and science.	in progress	08/2010	SBOE adoption of CTE courses to satisfy a fourth math or science graduation requirement.	Completed TAC Chapter 74 Revisions.
✓	2	Embed college and career readiness standards (CCRS) into CTE TEKS.	04/2008	07/2009	HB 3485 and CTE Writing Teams.	Completed CTE Writing Teams embedded CCRS into new CTE TEKS.
✓	3	CTE TEKS to be adopted by the State Board of Education.	06/2007	07/2009	HB 3485 and SBOE adoption.	Completed <ul style="list-style-type: none"> <li>CTE TEKS implementation 2010-2011 school year. [Completed]</li> <li>CTE TEKS revisions approved in 2015; changes effective for 2017-2018 school year. [Completed]</li> </ul>
✓	4	Design, develop and implement professional development initiatives related to CTE TEKS.	in progress	09/2010	District support for CTE teacher professional development (PD).	Completed <ul style="list-style-type: none"> <li>TEKS implementation for 24,000 CTE teachers (face-to-face) offered 01/10 – 08/10. [Completed]</li> <li>TEKS PD available online 24/7 for ongoing training. [Ongoing]</li> <li>Final CTE professional development course deployed in 2013-2014 school year. [Completed]</li> <li>All nine courses monitored and updated as needed. [Ongoing]</li> </ul>
✓	5	Design, develop and coordinate with the THECB policies and processes regarding dual credit courses and credit transfer.  [Cont'd on next page]	in progress	12/2010	Work with the THECB regarding dual credit transfer.	Completed Implement and/or monitor new studies related to: <ul style="list-style-type: none"> <li>dual credit costs (HB 3646) [Completed];</li> <li>effectiveness of dual credit courses (HB 3) [Completed];</li> <li>Study of Early Assessment and Early Intervention Models (Jobs for the Future, November 2012), fulfilling requirements of HB 3468 (82<sup>nd</sup> Legislature) [Completed];</li> <li>feasibility of successful completion of end-of-course (EOC) exams by successful completion of a dual credit course (HB 3) [In Progress]; and</li> </ul>

<b>Action Plan ID:</b> S2	<b>Action Plan Owner:</b> TEA	<b>Action Plan – 2015 Review</b>	<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL	<b>Long Term Objective</b>			<b>Plan Type:</b>  <b>Partner</b>
<b>Key Performance Area:</b> Systems, Operations, Competencies and Integration	By 2013, Texas will decrease high school dropout rates by implementing rigorous Career and Technical Education (CTE) as a part of the recommended or advanced high school graduation program.			
<b>Accountable Participants:</b> TEA				
<b>Critical Business Issue:</b> Need for enhanced and more effective integration of academic and career and technical education (CTE) options at secondary levels to assist students to graduate, and to reduce the number of CTE students that drop out before graduation.	<b>Key Performance Measures</b>			
	<ul style="list-style-type: none"> <li>Percent of CTE concentrators (Code 2 and 3 CTE Participants) who graduate on the recommended or distinguished achievement high school program. Achieve a minimum CTE concentrator rate of 81% annually.</li> </ul>			

Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
	5  cont'd	<i>Cont'd from preceding page:</i> Design, develop and coordinate with the THECB policies and processes regarding dual credit courses and credit transfer.	in progress	12/2010	Work with the THECB regarding dual credit transfer.	<ul style="list-style-type: none"> <li>correlation between performance on EOC assessments and success in military service or postsecondary workforce training (HB 3). [In Progress]</li> </ul> <p><i>NOTE: Grade 9 students will begin to take EOC exams in the 2011-2012 school year. Each successive year, the successive grade will transition from TAKS to EOC exams. Graduating seniors will take EOC exams beginning with the 2014-2015 school year. Therefore, data regarding a correlation between EOC performance and success in military service or postsecondary workforce training will not be available until those (2014-2015) graduating seniors have joined the military and/or completed some level of postsecondary workforce training.</i></p>
✓	6	Develop and deploy additional early college high schools (ECHS).	in progress	ongoing	TEA State Initiatives.	In Progress <ul style="list-style-type: none"> <li>Recommendations and actions in the Texas High School Program strategic plan. [Completed]</li> <li>154 ECHS approved for 2015-2016 school year. [Ongoing]</li> </ul>
✓	7	Develop criteria for Campus Distinction Designations for 21 <sup>st</sup> Century Workforce Development program.	09/2009	08/2010	Commissioner of Education to establish a committee to develop criteria.	Completed <ul style="list-style-type: none"> <li>Annual campus distinction designation for improvement in student achievement or diminish performance differentials between student subpopulations (HB 3).               <ul style="list-style-type: none"> <li>Preliminary work: literature review, draft list of stakeholders, potential measurement criteria/indicators, and potential award methodologies. (August 2011) [Completed]</li> <li>Committee meetings. (Spring 2012) [Not Started]</li> <li>Initial distinction designations. (Concurrent with release of 2013 performance ratings) [Not Started]</li> <li>Discontinued under HB 5 (83<sup>rd</sup> Legislature). [Completed]</li> </ul> </li> </ul>

<b>Action Plan ID:</b> S3		<b>Action Plan Owner:</b> THECB, TEA		<b>Action Plan – 2015 Review</b>		<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL		<b>Long Term Objective</b>					
<b>Key Performance Area:</b> Systems, Operations, Competencies and Integration		By 2013, education and training partners will have the infrastructure necessary (policies, procedures, data processes, rules, and capabilities) to facilitate the effective and efficient transfer of academic and technical dual credit courses from high schools to community colleges and four-year institutions.					
<b>Accountable Participants:</b> THECB, TEA		<b>Plan Type:</b> System					
<b>Critical Business Issue:</b> Lack of alignment and clarity in educational policy and regulation for secondary and postsecondary transitions is limiting efficiency and effectiveness of overall educational outcomes.		<b>Key Performance Measures</b>					
		<ul style="list-style-type: none"> <li>Completion of major tasks and deliverables.</li> </ul>					
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule	
			Start (mm/yy)	Completion (mm/yy)			
✓	1	Provide information and training to high school counselors about the differences between workforce and academic dual credit programs and the transferability of courses and programs.	10/2009	10/2011	TEA and THECB will build on THECB Challenge Access Grant training to 20 regional service centers and high school counselors.	Completed Progress reports.	
✓	2	Work with higher education institutions that provide dual credit courses to develop processes and information to advise parents and students about dual credit educational choices and articulation to workforce and/or academic degrees (see information contained in step #1), including information regarding: <ul style="list-style-type: none"> <li>workforce and academic courses, credit differences;</li> <li>core curriculum; and</li> <li>application to two- and four-year degrees.</li> </ul>		3Q/2010		Completed THECB rulemaking process and rule approval.	
✓	3	Design and execute a research study related to the cost/effectiveness of dual credit.		12/2010	TEA will draft an RFP and contract for the study in collaboration with the THECB.	Completed Report due 12/2010. [Published March 2011]	
✓	4	Design and execute a research study regarding dual credit as a substitute for end of course exams.		12/2011	TEA will draft an RFP and contract for the study.	Completed EOC assessments to be phased in: <ul style="list-style-type: none"> <li>9<sup>th</sup> grade in 2011-12;</li> <li>10<sup>th</sup> grade in 2012-13;</li> <li>11<sup>th</sup> grade in 2013-14; and</li> <li>12<sup>th</sup> grade in 2014-15.</li> </ul>	
✓	5	THECB/TEA will improve data systems to more clearly track and evaluate student outcomes and efficacy of dual credit initiatives.	07/2009	06/2014	TEA and THECB will implement an IES Statewide Longitudinal Data System grant.	Completed <ul style="list-style-type: none"> <li>Grant deliverables according to grant timelines.</li> <li>Data analysis limited to the number of cohorts in the system, to begin with FY 2012 cohort.</li> <li>TEA implemented Texas Student Data System as alternative system. Early adoptees began using in 2013-14 school year; three-phase rollout ending in 2016-17 school year.</li> <li>Texas Public Education Information Resource website generates dual credit enrollment and outcome reports.</li> </ul>	

<b>Action Plan ID:</b> S3	<b>Action Plan Owner:</b> THECB, TEA	<b>Action Plan – 2015 Review</b>	<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL	<b>Long Term Objective</b>			<b>Plan Type:</b> System
<b>Key Performance Area:</b> Systems, Operations, Competencies and Integration	By 2013, education and training partners will have the infrastructure necessary (policies, procedures, data processes, rules, and capabilities) to facilitate the effective and efficient transfer of academic and technical dual credit courses from high schools to community colleges and four-year institutions.			
<b>Accountable Participants:</b> THECB, TEA				
<b>Critical Business Issue:</b> Lack of alignment and clarity in educational policy and regulation for secondary and postsecondary transitions is limiting efficiency and effectiveness of overall educational outcomes.	<b>Key Performance Measures</b>			
	<ul style="list-style-type: none"> <li>Completion of major tasks and deliverables.</li> </ul>			

Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	6	Evaluate the manner in which dual credit courses are defined relative to course outcomes and understanding of learning objectives for instructors.		ongoing	THECB work with 2-/4-year institutions to develop explicit learning outcomes that will be consistent across academic courses taught at all institutions in the state. Phased review process for the most frequently used/taken courses.	In Progress <ul style="list-style-type: none"> <li>THECB works with community and technical college and university faculty to develop learning outcomes that will be consistent across academic courses taught statewide. Adopted recommendations incorporated into THECB's <i>Academic Course Guide Manual</i>. [Ongoing] [NOTE: Workforce courses in <i>Workforce Education Course Manual</i> already have learning outcomes.]</li> <li>THECB in the planning stage for developing programs of study for technical courses; HB 2628 (84<sup>th</sup> Legislature; effective September 1, 2015). [Ongoing]</li> </ul>
✓	7	Continue to develop and deploy Early College High School programs to identify issues and to inform the evolution of dual credit policies and procedures.	ongoing	ongoing	TEA will develop grant applications and award grants to school districts.	In Progress <ul style="list-style-type: none"> <li>Progress reports. [Ongoing]</li> <li>154 ECHS approved for 2015-16 school year. [Ongoing]</li> </ul>
✓	8	Continue to develop and deploy college credit programs in public high schools to ensure high schools meet the mandate to offer every student the opportunity to earn 12 hours of postsecondary credit.	ongoing	ongoing	Implemented by school districts.	In Progress <ul style="list-style-type: none"> <li>Data collection. [Ongoing]</li> <li>HB 5 (83<sup>rd</sup> Legislature) included options for performance acknowledgement on student's diploma and transcript, including outstanding performance in a dual credit course. Modified by HB 181 (84<sup>th</sup> Legislature) to remove diploma requirement; effective May 13, 2015. [Ongoing]</li> </ul>

Action Plan ID: S4		Action Plan Owner: Council		Action Plan – 2015 Review		Updated: 8/31/15		Rev: 3	
Action Plan Status: FINAL		Long Term Objective							
Key Performance Area: Systems, Operations, Competencies and Integration		By 2013, design and implement a demonstration program targeted to improve perception of career options that career technical education (CTE) programs enable.							
Accountable Participants: Council		Plan Type: System							
Critical Business Issue: Career and technical education is perceived by many as a less desirable career option.		Key Performance Measures							
		<ul style="list-style-type: none"> <li>Completion of major tasks and deliverables.</li> </ul>							
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule			
			Start (mm/yy)	Completion (mm/yy)					
✓	1	Design and execute a research study to identify models of best and promising practices for Texas high schools.	12/2009	07/2010		Completed			
✓	2	From the study results, determine: <ul style="list-style-type: none"> <li>common characteristics that the models share,</li> <li>elements for replication,</li> <li>linkages to middle school, and</li> <li>measures of success (metrics).</li> </ul>	08/2010	09/2010		Completed <i>Research Findings: Raising Awareness of Career Technical Education in Texas Schools</i> (September 2010).			
✓	3	Convene a team to design a model of CTE outreach and awareness that incorporates those characteristics, elements, middle school linkages and metrics (step # 2).	09/2010	12/2010		Completed			
✓	4	<b>Note: Change of methodology from RFA to informational guide starting at this step.</b> Publish and distribute an informational guide supporting demonstration of the model of CTE outreach and awareness (Step 3).	09/2012	05/2013		Completed			
✓	5	Reconvene the team for guidance on critical content of informational guide and possible incentives.	09/2012	01/2013		Completed			
✓	6	Identify and collect existing career exploration and detailed career information resources, tools, videos, events, and online sites that support activities in the informational guide.	09/2012	01/2013		Completed			
✓	7	Develop an informational guide for counselors and school administrators and CTE directors/teachers.	09/2012	01/2013		Completed <i>Career Awareness Model: A Guide to a Sequential, Cohort-Based Approach</i> (June 2013).			
✓	8	Develop support materials for implementation of the model.	09/2012	04/2013		Completed			
✓	9	Distribute the informational guide to interested public high schools in Texas.	04/2013	05/2013		Completed Distributed to school districts in partnership with Career and Technology Association of Texas (CTAT). [June 2013]			
✓	10	Request feedback from schools regarding implementation, outcomes, and any success stories or lessons learned.	TBD			Completed Coordinated with CTAT to request feedback on guide and model. [November 2014]			
✓	11	Request data from TEA for participating schools to gauge or explore possible outcomes associated with implementing the informational guide.	TBD			Completed In conjunction with survey noted in task 10.			

Action Plan ID: C1		Action Plan Owner: HHSC-DARS	Action Plan – 2015 Review		Updated: 8/31/15	Rev: 2
Action Plan Status: FINAL		Long Term Objective				Plan Type: Partner
Key Performance Area: Customer Outcomes		By 2013, the blind and disabled populations will achieve additional employment outcomes.				
Accountable Participants: HHSC-DARS						
Critical Business Issue: Everyone must be part of the critical pool of potential employees that is and will be required by Texas employers, especially target populations. Target populations include the blind and disabled, who with focused assistance can achieve enhanced employment outcomes.		Key Performance Measures				
		<ul style="list-style-type: none"> <li>Blind vocational rehabilitation services will achieve a minimum employment rate of 68.9%.</li> <li>General disability vocational rehabilitation services will achieve a minimum employment rate of 55.8%.</li> <li>Blind vocational rehabilitation services will achieve a minimum employment retention rate of 85%.</li> <li>General disability vocational rehabilitation services will achieve a minimum employment retention rate of 70%.</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Blind and General Vocational Rehabilitation will develop and implement new and innovative projects that are partnerships between community rehab providers and employers. The outcome of these partnerships will be for consumers to become employed with the partner employer (or with an employer within a similar industry) and for employers to have access to trained potential employees.  Develop a Request for Proposal to solicit applications.	07/2009	12/2009		Completed Development and posting of Request for Proposal.
✓	2	Award up to 15 partner projects across the state that take place within a business based on the key deliverables: <ul style="list-style-type: none"> <li>Consumers receive industry specific training on business site.</li> <li>Consumers acquire soft skills.</li> <li>Consumers complete training, go to work and remain employed.</li> <li>Work occurs with the employer partner or a company within the industry.</li> </ul> The projects can continue as a fee based service after the completion of the contracts.	12/2009	03/2010		Completed Evaluation of proposals and selection of contractors.
✓	3	Implementation of contracts.	03/2010	08/2012		Completed <ul style="list-style-type: none"> <li>Ongoing monitoring and technical assistance; documentation of goals achieved first year for continued funding for second year; required ARRA and other state and federal reporting.</li> <li>Scheduled to end March 2012; may extend as cost reimbursement contracts pending development of template for fee-based embedded training.</li> </ul>
✓	4	Evaluation of projects and contractors for continuation.	09/2011	08/2012		Completed Sustainability plan.

<b>Action Plan ID: C2</b>		<b>Action Plan Owner: TVC</b>	<b>Action Plan – 2015 Review</b>		<b>Updated: 8/31/15</b>	<b>Rev: 2</b>
<b>Action Plan Status: FINAL</b>		<b>Long Term Objective</b>				<b>Plan Type:</b> <b>Partner</b>
<b>Key Performance Area:</b> Customer Outcomes		By 2013, the veteran population will achieve additional employment outcomes.				
<b>Accountable Participants:</b> TVC						
<b>Critical Business Issue:</b> Everyone must be part of the critical pool of potential employees that is and will be required by Texas employers, especially target populations. Target populations include veterans. While they often have a wide range of disabilities, with training, referral and placement services they can return to the civilian workforce.		<b>Key Performance Measures</b>				
		<ul style="list-style-type: none"> <li>• Achieve a minimum target for employment rate as approved by LBB.</li> <li>• Achieve a minimum target for employment retention rate as approved by LBB.</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Coordinate with Family Support Centers & ACAP on military installations to provide increased seminars and schedule outgoing military personnel to attend.	08/2009	ongoing	ACAP facilities, Family Support Centers, DOL.	In Progress <ul style="list-style-type: none"> <li>▶ Increase number of TAP seminars by a percentage relevant to the exiting number of military personnel.</li> <li>▶ Review of monthly TAP reports, report outcomes on semi-annual basis.</li> </ul>
✓	2	Coordinate with VA and DOD to identify exiting personnel that could benefit from Real Lifelines.	08/2009	ongoing	DOD, DOL, VA.	In Progress <ul style="list-style-type: none"> <li>▶ Increase participation in Real Lifelines program.</li> <li>▶ Reported at the end of 4<sup>th</sup> quarter.</li> </ul>
✓	3	Outreach major corporations to inform them of the benefits of hiring veterans.	08/2009	ongoing	TWC, DOL, LWDBs.	In Progress <ul style="list-style-type: none"> <li>▶ Increase employment and training opportunities within the Texas workforce development system.</li> <li>▶ WISPR, quarterly.</li> <li>▶ Statewide Business Outreach Coordinator. [November 2009]</li> <li>▶ Veterans Business Representatives initiative. [July 2011]</li> <li>▶ Texas Coordinating Council for Veterans Services' biennial report and recommendations to the Governor and legislature (SB 1796, 82<sup>nd</sup> Legislature). [October 2012 and October 2014]</li> </ul>
✓	4	Make a special benefits website, launch a public service announcement campaign through radio and TVC and perform direct mail outs.	08/2009	09/2010	TVC, TWC, DOL.	Completed <ul style="list-style-type: none"> <li>▶ Raise public awareness of the Texas Veterans Commission.</li> <li>▶ Total number of participants reported quarterly via WISPR.</li> </ul>

<b>Action Plan ID:</b> C3		<b>Action Plan Owner:</b> SITAC	<b>Action Plan – 2015 Review</b>		<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL		<b>Long Term Objective</b>				<b>Plan Type:</b>  <b>System</b>
<b>Key Performance Area:</b> Customer Outcomes		By 2013, design and implement integrated Adult Basic Education and workforce skills training programs to enhance employment outcomes for the English language learner population.				
<b>Accountable Participants:</b> TEA, TWC, THECB						
<b>Critical Business Issue:</b> Everyone must be part of the critical pool of potential employees that is and will be required by Texas employers, especially target populations. Target populations include English language learners, who constitute a growing population requiring additional skills for workforce-related success.		<b>Key Performance Measures</b>				
		<ul style="list-style-type: none"> <li>• Increase in the number of vocational English as a Second Language (ESL) graduates (subset of ESL population).</li> <li>• Increase in vocational ESL graduate entered employment rate (subset of ESL population).</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Design and conduct a market evaluation to determine: <ul style="list-style-type: none"> <li>• size of population (adult English language learner with educational outcome of high school or greater), and</li> <li>• geographic distribution of population (rural/urban, LWDA), and other pertinent criteria.</li> </ul>	01/2010	06/2010	TWC.  Determination of specified geography.	Completed TWC LMI and/or the Texas State Demographer.
✓	2	Identify and assess local workforce occupational needs to determine potential high impact employment outcomes where significant local skills gaps exist.	06/2010	12/2010	Local workforce boards. Biennial supply- demand report.	Completed Labor market assessment at local level. Cross match outputs of steps # 1 and 2 to determine most significant training impact.
✓	3	Establish a work group, including members from TWC, CTCs, TEA and the Council, to design and develop a model (including funding) that can be executed through community and technical colleges and local workforce boards. The model will include: <ul style="list-style-type: none"> <li>• an integrated program design (language and occupational skills) delivered through local CTCs.</li> <li>• funding from multiple funding streams: <ul style="list-style-type: none"> <li>○ a local workforce board, through workforce funding, as the occupational training purchaser,</li> <li>○ TEA, through ABE funding, as the language instruction purchaser.</li> </ul> </li> <li>• an education/training outcome of certificate or higher.</li> <li>• an educational/training duration that is of short to mid-term duration.</li> </ul>	06/2010	10/2010	TEA would need to know funding requirements by Oct/Nov the preceding year, for Feb/March for program initiation in July 2010.  Resolve the question of new employment or upgraded employment and target audiences during working group model development. Wage gain aspects will also need to be discussed within the context of the model.	Completed Model and supporting documentation.
✓	4.	Negotiate with local providers and local boards.	10/2010	02/2011	Link to ABE grant applications if required.	Completed Agreement for pilot and dedicated funding allocation. Request for Applications with funding under THECB Riders 45 and 56, Senate Bill 1 (81 <sup>st</sup> Legislature).
✓	5	Design, develop and execute (a) pilot project(s) in targeted markets that includes the following process steps: outreach to target population and employers, program delivery, and marketing pilot participants to employers.	07/2011	06/2012	Work eligible participants, per WIA, with SSNs.	Completed <ul style="list-style-type: none"> <li>▶ Pilot projects at seven community colleges. [August 2011-August 2013]</li> <li>▶ Expanded to add eighth project. [Fall 2010-August 2013]</li> </ul>



<b>Action Plan ID: C3</b>		<b>Action Plan Owner: SITAC</b>		<b>Action Plan – 2015 Review</b>		<b>Updated: 8/31/15</b>	<b>Rev: 2</b>
<b>Action Plan Status: FINAL</b>		<b>Long Term Objective</b>					
<b>Key Performance Area:</b> Customer Outcomes		By 2013, design and implement integrated Adult Basic Education and workforce skills training programs to enhance employment outcomes for the English language learner population.					
<b>Accountable Participants:</b> TEA, TWC, THECB		<b>Plan Type:</b> System					
<b>Critical Business Issue:</b> Everyone must be part of the critical pool of potential employees that is and will be required by Texas employers, especially target populations. Target populations include English language learners, who constitute a growing population requiring additional skills for workforce-related success.		<b>Key Performance Measures</b>					
		<ul style="list-style-type: none"> <li>Increase in the number of vocational English as a Second Language (ESL) graduates (subset of ESL population).</li> <li>Increase in vocational ESL graduate entered employment rate (subset of ESL population).</li> </ul>					
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule	
			Start (mm/yy)	Completion (mm/yy)			
✓	6	Design, develop and execute evaluation tool to assess results and evaluate funding and implications for large-scale roll out.	06/2012 design develop	09/2012 execute	Influenced by # 3 and 5.	Completed	<ul style="list-style-type: none"> <li>Assess delivery, employment outcomes and establish performance measure targets. Recommend improvements.</li> <li>Descriptive analysis of Accelerate Texas programs, including colleges with ESL pilot programs. [Texas State University, November 2013]</li> <li>Evaluation of Accelerate Texas programs, including mentor colleges that built sustainable Accelerate Texas models. [Texas A&amp;M University, Public Policy Research Institute (PPRI), November 2014]</li> <li>PPRI contract extended to support evaluation of up to eight new Accelerate Texas colleges through December 2016. [July 2015]</li> </ul>
✓	7	Develop and execute roll out plan.	01/2013	08/31/15	Adjust model based on # 6.	Completed	<ul style="list-style-type: none"> <li>THECB 2015-2017 Accelerate Texas request for applications incorporated elements of the pilot model, requiring colleges offering an integrated pathway to offer 75% of their workforce training certificates as Marketable Skills Achievement awards or level 1 certificates. Of the certifications, 25% can be local, portable certificates which require passing an industry, state, or national examination to work in that field. [January 2015]</li> <li>TWC 2015 request for proposals for integrated education and training services based on Accelerate Texas model. [March 2015]</li> </ul>

<b>Action Plan ID:</b> C4	<b>Action Plan Owner:</b> SITAC	<b>Action Plan – 2015 Review</b>	<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL	<b>Long Term Objective</b>			<b>Plan Type:</b>  <b>System</b>
<b>Key Performance Area:</b> Customer Outcomes	By 2013, design and implement targeted Adult Basic Education programs to enhance employment outcomes for populations requiring workplace literacy skills.			
<b>Accountable Participants:</b> TEA, TWC				
<b>Critical Business Issue:</b> Everyone must be part of the critical pool of potential employees that is and will be required by Texas employers, especially target populations. Target populations include those with low literacy levels, who can be assisted through targeted literacy programs to gain or maintain employment.	<b>Key Performance Measures</b>			
	<ul style="list-style-type: none"> <li>• Increase in the number of workforce literacy graduates (subset of ABE population).</li> <li>• Increase in workforce literacy graduate entered employment rate (subset of ABE population).</li> </ul>			

Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Identify and assess current initiatives related to workplace literacy program delivery underway in Texas.	01/2010	06/2010		Completed Look for different regions to support both C3 and C4 pilots.
✓	2	Identify and assess how many workforce boards have robust ABE relationships already established. <ul style="list-style-type: none"> <li>• Review the 28 local workforce development board Program Year 2009 plans to see how they address Adult Basic Education (ABE).</li> <li>• Determine possible criteria for a “robust” ABE relationship between ABE providers and local boards.</li> <li>• Develop questions related to ABE and include those in the planning guidelines to be issued to local boards for PY 2010 during the Spring of 2010.</li> <li>• Evaluate responses from boards and provide a summary report by June 2010.</li> </ul>	01/2010	06/2010	TWC linkage for support and local providers.	Completed
✓	3	Determine content of workplace literacy skills program, and modify and/or add to existing curriculum.	06/2010	12/2010	Produce curriculum from existing courses, modules and resources.	Completed
✓	4	Establish a workgroup, including members of TEA, the Council and local program providers and boards, to design and develop a model of program outreach and delivery that fits within existing ABE funding and program offerings and initiatives and is offered concurrently with ABE levels 4-6, and includes: <ul style="list-style-type: none"> <li>• a quarterly career exploration/awareness workshop for levels 4-6 students (the “what” a student can do).</li> <li>• a workplace skills program (the “how” a student can get there) that: <ul style="list-style-type: none"> <li>○ is accelerated (X hours over 2 to 3 weeks).</li> <li>○ is taken concurrently with ABE courses.</li> <li>○ focuses on essential workplace literacy skills (including soft skills and understanding of workplace documents, instructions, etc.).</li> <li>○ results in a certificate of accomplishment.</li> </ul> </li> </ul> <p><i>[Cont'd on next page]</i></p>	06/2010	10/2010	TEA would need to know funding requirements by Oct/Nov the preceding year, for Feb/March for program initiation in July of 2010.	Completed Model and supporting documentation.

Action Plan ID: C4		Action Plan Owner: SITAC	Action Plan – 2015 Review		Updated: 8/31/15	Rev: 2
Action Plan Status: FINAL		Long Term Objective				Plan Type: System
Key Performance Area: Customer Outcomes		By 2013, design and implement targeted Adult Basic Education programs to enhance employment outcomes for populations requiring workplace literacy skills.				
Accountable Participants: TEA, TWC						
Critical Business Issue: Everyone must be part of the critical pool of potential employees that is and will be required by Texas employers, especially target populations. Target populations include those with low literacy levels, who can be assisted through targeted literacy programs to gain or maintain employment.		Key Performance Measures				
		<ul style="list-style-type: none"> <li>Increase in the number of workforce literacy graduates (subset of ABE population).</li> <li>Increase in workforce literacy graduate entered employment rate (subset of ABE population).</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
	4 cont'd	<i>Cont'd from preceding page:</i> <ul style="list-style-type: none"> <li>linkage and referral to local workforce boards as determined in the program initiative design, for possible involvement in content delivery, assessment and certification, employment assistance.</li> <li>outreach to employers (possibly through a chamber of commerce) for program completers.</li> </ul>	06/2010	10/2010	TEA would need to know funding requirements by Oct/Nov the preceding year, for Feb/March for program initiation in July of 2010.	Model and supporting documentation.
✓	5	Negotiate with local providers and local boards.	10/2010	02/2011	Link to ABE grant applications if required.	Completed Agreement for pilot and dedicated funding allocation.
✓	6	Execute pilot.	07/2011	06/2012		Completed Pilot projects at 10 adult education providers in three local board areas. [September 2011-June 2013]
✓	7	Design, develop and execute evaluation tool to determine program strengths, weakness and any recommended changes.	01/2012 design develop	04/2014	Influenced by # 3 and 6.	Completed <ul style="list-style-type: none"> <li>Assess delivery, employment outcomes and establish performance measure targets. Recommend improvements.</li> <li>Adult education and literacy programs transferred from TEA to TWC (SB 307, 83<sup>rd</sup> Legislature). [September 2013]</li> <li>TWC's initial request for proposals incorporated key elements of the model by requiring service providers to implement career pathways programs. [2014]</li> </ul>
✓	8	Prepare and execute roll out plan.	01/2013	08/31/15	Adjust model based on # 7.	Completed <ul style="list-style-type: none"> <li><i>Adult Education and Literacy State Plan</i>, submitted to US Department of Education, supports continued development of content and models for integrated education and training career pathways, and other postsecondary transition models and workplace projects with employers. [March 2015]</li> </ul>

Action Plan ID: P1		Action Plan Owner: CTCs	Action Plan – 2015 Review		Updated: 8/31/15	Rev: 2
Action Plan Status: FINAL		Long Term Objective				Plan Type: System
Key Performance Area: Programs, Products and Services		Community and technical colleges (CTCs) will plan and execute education and training programs to address workforce skills gaps in their regions, as identified by local needs assessments or the biennial supply-demand report produced by the THECB and TWC.				
Accountable Participants: Council, CTCs		Key Performance Measures				
Critical Business Issue: Increasing shortage of workers with appropriate middle skills created by a skills gap and future workforce retirements in a wide range of industries and occupations.		<ul style="list-style-type: none"> <li>Completion of major tasks and deliverables.</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Determine how closely aligned college program offerings are to local workforce needs through: <ul style="list-style-type: none"> <li>undertaking a local needs assessment, or</li> <li>referencing the biennial supply-demand report produced by the THECB and TWC.</li> </ul>	ongoing	biennial	Supply-demand report to be produced as specified in LTO S1.	In Progress
✓	2	From the alignment assessment in step # 1, identify any areas of significant skills gaps.	ongoing			In Progress
✓	3	Where a skills gap is identified adjust college program offerings, by <ul style="list-style-type: none"> <li>planning and implementing a new program in the occupational area, at the appropriate certificate or degree level. OR</li> <li>expanding an existing program to narrow the gap and address employers' short- and long-term needs.</li> </ul>	ongoing		Funding to create new or expand existing programs.  THECB program approval process.  Structural barriers.	In Progress
✓	4	The new or expanded programs and additional student enrollments may be in either for-credit or not-for-credit course/program offerings.	ongoing			In Progress
✓	5	When developing new or expanding existing programs, colleges will consider more than one and two-year programs for emerging high-skill occupations. They will also consider high demand occupations and certification in skilled trade areas such as welding, machining, field service technician, construction, pipefitting, plumbing and maintenance where those trades are critical to the economy and where the supply of skilled workers is limited.	N/A		College budget, available funding, facilities, instructors and equipment.  Program delivery (hybrid, online, industry-based) methodologies to increase both effectiveness and cost efficiencies.	In Progress
✓	6	The Texas Workforce Investment Council (Council) will survey community and technical colleges to identify innovative and best practices related to 1-5 above, and disseminate those results.	2014	2015	Elements to include analysis of decision, development, budget and student outcomes.	Completed <i>Estimating Labor Demand and Supply in Texas: How Planning Tools and Data are Used.</i> [University of Texas, Ray Marshall Center, July 2014]

<b>Action Plan ID: P2</b>		<b>Action Plan Owner:</b> Council	<b>Action Plan – 2015 Review</b>		<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL		<b>Long Term Objective</b>				<b>Plan Type:</b>  System
<b>Key Performance Area:</b> Programs, Products and Services		By 2012, design, develop, and implement a pilot program to demonstrate flexibility of the 'earn while you learn' model of traditional apprenticeship programs. Where appropriate, expand and replicate into new occupational areas by 2015.				
<b>Accountable Participants:</b> Council						
<b>Critical Business Issue:</b> Increasing shortage of workers with appropriate middle skills created by a skills gap and future workforce retirements in a wide range of industries and occupations.		<b>Key Performance Measures</b>				
		<ul style="list-style-type: none"> <li>• Execution of pilot by specified date.</li> <li>• Evaluation of early-stage outcomes for program participants.</li> <li>• Evaluation of program completion outcomes for program participants.</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Form statewide leadership team/ steering committee to guide the execution of the action plan and projects that are generated from it.	in progress	12/2009		Completed
✓	2	Identify up to three potential projects to address employer demand for skilled workers through registered apprenticeship training. Eligible projects would be engaged in: <ul style="list-style-type: none"> <li>• modification of an existing registered apprenticeship program to incorporate the increased flexibility afforded by new DOL regulations, or</li> <li>• development of a new registered apprenticeship program in an occupation that is part of one or more of the Governor's six target industry clusters.</li> </ul>	12/2009	03/2010	2008 revisions to Title 29 CFR part 29, including but not limited to use of competency-based program design, a hybrid of competency-based and time-based program design, or use of electronic media and other tools to support technology-based and distance learning options.	Completed
✓	3	Identify and secure commitment to participate from the entities that will be necessary to develop/modify and implement the program. These entities form the Project Team for each project and will include representatives from some or all of the following, based on the needs and design of the project: the local education agency; community college; workforce board; employers; labor union; joint apprenticeship training committee; and U.S. Department of Labor.	03/2010	09/2010		Completed
✓	4	Project team works with DOL to modify/ register program.	09/2010	09/2012		Completed
✓	5	If additional federal funding becomes available for expansion of registered apprenticeship, the Project Team, in consultation with the statewide leadership team/steering committee, will prepare and submit a proposal for funding.	2010	ongoing	Availability of funding from the U.S. Department of Labor.	Completed Not applicable during the pilot period.
✓	6	Undertake formative evaluations of the programs in this initiative at the mid-point of the length of the program.	2013	2014	Pilot program duration.	Completed <i>Quarterly Updates</i> during the project period.
✓	7	Undertake summative evaluations of the programs in this initiative at the end-point of the length of the program.	2014	2015	Pilot program duration.	Completed <i>Registered Apprenticeship as a Strategy to Meet Employer Demand for Skilled Workers</i> (December 2013).

<b>Action Plan ID:</b> P3	<b>Action Plan Owner:</b> Council	<b>Action Plan – 2015 Review</b>	<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL	<b>Long Term Objective</b>			<b>Plan Type:</b> System
<b>Key Performance Area:</b> Programs, Products and Services	The Council will produce a data set whereby system stakeholders can ascertain Texas' position relative to key indicators of competitiveness.			
<b>Accountable Participants:</b> Council				
<b>Critical Business Issue:</b> Data is required to ensure that system initiatives can be developed and executed to strategically position Texas in the global workforce marketplace.	<b>Key Performance Measures</b>			
	<ul style="list-style-type: none"> <li>Publication of quantitative data and analysis report (<i>Texas Index</i> or its equivalent).</li> </ul>			

Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Develop and disseminate a report with specific strategic indicators that provide information on how Texas ranks relative to other states and nations. The indicators in the report will include those critical education, workforce, research and development, market (economy) data sets related to competitive position, and other data sets as appropriate.		ongoing		Completed Prior to each annual development cycle, the indicators in the reports will be reviewed to determine: <ul style="list-style-type: none"> <li>if additional indicators are needed, and/or</li> <li>if any indicator should be discontinued.</li> </ul>
✓	2	Each indicator will include the following comparative data: <ul style="list-style-type: none"> <li>Large states (top 4 to 5).</li> <li>50-state league table (abbreviated).</li> <li>International data – OECD, top three.</li> <li>International data – BRIC, top two.</li> <li>U.S. average.</li> </ul>		ongoing	Available comparative data.	Completed
✓	3	2009 Index published and disseminated.		10/2009		Completed Index published and disseminated.
✓	4	2010 Index published and disseminated.		10/2010		Completed Index published and disseminated. <i>NOTE: Published in early 2011, the 2010 Texas Index contained 10 indicators with data sets identical to those in the 2009 report due to lack of new data.</i>
✓	5	2011 Index published and disseminated.		10/2011		Completed Index published and disseminated. <i>NOTE: Due to similar data unavailability, the 2011 Texas Index was compiled but not published.</i>
✓	6	Index published and disseminated.		per schedule		Completed Index published and disseminated in 2013.

<b>Action Plan ID: P4</b>		<b>Action Plan Owner:</b> LWDBs	<b>Action Plan – 2015 Review</b>		<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL		<b>Long Term Objective</b>				<b>Plan Type:</b>  <b>Partner</b>
<b>Key Performance Area:</b> Programs, Products and Services		Local boards will align with and support the workforce system strategic plan through their planning processes and related initiatives. This will be documented in board plans and plan modifications, which are submitted to the Council for approval.				
<b>Accountable Participants:</b> LWDBs						
<b>Critical Business Issue:</b> Local workforce boards must understand and meet the needs of their local communities because they are the system's front line partner in offering relevant programs and services.		<b>Key Performance Measures</b>				
		<ul style="list-style-type: none"> <li>• Alignment of local board plans to the workforce system strategic plan.</li> <li>• Success of key strategies, as demonstrated by performance data or qualitative outcomes, as appropriate and relevant.</li> </ul>				
Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Each local workforce board will submit its local plan or plan modification to the Texas Workforce Investment Council (Council), which serves as the State Workforce Investment Board under the federal Workforce Investment Act, for approval.	06/2010	08/2015	Texas Workforce Commission (TWC) requirement to submit a local board plan or plan modification.	Completed Completed 2011 and 2013 requirements.
✓	2	Each local board plan or plan modification will demonstrate through the inclusion of specific strategies, processes and initiatives alignment with the workforce system strategic plan, and performance and/or progress from the previous plan submission.		n/a	TWC local board planning guidelines.	Completed Completed 2011 and 2013 requirements.
✓	3	Each local board plan or plan modification will address, in addition to requirements in step # 2 above, requests for information or data made by the Council as part of the Council's consideration of local plans.			Texas Workforce Commission Local Board Planning Guidelines development.	Completed Inclusion of an appendix in the planning guidelines that articulates the Council's request for information and data as it relates to alignment and performance. [Completed for 2011 through separate information request and for 2013 through planning guidelines]
✓	4	2010 submission of local board plan or plan modification.		06/2010		<i>NOTE: TWC extended existing, approved board plans through September 2011; therefore, Council action was not required.</i>
✓	5	2011 submission of local board plan or plan modification.  [Cont'd on next page]		06/2011		Completed <ul style="list-style-type: none"> <li>▶ TWC extended existing, approved board plans through September 2012. Boards were required to update their plans through: <ul style="list-style-type: none"> <li>- submitting amendments, as necessary;</li> <li>- reviewing their Targeted Industries List and Statewide Target Occupation List; and</li> <li>- submitting any changes to their Targeted Industries List and Statewide Target Occupation List, or providing a statement that the lists have been reviewed and no changes were needed.</li> </ul> </li> </ul> Two board submissions with substantive changes were determined

<b>Action Plan ID:</b> P4	<b>Action Plan Owner:</b> LWDBs	<b>Action Plan – 2015 Review</b>	<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL	<b>Long Term Objective</b>			<b>Plan Type:</b>  <b>Partner</b>
<b>Key Performance Area:</b> Programs, Products and Services	Local boards will align with and support the workforce system strategic plan through their planning processes and related initiatives. This will be documented in board plans and plan modifications, which are submitted to the Council for approval.			
<b>Accountable Participants:</b> LWDBs				
<b>Critical Business Issue:</b> Local workforce boards must understand and meet the needs of their local communities because they are the system's front line partner in offering relevant programs and services.	<b>Key Performance Measures</b>			
	<ul style="list-style-type: none"> <li>Alignment of local board plans to the workforce system strategic plan.</li> <li>Success of key strategies, as demonstrated by performance data or qualitative outcomes, as appropriate and relevant.</li> </ul>			

Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
	5 cont'd	<i>Continued from preceding page:</i> 2011 submission of local board plan or plan modification.		06/2011		to be modifications. Following review by TWC and the Council, both were endorsed and recommended to the Governor for final approval. <ul style="list-style-type: none"> <li>TWC assisted with the collection of summative data and information from local boards related to the implementation of <i>Advancing Texas</i>. All 28 local boards provided information pertaining to three action plans.</li> </ul>
✓	6	2012 submission of local board plan or plan modification.		06/2012		<i>NOTE: In September 2012, TWC extended existing, approved board plans through March 2013, and in December 2012 further extended them through June 2013 to allow local boards additional time to develop new five-year plans. Council action was not required.</i>
✓	7	2013 submission of local board plan or plan modification.		06/2013		Completed New plans were approved for all 28 boards in June 2013. Boards were required to: <ul style="list-style-type: none"> <li>document strategies designed to meet the needs of three populations and to facilitate their entry into the workforce: veterans, the blind or disabled, and those with low literacy or English language skills; and</li> <li>describe an innovative strategy that included collaboration with two or more system partners.</li> </ul>
✓	8	2014 submission of local board plan or plan modification.		06/2014		<i>NOTE: New board plans or modifications were not required. The Council took several actions to obtain local board input for development of the new workforce system strategic plan.</i>
✓	9	2015 submission of local board plan or plan modification.		06/2015		<i>NOTE: New board plans or modifications were not required due to the enactment of the Workforce Innovation and Opportunity Act of 2014 (PL 113-128).</i>



<b>Action Plan ID: P5</b>	<b>Action Plan Owner:</b> SITAC	<b>Action Plan – 2015 Review</b>	<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL	<b>Long Term Objective</b>			<b>Plan Type:</b>  <b>System</b>
<b>Key Performance Area:</b> Programs, Products and Services	Partner agencies will gather data from employer customers at appropriate intervals to determine employer needs and satisfaction.			
<b>Accountable Participants:</b> Partner agencies	<small>Note: The work associated with this LTO is being carried over from <i>Destination 2010 FY2004-FY2009 Strategic Plan for the Texas Workforce Development System</i>. Some activities in the agency projects that support this LTO reflect activities that began prior to September 1, 2009.</small>			
<b>Critical Business Issue:</b> Existing data gap regarding employers' needs and customer satisfaction hinders the ability to assess whether existing programs and services are adequately meeting customer requirements.	<b>Key Performance Measures</b> <ul style="list-style-type: none"> <li>• Development and execution of a methodology to systematically and routinely identify relevant employers' needs and the level of satisfaction to which those needs are being met.</li> <li>• By 2013, increase the level of customer satisfaction.</li> </ul>			

Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Health and Human Services Commission - Department of Assistive and Rehabilitative Services (Blind and Rehabilitation Programs) Evaluation of Employer Needs and Satisfaction Project.	prior to 09/2009	08/2015		Completed See related project plan attached to this action plan.
✓	2	Texas Higher Education Coordinating Board (Community and Technical College Programs) Evaluation of Employer Needs and Satisfaction Project.	prior to 09/2009	08/2015		Completed See related project plan attached to this action plan.
✓	3	Texas Veterans Commission (Veterans Employment Services) Evaluation of Employer Needs and Satisfaction Project.	prior to 09/2009	08/2015		Completed See related project plan attached to this action plan.
✓	4	Texas Youth Commission (Career and Technical Education-related Program) Evaluation of Employer Needs and Satisfaction Project.	prior to 09/2009	08/2015		Completed See related project plan attached to this action plan.
✓	5	Windham School District, Texas Department of Criminal Justice, (Career and Technical Education-related Programs) Evaluation of Employer Needs and Satisfaction Project.	prior to 09/2009	08/2015		Completed See related project plan attached to this action plan.

## Evaluation of Employer Needs and Satisfaction Project [P5.1 – 2015 Review]

<i>Accountable Participant:</i>		Health and Human Services Commission – Department of Assistive and Rehabilitative Services		
<i>Target:</i>		90% satisfaction level		
<p><i>Goal(s): Evaluate the level of satisfaction of businesses with the services provided by DARS for:</i></p> <ul style="list-style-type: none"> <li>▶ <i>program planning and management efforts; and</i></li> <li>▶ <i>potential use as a resource in development of the agency's next biennial strategic plan.</i></li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
1 ✓	Determine data required to evaluate business satisfaction with DARS' services and how data will be collected and stored.	04/09	<ul style="list-style-type: none"> <li>▶ Online surveys</li> <li>▶ Needs assessment of data infrastructure</li> <li>▶ Processes illustrating how surveys would be administered and used</li> </ul>	<p>Completed</p> <p><b>Developed survey questions</b> stemming from and relating to:</p> <ul style="list-style-type: none"> <li>▶ The Services Inventory.</li> <li>▶ <b>32<sup>nd</sup> IRI Foundational Principles and employer expectations (National Network)</b> – Questions shaped to assess how well principles and expectations are being met. Developed matrix between questions and what they tell us.</li> <li>▶ Feedback obtained from business focus groups interviewed July-August 2009.</li> </ul> <p><b>One survey will evaluate:</b></p> <ul style="list-style-type: none"> <li>▶ <b>Transactions</b> (short-term, immediate, available continuously, specific; <b>collected for each interaction or encounter</b>; all businesses could be surveyed).</li> <li>▶ <b>Relationships</b> (long-term, periodic, sample respondents, limited scope; <b>evaluate relationships over time</b>).</li> </ul> <p>Steps for August and September:</p> <ul style="list-style-type: none"> <li>▶ <b>Design survey</b> in web format.</li> <li>▶ Map out <b>survey logistics</b>:                             <ul style="list-style-type: none"> <li>- Survey processes, feedback loops, survey administration schedule, sample selection</li> <li>- Survey format(s) and layouts</li> <li>- How surveys would tie in with ongoing business (continuous improvement)</li> </ul> </li> <li>▶ Identify pilot survey audience.</li> <li>▶ Administer survey (mid-September).</li> </ul>
2 ✓	Complete system enhancements for data collection, if needed, and begin data collection.	09/09		Completed
3 ✓	After data is collected, evaluate the level of satisfaction among businesses and determine whether improvements are needed.	09/10-11/11		Completed Business partners' level of satisfaction was very high for DARS' services (e.g., potential hire, job retention assistance, accommodations and technical assistance, diversity awareness and other presentations). Comments related to service improvements were included; however, no negative responses were received. [November 2011]

<i>Accountable Participant:</i>		Health and Human Services Commission – Department of Assistive and Rehabilitative Services		
<i>Target:</i>		90% satisfaction level		
<i>Goal(s): Evaluate the level of satisfaction of businesses with the services provided by DARS for:</i>				
<ul style="list-style-type: none"> <li>▶ <i>program planning and management efforts; and</i></li> <li>▶ <i>potential use as a resource in development of the agency's next biennial strategic plan.</i></li> </ul>				
<b>No.</b>	<b>Task</b>	<b>Due Date</b>	<b>Deliverable(s)</b>	<b>Action(s) Taken</b>
4 ✓	Report of evaluation and make recommendations.	08/31/15		<p>Completed</p> <p>Based on employer feedback, DARS modified processes:</p> <ul style="list-style-type: none"> <li>▶ DARS researches Diversity Policies and Practices for companies earlier in the business relationship. [Ongoing]</li> <li>▶ Business Relations Unit launched and successfully completed five "SWAT Immersions" with field units. The three-day sessions assist units with business relations strategy development and implementation, utilizing key data on businesses, labor demands, job ready consumers and market trends. [Completed 2011]</li> <li>▶ "SWAT Immersions" continued through FY 2014; replaced by regionally focused training and support in FY 2015. [Ongoing]</li> </ul>
5 ✓	Design and implement changes as appropriate to increase business satisfaction with DARS' services.	ongoing		<p>In Progress</p> <ul style="list-style-type: none"> <li>▶ Purchased licenses for cloud based subscriptions for business relations management software and customized site for DARS' use. [November 2011]</li> <li>▶ Beta testing by key DARS' staff. [December 2011]</li> <li>▶ Entered business, contact and job information for larger business accounts. Issued licenses to additional staff; fully operational. [February 2012]</li> <li>▶ Employer satisfaction survey available through online employer portal. [June 2013]</li> <li>▶ Evaluate system expansion plans, considering: [FYs 2014–15] <ul style="list-style-type: none"> <li>– implementation of joint business relations strategy,</li> <li>– establishment of consolidated business relations team,</li> <li>– implementation of agency's Sunset recommendations, and</li> <li>– implementation of Workforce Innovation and Opportunity Act of 2014 (PL 113-128).</li> </ul> </li> </ul>

## Evaluation of Employer Needs and Satisfaction Project [P5.2 – 2015 Review]

Accountable Participant:	Texas Higher Education Coordinating Board			
Target:	<i>Closed: Project modified and completed in 2011.</i>			
<b>Goal(s):</b> Collect data on employer satisfaction with programs administered by community and technical colleges (CTCs).				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
1 ✓	Develop method by which the state will be able to survey employers statewide regarding the quality and applicability of degree and certificate programs from community colleges to the workplace environment.	05/09	THECB will develop an online system by which employers, notified by TWC, will be able to identify the community college programs from which they receive graduates and respond to an online survey for each program.	Completed THECB IT staff have agreed to develop the necessary web portal.
2 ✓	Obtain from TWC the necessary Employer Identification numbers to allow access to the web portal.	09/09	List of Employers with Employer Identification Number received by THECB.	Completed IT Staff are working to obtain the list of eligible employers from TWC.
3 ✓	Verify the survey questions with TWIC.	06/09	Confirmation from TWIC of the appropriate survey questions for inclusion in web survey.	Completed
4 ✓	Develop web portal for use by statewide employers and build database necessary to develop a report for each degree or certificate program at each institution.	09/09	THECB will develop fully functional web portal for state employers to respond to surveys for each individual degree or certificate program by institution.	Completed Web Developers have identified the necessary items for the website and are working to develop the necessary structure. When the website is operational, THECB will develop materials to be distributed electronically to employers.
5 ✓	Notify employers of the survey website location and the opportunity to provide feedback regarding employed graduates of the programs. Window for employers to respond is two months; survey access will be closed at that time.	10/09	THECB will provide TWC with information to be included in official mail to employers statewide notifying them of the web portal.	Completed After developing an online survey system, THECB worked with TWC to notify employers of its availability, also informing the Texas Association of Community Colleges and local workforce boards in an effort to increase awareness and participation.
6 ✓	Provide summary data of survey responses by program and institution.	01/10	THECB will provide a summary of degree and certificate survey results by institution or degree/certificate program.	Completed Insufficient number of responses for statistically significant analysis of the programs or employers' satisfaction.
7 ✓	Colleges analyze data and establish employer satisfaction target(s) where relevant and applicable.	03/10	Target(s), as appropriate.	Completed Insufficient number of responses for statistically significant analysis of the programs or employers' satisfaction.
8 ✓	Assess process and procedures, and modify as necessary to improve survey process and/or utility of website and results. May include elements such as: timeline, actions required by THECB, process used by TWC, and the number and distribution of employers (sample) surveyed.	03/10	Determination regarding changes to survey, process, sample, website to be used as inputs into step 9.	Completed THECB considered new options to meet the plan's intent and in 2011 partnered with the Council to survey CTCs to determine methods and activities related to employer satisfaction.
9 ✓	Conduct annual survey and report results that specify employer satisfaction by institution and degree/certificate program, and identify best practices, if applicable.	09/10-ongoing	Review data and report satisfaction measurement.  Adjust benchmark(s) as necessary.	Completed A two-phase survey process was used to collect information on CTC strategies for determining employer satisfaction and using that information in institutional planning processes to improve program delivery. Blinn College and Lone Star College System were selected as models of promising practices and were formally recognized by the Council in December 2011.

## Evaluation of Employer Needs and Satisfaction Project [P5.3 – 2015 Review]

Accountable Participant:	Texas Veterans Commission			
Target:	80% satisfaction level			
Goal(s): Develop new and/or modify current survey efforts in order to obtain employer data for: <ul style="list-style-type: none"> <li>▶ program planning and management efforts; and</li> <li>▶ use as a resource in development of the agency's next biannual strategic plan.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
1 ✓	Develop design issues for implementing internally-administered employer survey, taking into consideration: <ul style="list-style-type: none"> <li>– timing (e.g., odd-numbered year of biannual strategic planning cycle vs. X months post-placement);</li> <li>– implementation options (e.g., web-based SurveyMonkey.com, email, telephone); and</li> <li>– staff/resource requirements (e.g., state and/or regional staff).</li> </ul>	05/08	Task list and timeline	Completed 05/09 – Tasking and timeline complete: Employer survey to be conducted concurrent with the strategic planning cycle by email and phone using 1-2 staff per TVC region.
2 ✓	Draft survey questions.	05/08	Draft survey	Completed 06/09 – Draft survey questions complete.
3 ✓	Sample specifications: <ul style="list-style-type: none"> <li>– Establish time frame (e.g., last PY or CY) and obtain estimates of number of applicable employers by local board area.</li> <li>– Develop sample specifications (e.g., n size for state, regional, or local board implementation).</li> </ul>	05/08-07/08	Employer sample plan	Completed <ul style="list-style-type: none"> <li>▶ 4/08 – Determination made to begin with employers identified as being aware that placed individuals received vet services.</li> <li>▶ 05/09 – Confirmed pool of 150+ employers statewide who have received TVC services to be surveyed. Diverse set of employers includes large, medium and small along with a mix of urban and rural.</li> </ul>
4 ✓	Obtain employer contact information.	08/08-05/09	Employer sample with required contact information	Completed 05/09 – Employer contact information confirmed.
5 ✓	Finalize and implement plan.	10/08-09/09	<ul style="list-style-type: none"> <li>▶ Roles, responsibilities and timelines identified for TVC state vs. regional staff</li> <li>▶ Standardized survey finalized and conducted</li> </ul>	Completed New implementation date 07/09-09/09: <ul style="list-style-type: none"> <li>▶ 07/09 – Survey conducted.</li> <li>▶ 08/09 – Nearly 150 employer responses received statewide.</li> </ul>
6 ✓	Review and analyze data.	10/09	Data analysis and report, if applicable	Completed
7 ✓	Assess the process and procedures, modifying the survey as considered necessary (e.g., sample size/stratification, longer time frame to allow for analysis vs. Employment Retention data).	06/10	Task list and timeline	Completed <ul style="list-style-type: none"> <li>▶ Input into step 9.</li> <li>▶ Electronic survey developed. [Completed 2011]</li> </ul>
8 ✓	Use data obtained to recognize opportunities for program improvement or best practices.	12/09-ongoing	<ul style="list-style-type: none"> <li>▶ Perform data analysis and establish benchmark</li> <li>▶ Deliver feedback to field staff</li> </ul>	In Progress <ul style="list-style-type: none"> <li>▶ Business Outreach Coordinator. [November 2009]</li> <li>▶ Veterans Business Representative initiative. [July 2011]</li> </ul>
9 ✓	Conduct annual employer survey and review results to determine employer satisfaction and target improvement. Strive to improve established benchmark set by historical surveys.	10/09-ongoing	Data analysis, report and adjust benchmark if necessary	In Progress Survey conducted and analysis completed annually.

## Evaluation of Employer Needs and Satisfaction Project [P5.4 – 2015 Review]

Accountable Participant:	Texas Youth Commission			
Target:	<i>Closed: Project modified and completed in 2011. NOTE: Senate Bill 653 (82<sup>nd</sup> Legislature) abolished the Texas Youth Commission (TYC) and the Texas Juvenile Probation Commission. Effective December 1, 2011, duties assigned to the two agencies were transferred to the newly created Texas Juvenile Justice Department (TJJD).</i>			
Goal(s): Utilize standardized questions to obtain employer satisfaction information related to PIE programs. Potential data uses might include, but are not limited to:				
<ul style="list-style-type: none"> <li>▶ program planning and management efforts;</li> <li>▶ resource in development of the agency's next biannual strategic plan; and</li> <li>▶ resource in preparation for future legislative sessions.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
1 ✓	Review federal PIE program Federal Assessment guidelines to assess the need for, desirability and feasibility of developing a small number (3-4) of standardized questions to measure employer feedback on program relevance, importance and satisfaction.	08/07	Guideline review	Completed Reviewed federal assessment and identified a place in the process for including Employer Survey questions. Obtained approval from state assessor and liaison to the National Correctional Industries Association about the appropriateness of including the survey.
2 ✓	Based on Task 1 outcome, assess and determine survey options: <ul style="list-style-type: none"> <li>▶ implementation timing (e.g., X months post-exit); and</li> <li>▶ staff/resource requirements.</li> </ul>	01/08	Task list and timeline	Completed Determined survey will be administered annually during the state assessment process. TYC staff will administer survey at the wrap up of the PIE program assessment as part of the exit. Survey will be an additional document to the PIE Program Assessment.
3 ✓	Draft and finalize survey questions.	02/08	Survey questions	Completed Survey finalized.
4 ✓	Implement modified survey.	03/08	Survey data	Completed State assessment date for TYC PIE programs rescheduled for June 20, 2008. Survey will be implemented at this time.
5 ✓	Review and analyze data.	04/08		Completed Due date modified to 7/08; task completed.
6 ✓	Utilize data as a resource for strategic plan development, in preparation for future legislative sessions and other purposes, as appropriate.	05/08-06/09		Completed Due date modified to 7/08-8/09; in progress.
7 ✓	Assess the desirability and feasibility of modifying and replicating the survey for use with other TYC-administered programs.	ongoing		Completed Determine the feasibility and value in developing surveys for WD field staffs and youth participants.
8 ✓	Develop a small standardized survey to measure Career & Technical Education teacher and student feedback on program relevance, importance and satisfaction.	03/09	Survey questions	Completed Completed development of surveys for CTE Teachers and students.
9 ✓	Develop a small standardized survey to measure employer feedback on reentry program relevance, importance and satisfaction.	06/09	Survey questions	Completed Survey for Reentry Employers Survey is underway for 6/09.
10 ✓	Submits surveys to Research Department for review and approval.	09/09		Completed
11 ✓	Based on approval for use of the surveys, hold field staff training at the Workforce Development/Reentry Conference in February, 2010.	02/10	Survey procedures	Completed Field staff participated in development of survey implementation process.

### Evaluation of Employer Needs and Satisfaction Project [P5.4 – 2015 Review]

Accountable Participant:		Texas Youth Commission		
Target:		Closed: Project modified and completed in 2011. NOTE: Senate Bill 653 (82 <sup>nd</sup> Legislature) abolished the Texas Youth Commission (TYC) and the Texas Juvenile Probation Commission. Effective December 1, 2011, duties assigned to the two agencies were transferred to the newly created Texas Juvenile Justice Department (TJJD).		
Goal(s): Utilize standardized questions to obtain employer satisfaction information related to PIE programs. Potential data uses might include, but are not limited to:				
<ul style="list-style-type: none"> <li>▶ program planning and management efforts;</li> <li>▶ resource in development of the agency's next biannual strategic plan; and</li> <li>▶ resource in preparation for future legislative sessions.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
12  ✓	Implementation of all surveys.	03/10-ongoing annually	Survey implementation	Completed Review survey results and determine appropriate satisfaction target(s). <ul style="list-style-type: none"> <li>▶ Pilot survey (paper-based) completed; small number of responses yielded overall positive results. [December 2010]</li> <li>▶ Change to electronic format with implementation of annual survey to larger employer sample planned for June 2011. Implementation on hold due to reduction in force impacting the agency.</li> <li>▶ Agency plans to continue implementation when budget and staff are available.</li> </ul>

## Evaluation of Employer Needs and Satisfaction Project [P5.5 – 2015 Review]

Accountable Participant:	Texas Department of Criminal Justice (TDCJ) – Windham School District (WSD)			
Target:	70% satisfaction level			
Goal(s): Develop post-placement evaluation tool(s) and implement with applicable employers. Potential data uses might include, but are not limited to: <ul style="list-style-type: none"> <li>▶ program planning and management efforts;</li> <li>▶ modification and replication for additional Windham-/TDCJ-administered programs;</li> <li>▶ resource in development of the agency's next biannual strategic plan; and</li> <li>▶ resource in preparation for future legislative sessions.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
1 ✓	Assess and determine appropriate option(s) (e.g., staff-administered survey/checklist for use in-person or by phone, written survey) for collecting data to measure employer feedback on program relevance, importance and satisfaction.	04/08		Completed A survey to measure employer satisfaction of training programs was drafted for use by unit level RIO staff and Workforce Coordinator either in person or by telephone.
2 ✓	Draft and finalize data collection tool(s).	05/08	Data collection tool(s)	Completed Draft document finalized and ready for appropriate staff usage.
3 ✓	Implement data collection efforts.	06/08-ongoing	Employer data	Completed Data collection started, utilizing written survey.
4 ✓	Review and analyze data.	07/08-ongoing	Collection of data	Completed Feedback from companies that have ex-offenders currently employed has been positive. Employers indicate the training received while incarcerated is appropriate and meets workplace needs.
5 ✓	Utilize data as a resource for strategic plan development, in preparation for future legislative sessions and other purposes, as appropriate.	08/08-ongoing	Review of data	Completed Data gathering continued although somewhat slowed due to economy and fewer employers attending career awareness days. Training program evaluation ongoing.
6 ✓	Document 'lessons learned' for future data collection efforts.	08/09	Review of final data	Completed Review of employer surveys indicates no changes for future collection efforts.
7 ✓	Assess the desirability and feasibility of modifying and replicating the survey for use with other Windham-/TDCJ-administered programs.	10/09	Review survey document	Completed TDCJ/WSD completed review; determined survey document acceptable.
8 ✓	Review and evaluate information gathered from employer groups to determine appropriateness of training provided to incarcerated offenders within TDCJ.	01/10	Identification of programs in need of redirection	Completed TDCJ/WSD completed evaluation; determined no programs in need of redirection.
9 ✓	Establish target for employer group's satisfaction with training programs available to incarcerated offenders within TDCJ.	04/10	Target is set at specific satisfaction level	Completed 70% target
10 ✓	Conduct annual survey and review survey results to determine employer satisfaction level of training programs.	08/10	Review data and report satisfaction measurement	Completed <ul style="list-style-type: none"> <li>▶ TDCJ/WSD conducted survey and completed analysis.</li> <li>▶ TDCJ/WSD developed plan to improve response rates.</li> </ul>



### Evaluation of Employer Needs and Satisfaction Project [P5.5 – 2015 Review]

Accountable Participant:	Texas Department of Criminal Justice (TDCJ) – Windham School District (WSD)			
Target:	70% satisfaction level			
<p>Goal(s): Develop post-placement evaluation tool(s) and implement with applicable employers. Potential data uses might include, but are not limited to:</p> <ul style="list-style-type: none"> <li>▶ program planning and management efforts;</li> <li>▶ modification and replication for additional Windham-/TDCJ-administered programs;</li> <li>▶ resource in development of the agency's next biannual strategic plan; and</li> <li>▶ resource in preparation for future legislative sessions.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
11 ✓	Conduct annual survey and review survey results to determine employer satisfaction level of training programs.	08/11	Review data and report satisfaction measurement	Completed ▶ TDCJ/WSD developed and administered electronic survey. ▶ TDCJ/WSD identified data issues.
12 ✓	Conduct annual survey and review survey results to determine employer satisfaction level of training programs.	08/12	Review data and report satisfaction measurement	Completed TDCJ/WSD developed alternative instrument and methodology.
13 ✓	Conduct annual survey and review survey results to determine employer satisfaction level of training programs.	08/13	Review data and report satisfaction measurement	Completed
14 ✓	Conduct annual survey and review survey results to determine employer satisfaction level of training programs.	08/14	Review data and report satisfaction measurement	Completed TDCJ/WSD continues to use survey data and data collected from local board and industry representatives to evaluate training programs for alignment with current employer demand and suitability for ex-offenders. Based on the review, program modifications may be made or new programs added.

<b>Action Plan ID:</b> P6	<b>Action Plan Owner:</b> SITAC	<b>Action Plan – 2015 Review</b>	<b>Updated:</b> 8/31/15	<b>Rev:</b> 2
<b>Action Plan Status:</b> FINAL	<b>Long Term Objective</b>			<b>Plan Type:</b> <b>System</b>
<b>Key Performance Area:</b> Programs, Products and Services	Partner agencies will use the employment data/outcomes of their programs to understand and improve those programs.			
<b>Accountable Participants:</b> Partner agencies	<small>Note: The work associated with this LTO is being carried over from <i>Destination 2010 FY2004-FY2009 Strategic Plan for the Texas Workforce Development System</i>. Some activities in the agency project plans that support this LTO reflect activities that began prior to September 1, 2009.</small>			
<b>Critical Business Issue:</b> Existing data gap regarding employers' needs and customer satisfaction hinders the ability to assess whether existing programs and services are adequately meeting customer requirements.	<b>Key Performance Measures</b> <ul style="list-style-type: none"> <li>Development and execution of a data-driven methodology to analyze data, and use of that analysis for program management purposes: namely, identification of best practices, areas for improvement, and opportunities to leverage existing practices and infrastructure.</li> </ul>			

Status	No.	Major Tasks/Milestones	Schedule		Dependencies	Tracking Measures, Interim Outputs & Recommended Reporting Schedule
			Start (mm/yy)	Completion (mm/yy)		
✓	1	Health and Human Services Commission - Department of Assistive and Rehabilitative Services (Blind and Rehabilitation Programs) Use of Data for Program Improvement Project.	prior to 09/2009	08/2015		Completed See related project plan attached to this action plan.
✓	2	Texas Veterans Commission (Veteran Employment Program) Use of Data for Program Improvement Project.	prior to 09/2009	08/2015		Completed See related project plan attached to this action plan.
✓	3	Windham School District, Texas Department of Criminal Justice, Use of Data for Program Improvement Project.	prior to 09/2009	08/2015		Completed See related project plan attached to this action plan.

## Use of Data for Program Improvement Project [P6.1 – 2015 Review]

Accountable Participant:	Health and Human Services Commission – Department of Assistive and Rehabilitative Services			
Target:	N/A			
<p>Goal(s): To improve DARS' services to businesses by evaluating the effectiveness of services provided. Evaluate the level of use by businesses of the services provided by DARS to determine whether DARS is meeting business needs for:</p> <ul style="list-style-type: none"> <li>▶ program planning and management; and</li> <li>▶ potential use as a resource in development of the agency's next biennial strategic plan.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
1 ✓	Determine the services DARS VR programs offer to businesses.	11/08	<ul style="list-style-type: none"> <li>▶ Inventory of Services</li> <li>▶ Glossary of Terms</li> </ul>	<p>Completed</p> <p>The Inventory of Services outlines services DBS and DRS VR programs offer to businesses. These services fall under four categories:</p> <ul style="list-style-type: none"> <li>▶ Outreach &amp; Education</li> <li>▶ Providing Qualified Candidates</li> <li>▶ Job Retention</li> <li>▶ Accommodations &amp; Technical Assistance</li> </ul>
2 ✓	Determine the parameters under which DARS VR programs offer these services to business.	01/09	<ul style="list-style-type: none"> <li>▶ Inventory of Services</li> </ul>	<p>Completed</p> <p>Most parameters are numerical – e.g., number of contacts, number of visits made to a given employer, or employers who hired more than one consumer. Surveys and feedback processes to provide information about employer satisfaction and perceptions of effectiveness.</p>
3 ✓	Determine the data required to evaluate the services provided to businesses by DARS and how data will be collected.	04/09	<ul style="list-style-type: none"> <li>▶ Online surveys</li> <li>▶ Needs assessment of data infrastructure</li> <li>▶ Processes illustrating how surveys would be administered and used</li> </ul>	<p>Completed</p> <p><b>Developed survey questions</b> stemming from and relating to:</p> <ul style="list-style-type: none"> <li>▶ The Services Inventory</li> <li>▶ <b>32<sup>nd</sup> IRI Foundational Principles and employer expectations (National Network)</b> – Questions shaped to assess how well principles and expectations are being met. Developed matrix between questions and what they tell us.</li> <li>▶ Feedback obtained from business focus groups interviewed July-August 2009.</li> </ul> <p><b>One survey will evaluate:</b></p> <ul style="list-style-type: none"> <li>▶ <b>Transactions</b> (short-term, immediate, available continuously, specific; <b>collected for each interaction or encounter</b>; all businesses could be surveyed).</li> <li>▶ <b>Relationships</b> (long-term, periodic, sample respondents, limited scope; <b>evaluate relationships over time</b>).</li> </ul> <p>Steps for August and September:</p> <ul style="list-style-type: none"> <li>▶ <b>Design survey</b> in web format.</li> <li>▶ Map out <b>survey logistics</b>: <ul style="list-style-type: none"> <li>- Survey processes, feedback loops, survey administration schedule, sample selection</li> <li>- Survey format(s) and layouts</li> <li>- How surveys would tie in with ongoing business (continuous improvement)</li> </ul> </li> <li>▶ Identify pilot survey audience.</li> <li>▶ Administer survey (mid-September).</li> </ul>
4 ✓	Complete system enhancements for data collection, if needed, and begin data collection.	09/09		Completed

Accountable Participant:	Health and Human Services Commission – Department of Assistive and Rehabilitative Services			
Target:	N/A			
<p>Goal(s): To improve DARS' services to businesses by evaluating the effectiveness of services provided. Evaluate the level of use by businesses of the services provided by DARS to determine whether DARS is meeting business needs for:</p> <ul style="list-style-type: none"> <li>▶ program planning and management; and</li> <li>▶ potential use as a resource in development of the agency's next biennial strategic plan.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
5 ✓	After data is collected, evaluate the level of DARS services provided. Determine appropriate level, and measure how well DARS meets that level. (This will incorporate entered employment, employment retention and trend analysis.)	09/10		Completed Business partners' level of satisfaction was very high for DARS' services (e.g., potential hire, job retention assistance, accommodations and technical assistance, diversity awareness or other presentations). Comments related to service improvements were included; however, no negative responses were received from respondents. [November 2011]
6 ✓	Report on results of evaluation making recommendations to improve DARS services to businesses.	08/31/15		Completed Based on employer feedback, DARS modified processes: <ul style="list-style-type: none"> <li>▶ DARS researches Diversity Policies and Practices for companies earlier in the business relationship. [Ongoing]</li> <li>▶ Business Relations Unit launched and successfully completed five "SWAT Immersions" with field units. The three-day sessions assist units with business relations strategy development and implementation, utilizing key data on businesses, labor demands, job ready consumers and market trends. [Completed 2011]</li> <li>▶ "SWAT Immersions" continued through FY 2014; replaced by regionally focused training and support in FY 2015. [Ongoing]</li> </ul>
7 ✓	Design and implement changes as necessary to the level of services to businesses.	ongoing		In Progress <ul style="list-style-type: none"> <li>▶ Purchased licenses for cloud based subscriptions for business relations management software and customized site for DARS' use. [November 2011]</li> <li>▶ Beta testing by key DARS' staff. [December 2011]</li> <li>▶ Entered business, contact and job information for larger business accounts. Issued licenses to additional staff; fully operational. [February 2012]</li> <li>▶ Employer satisfaction survey available through online employer portal. [June 2013]</li> <li>▶ Evaluate system expansion plans, considering: [FYs 2014–15] <ul style="list-style-type: none"> <li>– implementation of joint business relations strategy,</li> <li>– establishment of consolidated business relations team,</li> <li>– implementation of agency's Sunset recommendations, and</li> <li>– implementation of Workforce Innovation and Opportunity Act (PL 113-128).</li> </ul> </li> </ul>

## Use of Data for Program Improvement Project [P6.2 – 2015 Review]

Accountable Participant:	Texas Veterans Commission			
Target:	N/A			
<b>Goal(s):</b> Utilize Veterans E&T Entered Employment and Employment Retention data (board-level and aggregate) obtained from the Texas Workforce Commission (TWC) for: <ul style="list-style-type: none"> <li>▶ program planning, management and refinement efforts; and</li> <li>▶ identification of best practices.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
1 ✓	Review current TWC reports to determine if additional/modified reports are needed.	09/07	TWC data/report request, if applicable	Completed 7/09-Reviewed all Workforce Investment Streamlined Performance Reporting (WISPR) reports concerning veterans employment, determined additional monthly performance reports might be beneficial.
2 ✓	Where relevant, conduct trend analysis, taking into consideration criteria such as local area service structure (e.g., are vet services offered directly by Veterans Employment Staff, through the board's Business Services Unit or a combination).	01/08	Trend analysis checklist, including timeframe designation (i.e., monthly, quarterly, annually, one-time)	Completed <ul style="list-style-type: none"> <li>▶ 4/09-Completed trend analysis on close to 90 offices statewide.</li> <li>▶ 5/09-Evaluated selected service delivery models identified in trend analysis and made adjustments where appropriate.</li> </ul>
3 ✓	Utilize data: <ul style="list-style-type: none"> <li>- as input to planning; and</li> <li>- in conjunction with surveys for program improvement efforts.</li> </ul>	02/08	Standardized employer satisfaction survey	Completed <ul style="list-style-type: none"> <li>▶ 7/09-Survey conducted.</li> <li>▶ 8/09-Nearly 150 employer responses received statewide.</li> <li>▶ 8/09-TBD – Data analysis to identify best practices.</li> </ul>
4 ✓	Approach TWC regarding purchasing customized monthly performance reports	03/08	Custom monthly performance reports	Completed 8/09-Engaged TWC reporting official in discussion concerning feasibility and associated cost.
5 ✓	Communicate best practices information with appropriate state, regional and local staff to facilitate program improvement.	annually		In Progress Trend analysis data and reports.
6 ✓	Conduct trend analysis, analyze results and distribute results/information, as appropriate.	annually		In Progress Use as input to employer survey, as possible avenue to test or validate conclusions drawn from the data.
7 ✓	Utilize data as a resource for agency strategic plan development, in preparation for future legislative sessions and other purposes, as appropriate.	04/10-ongoing		In Progress Trend analysis utilized to: <ul style="list-style-type: none"> <li>▶ forecast staffing needs,</li> <li>▶ update Jobs for Veterans State Grant state application/plan (submitted to DOL's Veterans' Employment and Training Service), and</li> <li>▶ prepare for career fairs and hiring events.</li> </ul>

## Use of Data for Program Improvement Project [P6.3 – 2015 Review]

Accountable Participant:	Texas Department of Criminal Justice (TDCJ) – Windham School District (WSD)			
Target:	N/A			
Goal(s): Implement use of program evaluation tool(s) with local board and/or workforce center staff. Potential data uses might include, but are not limited to: <ul style="list-style-type: none"> <li>▶ program planning and management efforts;</li> <li>▶ modification and replication for additional Windham-/TDCJ-administered programs;</li> <li>▶ resource in development of the agency's next biannual strategic plan; and</li> <li>▶ resource in preparation for future legislative sessions.</li> </ul>				
No.	Task	Due Date	Deliverable(s)	Action(s) Taken
1 ✓	Review tool(s) currently used to collect data for assessing local board/center feedback related to training program relevance and quality, participant placement success and employer satisfaction.	03/08	Tool assessment	Completed Assessment instrument (survey) for data collection developed and tested in visits to several workforce boards/centers.
2 ✓	If applicable, revise and finalize data collection tool(s) (e.g., staff-administered survey/checklist for use in-person or by phone, written survey).	04/08	Data collection tool(s)	Completed Assessment instrument revised and finalized after visits to the Brazos Valley and Alamo Workforce boards/centers.
3 ✓	Implement data collection efforts.	04/08-ongoing	Local board/center staff data	In Progress As of July 31, 2009, all 28 boards/centers have been visited. Follow-up visits planned for some of the larger boards.
4 ✓	Review and analyze data.	05/08-ongoing	Collection of data	In Progress Visits to boards/centers reveals support for vast majority of Career and Technology Vocational training programs offered. Utilization of electronic data of offender demographics and achievements received from TDCJ also discussed with board/center staff.
5 ✓	Utilize data as a resource for strategic plan development, in preparation for future legislative sessions and other purposes, as appropriate.	06/08	Review of data	Completed Appropriateness of offender training programs reviewed with board/center staff. Staff analyzing data to determine if program redirections are needed. Boards with high demand occupations for ex-offenders have been identified and information shared with unit Project RIO staff.
6 ✓	Document 'lessons learned' for future data collection efforts.	08/09	Review of final data	Completed Data collection and board visits proved to be highly successful. No recommended changes for data collection tool.
7 ✓	Assess the desirability and feasibility of modifying and replicating the survey for use with other Windham-/TDCJ-administered programs.	10/09	Review survey document	Completed TDCJ/WSD completed review; determined survey document acceptable.
8 ✓	Review information gathered during workforce board visits to determine appropriateness of training provided to incarcerated offenders within TDCJ.	01/10	Identification of programs in need of redirection	Completed TDCJ/WSD completed review; determined no programs in need of redirection.
9 ✓	Assess feasibility of co-sponsoring training conference for local board staff and TDCJ/TDC Project RIO staff.	03/10	Feasibility assessment	Completed TDCJ/WSD completed assessment; determined not feasible due to budgetary constraints.
10 ✓	Assess data collected to assist (if warranted) with the 2010 agency strategic plan or legislative appropriation request.	06/10	Data review	Completed TDCJ/WSD analysis confirmed validity of current training offerings and the need for continuing annual evaluations.
11 ✓	Annually assess feasibility of and need for future board visits or contacts.	08/10-ongoing	Annual assessment	In Progress TDCJ/WSD continues to confirm validity of current training offerings and the need for continuing annual evaluations.

## DATA ADDENDUM TO EVALUATION 2014

This year, three agencies identified the need to submit corrected data for prior reporting cycle(s): the Texas Education Agency (TEA), the Texas Veterans Commission (TVC), and the Texas Workforce Commission (TWC). In addition, revised Less Formal measures data were requested from the Texas Higher Education Coordinating Board (THECB). Percentage point differences published in the **Report Card Series** for Change 2014–2015 and Cumulative 2009–2015, as well as all report narrative, reflect the revised data submitted by the agencies.

### Texas Education Agency Revised Data

The TEA reported that the revision was due to a calculation error.

Revised Formal measure data for the 2014 reporting cycle:

Program	Education Achieved	Rate
Secondary	304,258	92.60%

### Texas Higher Education Coordinating Board Agency Revised Data

This year, the Council requested that the THECB submit revised Less Formal measures data for the 2014 reporting cycle in order to have complete, final data set(s) for both measures. New data for the 2015 reporting cycle were not requested. Additional information is provided in the **Less Formal Measures** section.

Revised Less Formal measure data for the 2014 reporting cycle:

Program	Number Employed	Rate
Vocational ESL	41	59.42%

### Texas Veterans Commission Revised Data

The TVC reported that revisions were due to data updates following further data entry by local boards, clarifications in federal/state reporting specifications, or improvements in coding. The TWC provides data to the TVC for review and verification.

Revised Formal measures data for the 2014 reporting cycle:

Program	Number Employed	Rate	Retained Employment	Rate	Number Served
Veterans E&T	32,386	71.60%	31,801	84.75%	48,366

**Texas Workforce Commission Revised Data**

The TWC reported that revisions were due to data updates following further data entry by local boards, clarifications in federal/state reporting specifications, or improvements in coding.

Revised Formal measures data for the 2014 reporting cycle:

Program	Education Achieved	Rate	Number Employed	Rate	Retained Employment	Rate	Number Served
Adults WIA I	3,523	92.61%	15,121	80.20%	13,017	79.87%	29,113
Apprenticeship	-	-	-	-	-	-	4,291
Dislocated WIA I	2,690	94.62%	5,186	83.42%	4,799	89.57%	8,413
Employment Services	-	-	813,925	72.71%	772,517	83.08%	1,270,552
SCSEP	-	-	97	54.19%	-	-	1,193
Self-Sufficiency	-	-	-	-	-	-	189
Skills Development	-	-	-	-	18,144	95.90%	-
SNAP E&T	-	-	25,381	81.63%	17,155	87.50%	41,567
TANF Choices	-	-	25,028	82.63%	17,078	79.20%	40,998
Trade Adjustment	-	-	910	75.71%	-	-	3,863
Youth WIA I	2,727	67.43%	4,268	74.06%	2,812	73.08%	9,630

Revised supplemental data for Employer Customers Served for the 2014 reporting cycle:

Evaluation Cycle	Number Served
2014	84,146

Revised Formal – Unduplicated data for the 2014 reporting cycle:<sup>38</sup>

Evaluation Cycle	Education Achieved	Rate	Number Employed	Rate	Retained Employment	Rate	Number Served
2014	9,551	82.12%	823,876	72.71%	798,966	83.33%	1,315,514

<sup>38</sup> As noted in the **Report Card Series** section, the series is a useful tool to present overall system performance, but the data presented should be taken in context. The System report card contains aggregate data for all agencies' applicable programs by measure as noted on the Formal measure report cards. Due to known duplicates that cannot be removed from program-level data, adjustments are calculated annually at the System level, with unduplicated data footnoted as applicable. The data are not used to calculate or publish change rates.



## PROGRAM LEVERS – CONTRIBUTIONS TO TREND LINE CHANGES

The Council collects and disseminates performance data and funding information on 19 workforce programs, as well as five academic education programs at the secondary and postsecondary levels.<sup>39</sup> Information and data from these five programs assist in understanding the scope and effort of program delivery through high schools and community and technical colleges, and these entities' efforts to prepare students to transition to further education or enter the workforce.

As required by statute, the annual evaluation report presents data by program rather than by agency. It includes information on performance levels that vary significantly (+/-5%) from the prior year. Conversely, the longitudinal trend lines present a summary-level view of system performance based on data from up to 24 programs and services focused on education, workforce education, and workforce training for three participant groups: adults, adults with barriers, and youth. The 24 programs included in the report card series, along with the short titles used in the Council's annual evaluation report, are:

Programs in the Report Card Series	Short Title
Adult Education Workforce Investment Act II <sup>40</sup>	Adult Education
Adults Workforce Investment Act	Adults WIA I
Apprenticeship Chapter 133	Apprenticeship
Blind Services	Blind Services
Community and Technical College Academic	CTC Academic
Community and Technical College Technical	CTC Technical
Dislocated Workers Workforce Investment Act	Dislocated WIA I
Employment Services - Wagner Peyser	Employment Services
Perkins Secondary Career Technical Education	Secondary CTE
Postsecondary Community and Technical College Corrections <sup>41</sup>	Postsecondary CTC Corrections
Rehabilitation Services	Rehabilitation Services
Senior Community Service Employment Program	SCSEP
Secondary Education	Secondary
Secondary Academic Youth Corrections	Secondary Academic Corrections
Secondary Technical Youth Corrections	Secondary Technical Corrections
Secondary Academic Windham	Secondary Academic Windham
Secondary Technical Windham	Secondary Technical Windham
Self-Sufficiency Fund	Self-Sufficiency
Skills Development Fund	Skills Development
Supplemental Nutrition Assistance Program Employment and Training	SNAP E&T
Trade Adjustment Assistance	Trade Adjustment
Temporary Assistance for Needy Families Choices	TANF Choices
Veterans Employment and Training	Veterans E&T
Youth Workforce Investment Act	Youth WIA I

<sup>39</sup> Project Re-Integration of Offenders was not funded for the fiscal year (FY) 2012–13 or 2014–15 biennia. The Texas Workforce Commission (TWC) submitted available data for applicable measures through 2012. Data for this program are not included in trend information presented in the **Overview**.

<sup>40</sup> As required by Senate Bill (SB) 307 (83<sup>rd</sup> Legislature), administrative responsibility transferred from the Texas Education Agency (TEA) to the TWC, effective September 1, 2013.

<sup>41</sup> As required by SB 1 (83<sup>rd</sup> Legislature), administrative responsibility transferred from the Windham School District to the Texas Department of Criminal Justice's (TDCJ) Rehabilitation Programs Division, effective September 1, 2013.

This appendix provides additional general observations about the trend data 2004–2015 chart presented in the **Overview**, focusing on key changes (and year first reported) occurring over the 12-year period. It is based on information and data reported by partner agencies for the Council's annual evaluation reports in the referenced years.

Typically defined and treated as a lag measure, Customers Served may be used as a lead measure for system strategic planning given its tie to program infrastructure usage and capacity. This measure indicates the total number of individuals served by all system programs and services and fluctuates based on factors such as the state of the economy and available funding for each program. Educational achievement, entered employment, and employment retention are rate, or outcome, measures and the percentages reported for these measures are the weighted aggregate of multiple workforce programs. At the program level, these measures generally remain fairly consistent over time and are comparable within a reporting year and across reporting years.

### **Formal Measure: Customers Served**

*Number of employers and individuals who received system services, including program participation.*

The number served ranged from 4,581,652 (2005) to 5,383,850 (2010). Following economic recovery, Customers Served (as defined in the right sidebar) declined to 4,884,802 in 2014 before rising 1.58% to 4,962,054 this year. This measure is not affected by the reporting delays inherent in post-program measures, such as Entered Employment and Employment Retention. Therefore, the effects of the economic downturn that began prior to 2009 were most evident in the data reported in 2010. The beginning effects of the recession were evidenced by several programs in *Evaluation 2009*, with that trend continuing in 2010 and to a lesser degree in 2011.

In many cases, significant decreases in service levels reported in 2011 were due to the expiration of supplemental funding such as that provided under the American Recovery and Reinvestment (ARRA) of 2009 (Public Law 111-5). While some decreases are attributable to reduced federal or state funding levels, in large part the results since then reflected the improved economy. Notably, many reported decreases were for programs that typically have higher enrollment during adverse economic conditions (e.g., Dislocated WIA I, Trade Adjustment).

Examples of significant changes reported by agencies over the period include:

- ▶ *Adult Education*: The U.S. Department of Education implemented new assessment standards, reducing the number served (2009). FY 2013 and FY 2014 were transitional years for the programs as administrative responsibility transferred from the TEA to the TWC. For FY 2015, the TWC issued a request for proposals for service delivery and negotiated aggressive increases in the number of customers to be served. Performance rose 1.88% in 2015.
- ▶ *Adults WIA I and Dislocated WIA I*: The ARRA provided significant federal funds, leading to higher service levels. In mid-2009, the local boards received ARRA funds totaling nearly \$30 (Adults) and \$32 (Dislocated) million for the WIA I programs. The U.S. Department of Labor's (DOL) intent was that the majority of the ARRA funds be spent in the first year of availability. In 2013, uncertainty regarding the potential impact of federal sequestration led to reduced Adults WIA I enrollment and a focus on existing participants in most areas; however, increased enrollments by Gulf Coast provided a balancing effect.

The number served by Dislocated WIA I is closely tied to economic fluctuations; as the number of unemployment insurance (UI) claims drops, the number of program customers enrolled drops as well. After serving almost 20,000 individuals in 2010, the number served through Dislocated WIA I fell annually through 2014. The 2015 increase was attributed to implementation of a service delivery strategy, since modified, in a large workforce area.

- ▶ *Apprenticeship*: Increases were attributed to program rule changes that allowed counting all enrolled apprentices (effective FY 2006), acceptance of apprentices for longer periods (2008), and higher participation in new training programs (2014).
- ▶ *Blind Services*: Population growth contributed to rising participation (2014). The 2015 increase was attributed to a division goal to increase the number of eligible individuals served and the success of strategies employed in field offices to accomplish this goal.
- ▶ *Employment Services*: After posting recessionary highs in 2009 and 2010, the number has fallen annually. In general, the number served through this program rises when economic conditions are very positive or negative, and falls during periods of improvement.
- ▶ *Postsecondary CTC Corrections*: Service levels declined due to funding decreases. State funds were reduced from FY 2005 to FY 2006. A state-mandated 2.5% budget reduction applied for FY 2011, and state funding was further reduced for FY 2012. The TDCJ attributed the 2014 enrollment increase to the addition of a new vocational course and an additional location for academic courses.
- ▶ *Rehabilitation Services*: Decreases were attributed to efforts, recommended by the federal partner—the Rehabilitation Services Administration—to reduce caseload size for vocational rehabilitation counselors (2005).
- ▶ *SCSEP*: A new DOL goal emphasized increasing the number served by transitioning participants from subsidized to unsubsidized employment, then filling the subsidized slots with new participants. For FY 2010, the TWC received SCSEP funding under ARRA and DOL bonus funding made available through the Consolidated Appropriations Act, 2010.
- ▶ *Secondary Academic Corrections and Secondary Technical Corrections*: SB 103 (80th Legislature) required changes by the former Texas Youth Commission, including facility closings and lowering of maximum age from 21 to 19, that led to lower enrollments.
- ▶ *Self-Sufficiency*: A TWC policy change limited grants to those willing to exhaust the TANF Choices applicant pool (2009).
- ▶ *Secondary CTE*: The TEA indicated the higher number served may be due to increased student enrollment in CTE courses in order to meet the requirements for CTE endorsement options under the Foundation High School Program (2015).
- ▶ *Skills Development*: SB 1 (79th Legislature) appropriated \$20.5 million from funds generated by House Bill (HB) 2421 (79th Legislature). The legislature again increased appropriations for the FY 2010–11 biennium.
- ▶ *SNAP E&T (formerly Food Stamp E&T)*: In several years, the TWC reported the receipt of additional federal funds, which allowed local workforce boards to serve more participants.
- ▶ *TANF Choices*: HB 2292 (78th Legislature) mandated merger of human service agencies under the Health and Human Services Commission and implemented a pay-for-performance model that had a significant impact on reducing the number of TANF recipients. However, TANF reauthorization (Public Law 109-171, 2006) required services to additional individuals. The Choices program assists applicants, recipients, nonrecipient parents, and former recipients of TANF cash assistance to transition from welfare to work through participation in work-related activities, including job search, job readiness classes, basic skills training, education, vocational training, and support services. As expected, service levels declined as the economy improved post-recession.

- ▶ *Trade Adjustment:* The Trade Adjustment Act Amendments of 2009 that significantly expanded the types of layoffs eligible for trade certification expired February 14, 2011, contributing to lower enrollments. The number served is based on the number of qualifying layoffs affecting workers.
- ▶ *Veterans:* HB 1452 (81st Legislature) required priority of service and several positions were eliminated due to a lack of funding. New DOL Priority of Service guidelines (June 2010) shifted the Texas Veterans Commission's focus to those most difficult to serve, further contributing to lower service counts. Guidelines were further revised (April 2014), restricting the roles of disabled veterans' outreach program specialists and local veterans' employment representatives staff.
- ▶ *Youth WIA I:* Due to a change in DOL's vision, stand-alone summer youth programs were eliminated (2007). However, ARRA provided additional money for a summer youth program (2009).

### **Formal Measure: Educational Achievement**

The Educational Achievement rate was fairly stable over the 12-year period, with a high of 81.50% (2014). After posting the lowest rate of 74.41% in 2009, the rate rose annually through 2014, before declining slightly in 2015 to 81.33%. The absolute number of individuals achieving an education outcome (numerator) rose most years, with a high level of 504,073 in 2015. Significant numeric gains were posted in 2011 and 2012—partly due to more individuals seeking to upgrade training or acquire new skills during the recession.

*Number and percent of all program participants who obtain a degree or other credential of completion, or complete the level enrolled in either a training or educational program.*

In general, reasons noted for Customers Served changes are applicable for Educational Achievement (e.g., federal and state legislative changes, funding increases/decreases). Additional examples include:

- ▶ *Adult Education:* Key reasons for fluctuations over the period included: decreased federal funding (2006) led to fewer served despite a higher rate; increased number of participants at lower education levels, who tend to exit before achieving a reportable outcome (2011); and upcoming changes to the GED test series (2013) led to a higher rate. The conversion to the more rigorous 2014 GED was cited as a reason for declining performance (2015).
- ▶ *CTE Technical:* The increased demand for technical awards due to the economic recovery and the increased number of stackable certificate/awards due to the use of career pathways contributed to rising performance (2015).
- ▶ *Postsecondary CTC Corrections:* Due to budget uncertainties, enrollments were limited to students who could complete programs by August 31, 2011 (2011). In addition, state funding for college programming was reduced 42% (2012).
- ▶ *Secondary Academic Corrections:* The maximum age for new commitments changed from 21 to 19; however, corresponding program changes and increased focus on GED (2010) led to improved performance in subsequent years. The reduction in the overall population contributed to a decline at the end of the 12-year period.
- ▶ *Secondary Technical Corrections:* With some students working toward industry certifications, class sizes were reduced (2014). Challenges with staff recruitment and retention also contributed to declining performance over the period.
- ▶ *Secondary CTE:* A better understanding and implementation of Texas Assessment of Knowledge and Skills testing (2010) led to improved performance.

- ▶ *Youth WIA I*: Major changes were attributed to the federal vision to focus on out-of-school youth who are less likely to achieve an educational outcome (2006 decrease); state policy clarification to allow local boards to place participants in programs with employer-recognized, rather than only nationally recognized, certificates (2008 increase); and improvement in local boards' understanding of the credentials recognized and the data entry required for educational achievement (2014 increase).

### **Formal Measure: Entered Employment**

*Number and percent of all program participants who secure employment after exiting a program.*

The highest Entered Employment rate was posted in 2008 at 79.93%. After declining to the recession low of 67.74% (2011), the rate rose to 76.26% in 2015. The absolute number of individuals entering employment exceeded one million annually. For most programs, data reported in 2010 reflected participants exiting during the recession. Performance declines were expected to continue in 2011 and possibly 2012 given the delay in UI wage reporting. However, gains reported by many programs over the last four years reflected continued economic improvement.

In general, reasons noted for Customer Served changes are applicable for Entered Employment (e.g., federal and state legislative changes, funding increases/decreases), Rehabilitation Services' caseload decrease). In addition, the Youth WIA I program was aligned with the federal vision to focus on out-of-school youth who are more likely to seek employment (2007). However, as noted above, the ARRA Summer Employment initiative increased the number of youth served who did not intend to remain employed. Several programs (e.g., Skills Development, Self-Sufficiency, SCSEP) fluctuate year-to-year due in large part to their funding structure and the cyclical nature of grant- or slot-based program operations.

### **Formal Measure: Employment Retention**

*Number and percent of all program participants who retain employment at a specified point after exiting a program.*

The lowest Employment Retention rate was posted in 2010 at 79.21%. In all other years, the rate exceeded 80%, with a pre-recession high of 84.31% (2008). That level was almost reached in 2015 when the rate rose to 84.02%.

There is a significant delay in receiving and analyzing UI wage records for measuring retention. The programs have different reporting cycles, with some reported measures reflecting the effects of the economic recession later than others. Despite expectations of the recession being a more significant factor in 2011 and possibly in 2012, improved outcomes were reported for a majority of the programs, a trend that continued through 2015.

In general, reasons noted for Customers Served and Entered Employment changes are applicable for Employment Retention (e.g., federal and state legislative changes, funding increases/decreases, Rehabilitation Services' caseload decrease). In addition, the 2012 increase for Youth WIA I was attributed to a more traditional service mix, rather than prior year focus on summer employment.

**TWIC ACTION ITEM  
MEMORANDUM**

REF: AMD.twic.II4.120415

**TO** Council Members

**SUBJECT** Texas Skill Standards Guidelines and Standards

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**Introduction**

The Texas Workforce Investment Council (Council) will consider approval of prior actions by the Texas Skill Standards Board (TSSB) to meet its statutory charges, which were transferred to the Council by the 84<sup>th</sup> Texas Legislature. In particular, those actions include approval of a set of policy documents adopted by the TSSB to govern the Texas skill standards system: *Guidelines for the Development, Recognition, and Usage of Skill Standards* and *Guidelines for Texas Skill Standards Based Program Recognition* (previously titled *Guidelines for the Certification and Credentialing of Skill Attainment*). The Council is also being asked to approve all recognized skill standards previously recognized by the TSSB.

**Background**

The Council is subject to Texas Government Code, Chapter 325 (Texas Sunset Act), under which it would have been abolished September 1, 2015 unless continued by the 84<sup>th</sup> Texas Legislature. The legislature passed and the governor signed into law House Bill (HB) 1606, thereby amending Texas Government Code, Chapter 2308, which continued the Council for 12 more years, abolished the TSSB, and transferred the TSSB's functions to the Council, to be assumed on September 1, 2015.

**Attachments**

1. *Guidelines for the Development, Recognition, and Usage of Skills Standards*
2. *Guidelines for Texas Skill Standards Based Program Recognition*
3. List of current skill standards previously recognized by the TSSB

**Discussion**New Council Statutory Charge

As of September 1, 2015, HB 1606 transferred the statutory functions of the TSSB to the Council, and charged it with developing and maintaining the voluntary statewide system of industry-defined and industry-recognized skill standards established by the TSSB. The system encompasses major high-demand, high-wage, sub-baccalaureate skilled occupations. Maintaining the system includes the following four mandates:

- 1) validate and recognize nationally established skill standards to guide curriculum development, training, assessment, and certification of workforce skills;
- 2) convene industry groups to develop skill standards and certification procedures for industries and occupations in which standards have not been established or adopted and recognize the skill standards and certification procedures;
- 3) review the standards developed by other states and foreign countries and enter into agreements for mutual recognition of standards and credentials to enhance portability of skills; and
- 4) promote the use of standards and credentials among employers.

### Mandates in Practice: Texas Skill Standards System

To fulfill these statutory mandates, the TSSB developed the policies and procedures under which the Texas skill standards system has operated since 1999. These policies and procedures have not remained static; rather, they have been modified over time to meet the needs of stakeholders, business practices, and to create greater efficiencies. Given that participation in the skill standards system is voluntary, that no legislative funding was appropriated for the initiative, and that the legislative vision is national in scope, the TSSB chose to implement the mandates through existing institutions. This system infrastructure is composed of workforce and educational institutions, industry groups, and governmental entities in Texas, as well as in other states and at the national level.

As of September 1, 2015, the main entities that comprise the Texas skill standards system are the Council and two stakeholder partners. At the center of the system, the Council serves as the liaison between industry groups that develop skill standards and community and technical colleges that use the standards in their workforce education programs.

### TSSB Actions for Consideration

To meet its statutory charges, the TSSB adopted a set of policy documents to govern the Texas skill standards system. These policy documents have been revised, replacing the TSSB with the Council.

The first policy document, *Guidelines for the Development, Recognition, and Usage of Skill Standards*, provides guidance and requirements for industry groups interested in developing skill standards for recognition (See attachment 1). These guidelines cover the following topics:

- A brief description and history of the Texas skill standards system and the Council's role in the system.
- How to develop skill standards: both general requirements and a suggested step-by-step process.
- The submission and application requirements for recognition consideration by the Council, as well as the categories of recognition.
- The industry group's requirements to allow public access to the standards, to store the standards on the Texas skill standards website, and to maintain the standards to ensure their currency.
- The limited purposes for the usage of skill standards.

The second policy document, *Guidelines for Texas Skill Standards Based Program Recognition*, provides guidance and requirements for community and technical colleges that want to use skill standards in their workforce education programs (See attachment 2). These guidelines cover the following areas:

- A brief description of the Council's role in the Texas skill standards system.
- Skill standards usage in the broader context of other third-party assessment and credentialing systems that perform one or more of the three functions in the mandate—curriculum development, assessment, and certification.
- How to use skill standards to guide curriculum development, including translation of the skill standards elements into curriculum components.
- The policy to recognize community and technical colleges that use skill standards in their curriculum, including recognition criteria, and application and renewal requirements.

Finally, the current list of skill standards previously recognized by the TSSB, which is posted in the on-line repository on the Texas skill standards website, is presented at attachment 3. The standards can be viewed at [www.tssb.org/texas-skill-standards-repository](http://www.tssb.org/texas-skill-standards-repository). The list includes both recognized standards (developed and formatted in Texas with the seven required elements) and conditionally

recognized standards (endorsed by an industry or stakeholder group outside Texas, which have met Texas' development and validation process criteria).

### **Recommendations**

It is recommended that members approve:

- 1) The set of policy documents to govern the Texas skill standards system: *Guidelines for the Development, Recognition, and Usage of Skill Standards* and *Guidelines for Texas Skill Standards Based Program Recognition*.
- 2) The current skill standards previously recognized by the TSSB.



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# **Guidelines for the Development, Recognition and Usage of Skill Standards- Texas' Framework for Skill Standards**

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**Texas Workforce Investment Council Guidelines for the  
Development, Recognition and Usage of Skill Standards**

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## INTRODUCTION

The Texas Workforce Investment Council (TWIC) administers the Texas skill standards system. This document is a policy manual to provide common understanding and expectations among all relevant parties on:

- a) the historical and legislative context of skill standards development in Texas;
- b) the roles of the TWIC and of industry in the development and maintenance of the Texas skill standards system;
- c) the policies and process requirements for the development and recognition of skill standards; and
- d) the requirements for skill standards: content, elements and format.

### Background and Historical Context for a Texas Skill Standards System

Many initiatives led to the establishment of the Texas skill standards system. Texas' interest in the concept of a skill standards system began in 1991 with the introduction of legislation to establish the nonprofit Texas Skills Development Corporation. The purpose of the corporation was to "convene existing industry groups and industry associations to ascertain the skill requirements of occupations in the Texas work force." (Source: "Developing a System of Skill Standards and Certification for the Texas Work Force," Robert Glover, Center for the Study of Human Resources, LBJ School of Public Affairs, UT Austin, January 1993, p. 20 – project conducted under direction of the Director, Workforce Development Division, Texas Department of Commerce.) Although the bill was never enacted into law, the pursuit of a skill standards system continued.

In the following year, the Governor charged the Texas Department of Commerce with creating a skills development program to work with business and industry to establish employability standards. A panel of business, industry and labor representatives was convened and issued a 1993 report, entitled "Report to the Governor: Texas Skills Development Program." The report included recommendations for: setting standards for core (foundation and workplace) skills; marketing the benefits of skill standards and certification; establishing a state board of professional and technical standards to distribute industry-validated curricula and assessments; and instituting a system to measure and certify achievement of skills for students and incumbent workers.

Building on the recommendations from the Texas skills development program report, the tri-agency partnership of the Texas Higher Education Coordinating Board, the Texas Department of Commerce, and the Texas Education Agency took the lead to further research key elements of a skill standards and certification system by funding the Texas Skill Standards Research and Communications Project (TSSRCP) for 1995-1996. As part of its charge, the TSSRCP reviewed national and international literature on skill standards; surveyed Texas employers; conducted focus groups with educators and training providers; and met with skill standards officials in the United States, Canada and Mexico. In their final 1996 report, the TSSRCP identified strengths and weaknesses of national skill standards projects, and of systems in use in other states and countries. Their recommendations included: a skill standards system model, adoption of a common nomenclature and common format for skill standards.

In 1995, the 74<sup>th</sup> Texas Legislature established the Texas Skill Standards Board (TSSB) as part of the workforce development system under House Bill (HB) 1863. It was an advisory body to the governor and legislature on the development of a statewide system of industry-defined and industry-recognized skill standards for major skilled, sub-baccalaureate occupations that provide strong employment and

earnings opportunities. It was charged with four specific mandates. In 1999, the 75<sup>th</sup> Legislature amended those mandates with the passage of HB 3431.

In 2015, the 84<sup>th</sup> Texas Legislature abolished the TSSB and transferred its powers and duties (described above) to the TWIC. The TWIC, established by the Texas Legislature in 1993, has strategic planning and oversight of the Texas workforce system. It is composed of 19 members representing business, labor, education, community-based organizations, and five state agency partners.

### **Legislative Mandate**

The four specific legislative mandates assumed by the TWIC are:

- 1) validate and recognize nationally established skill standards to guide curriculum development, training, assessment, and certification of workforce skills;
- 2) convene industry groups to develop skill standards and certification procedures for industries and occupations in which standards have not been established or adopted and recognize the skill standards and certification procedures;
- 3) review standards developed by other states and nations and enter into agreements for mutual recognition of standards and credentials to enhance portability of skills; and
- 4) promote the use of standards and credentials among employers.

### **Role of the Texas Workforce Investment Council**

The TWIC does not develop skill standards. HB 1863 explicitly states that the skill standards are defined and recognized by industry.

The role of the TWIC is to facilitate and promote a statewide system of voluntary, industry-developed skill standards. As quality assurance agent, the TWIC establishes the criteria for validating nationally established standards, for developing standards in industries and occupations where no standards currently exist, and for reviewing and recognizing other states' and nations' standards. These criteria reflect the need for skill standards to be accessible to and usable by all stakeholders; specifically, to guide curriculum development, training, assessment and certification of workforce skills. A website repository provides employers, workers, learners, education and training providers, and other interested groups with access to the skill standards. The TWIC also plays a leadership role in convening industry groups to develop the skill standards and in promoting the use of standards among employers.

Creating a system of skill standards requires collaboration among all relevant, interested parties. This document is a primary vehicle to communicate with and establish common understanding among the various partners in workforce development. This document sets out the context in which skill standards are developed and requirements that must be considered by industry groups that intend to seek recognition for those skill standards.

## AN OVERVIEW

### Skill Standards

*Skill standards are performance specifications that identify the knowledge and competencies an individual needs to succeed in the workplace. Standards are defined by occupational areas and validated by representatives from the occupation. Standards include the functions, activities and performance criteria for an occupational area.*

Consistent with the mandate and objectives of the TWIC, the purpose of a Texas system of voluntary skill standards is to strengthen the ability of Texas' industry to be competitive in the global economy through the enhancement of workforce skills and organization capabilities. Skill standards provide a base for productivity improvements through enhanced entry-level and incumbent worker skills, and must support true strategic capabilities at the industry and enterprise levels. Skill standards should not only capture current critical work functions and activity skills, but also those work and worker characteristics that will enable enterprises to build competitive capabilities and strategic market placement through effective work practices.

### Purpose and Components of these Guidelines

The purpose of these guidelines is to articulate the policy, principles, and broad procedural requirements of the Texas system as they relate to skill standards development, recognition and usage. There are seven essential components of the *Guidelines* that are outlined in this document under the following section: Policies, processes, and related criteria. The components are:

*Component 1: Skill Standards Development Considerations* outlines considerations in the identification of occupations for the development of industry skill standards, and the principles, processes and requirements for recognition.

*Component 2: Skill Standards Development Actions* defines the nine essential actions required in the development of skill standards for recognition.

*Component 3: Submission for Recognition* details the procedural and supporting documentation requirements for submission.

*Component 4: Recognition* details the specific requirements for recognition and the possible outcomes of consideration for recognition.

*Component 5: Storage and Access* focuses on storage and access of recognized skill standards and notes pertinent details regarding an agreement by the development group for the storage of the skill standards.

*Component 6: Usage* notes issues for consideration by stakeholders interested in using recognized skill standards. A number of uses are discussed, and a caveat is noted regarding legal defensibility.

*Component 7: Review and Updating* discusses issues of skill standards currency and outlines the process and requirements for review and updating of recognized skill standards.

## POLICIES, PROCESSES, AND RELATED CRITERIA

### COMPONENT 1: Skill Standards Development Considerations

#### General Requirements for Skill Standards Development

The skill standards development process shall meet the following general criteria:

- **Fair process and inclusivity:** Any organization or person with a direct and material interest has a right to participate in the skill standards development and analysis process. Participation may not be conditional upon membership in any organization, nor unreasonably restricted on the basis of other requirements which may be deemed arbitrary.
- **Balance of interests:** Neither the skill standards development leadership group, called the industry technical advisory committee (ITAC), nor the subject matter experts (SME) shall be dominated by a single interest category. There should be a balance of interests that represent industry interests and organizations within the occupational area of the skill standards under development.
- **Consideration of views and objections in reaching consensus:** The ITAC should consider all views and objections and seek to reach resolution. This consideration and consensus is critical in assuring that the skill standards are acceptable and have support from industry stakeholders.

#### Job Analysis Methodology

This section sets out principles in relation to skill standards development processes and tools. It provides only an overview of a complex process. Successful skill standards development requires adherence to accepted job analysis methodologies to ensure procedural validity, and content validity and reliability. A work or job analyst must be engaged by the ITAC to conduct the occupational analysis and to synthesize and organize the raw data from that analysis to meet the specific recognition requirements (See job analyst definition in glossary at Appendix A).

*Job analysis is the systematic and analytic gathering, documenting, and analyzing of information about actions employees take in performing the tasks incumbent to their jobs. That is, analysis deals with information about job content, and job requirement, as well as the context of the entire work organization.*

- Wills, J. 1993. An Overview of Skill Standards Systems in Education and Industry (Vol. 1)

Job analysis methods or techniques are the formal procedures that work and job analysts follow to obtain specific information about the occupation under scrutiny. This process generates information that generally contains specifics on: critical job functions; activities or tasks; tools necessary to perform the job; conditions under which the job must be performed; knowledge and skills that the worker must possess to competently undertake the job functions; and indicators of successful performance.

There are a number of job analysis techniques that are suitable for gathering raw data that may then be organized as skill standards for possible recognition. Literature that documents comparative analyses of job analysis methods suggests there is no one best method. All have strengths, limitations and varying degrees of suitability. However, a number of job analysis procedures developed by researchers over the



past 40 years have been recognized as notable. Although the following list is not exhaustive, some of those methods include:

- Functional Job Analysis as developed by Sydney Fine;
- Critical Incident Technique as developed by John Flanders;
- Position Analysis Questionnaire as developed by Ernest McCormack & Associate at Purdue University;
- DACUM (Developing a Curriculum), including modified DACUM, as refined by Dr. R. Norton at Ohio State University; and
- Job-Task Inventory ((CODAP) and the Extended Search) as developed by Dr. R. Crystal for the U.S. Air Force.

The selected job analysis method must substantiate procedural and content validity and demonstrate formal structure, rigor, and job relatedness through the collection of work-oriented and worker-oriented data and related knowledge and skills. The chosen method must include the participation of SMEs in the generation and validation of data, and must not contravene any legal requirements.

### **Specific Job Analysis Requirements**

In addition to the general requirements previously noted, the following specific criteria will also be used in the evaluation of skill standards submitted for recognition. The resulting skill standards must meet the following criteria with regard to process and job analysis method:

- The job analysis process is procedurally valid in that it engages appropriate occupational SMEs, management, labor, job incumbents, licensing or certification agents if applicable, and other interested stakeholders in the development of the skill standards.
- The stakeholders engaged in the job analysis process are representative of the broad occupational base for which the skill standards are being developed with regard to organization size and geographic and demographic diversity.
- The analysis method uses a process that identifies both work- and worker-oriented information, and the delineation of a level of performance at which the worker is deemed to be competent by industry standards.
- The work-oriented elements of the skill standards resulting from the job analysis are subjected to a rigorous Texas industry-wide validation process to ensure content validity.
- The skill standards do not contravene any applicable federal, state or local statutes, including the Equal Employment Opportunity Act and the Americans with Disabilities Act. The skill standards shall reflect the critical functions that are occupation-related and consistent with business requirements.

## COMPONENT 2: Skill Standards Development Actions

### Nine Essential Actions in Skill Standards Development

There are nine essential actions to be undertaken in the development of Texas skill standards. These actions include a number of general and specific requirements in relation to skill standards development. These actions, if followed, will assist in the development of skill standards that are likely to meet the requirements of the TWIC for recognition. However the sequence of the actions, which are detailed below, is a general guideline only. For detailed procedures and criteria related to skill standards development for TWIC recognition, see *Developing Skill Standards - A User's Guide (A Guide for Texas Industry Groups Developing Skill Standards for Recognition by the Texas Workforce Investment Council)*.

#### Action 1: Identify the Occupation and Review Resources for Relevant Information

An essential first step in the development of skill standards is the decision of what occupation the development effort will focus on, and in what industry sector the occupation belongs. Further, a determination of what skill standards and skill standards information exist at the state and national levels is essential as it will provide both a base and a context for Texas development efforts. The primary consideration in this step is the determination of the target occupation for skill standards identification and development. Two fundamental principles in this determination are that the target occupation must: 1) be representative of a broad-based occupation, encompassing a number of Standard Occupational Classification (SOC) job titles and associated codes; and 2) have industry wide significance and contribute, or will contribute, significantly to the health of the Texas economy.

In determining the target occupation, a review of relevant occupational data is recommended. While anecdotal evidence may be useful in helping to identify an occupation, the use of quantifiable industry occupational and labor market data is strongly suggested. This review will assist partnerships in identifying occupations that might be considered priorities in the economic competitiveness of Texas given factors such as high growth, skill shortages and/or an emerging industrial base.

Texas skill standards are defined within 15 industry sectors. Those sectors, listed below, are based on the North American Industrial Classification System (or NAICS). Further definition for each sector may be found in the Glossary.

Industry sectors for skill standards classification:

1. Agriculture, forestry and fishing
2. Business and administrative services
3. Construction
4. Education and training
5. Finance and insurance
6. Health and human services
7. Manufacturing, installation and repair
8. Mining
9. Public administration, legal and protective services
10. Restaurants, lodging, hospitality and tourism, and amusement and recreation
11. Retail trade, wholesale trade, real estate and personal services

12. Scientific and technical services
13. Telecommunications, computers, arts and entertainment, and information
14. Transportation
15. Utilities and environmental and waste management

There are a number of sources of information, including occupational data and market indicators, which may assist in identification of the occupational area:

- Texas Workforce Commission data including: SOCRATES; labor market indicators such as current number of workers in occupation; projected growth; replacement jobs projected and total projected job openings; and wage/earning indicators;
- Market shifts identified by changes in Texas' gross state product;
- Broad industry consensus and recommendation;
- Other sources of data and empirical evidence;
- Other skill standards projects at either the state or national level; and
- State and/or local workforce development efforts.

### **Action 2: Convene the Industry Technical Advisory Committee**

The group charged with leadership of the skill standards development process is called the ITAC. The function of this group is to drive the skill standards development process through the provision of guidance, advice, and technical knowledge. The ITAC is the group that recommends the developed standards to the TWIC for recognition, and is responsible for updating the skill standards.

The ITAC is a critical component in the achievement of procedural validity required for skill standards recognition. The composition of this group is required to have industry as the majority voice, and should reflect the composition of employers in Texas within the industry/occupation by:

- size of company (as defined by numbers of employees);
- region (as defined by geographic location); and
- business diversity (as defined by primary business function).

Additionally, it is strongly suggested that where there is labor involvement within the occupation that there is representation on the ITAC. The same suggestion is applicable where there is a credentialing or licensing group/authority connected to an occupation under analysis. Further, there should be two education and training provider representatives, chosen if possible from those considered best-practice in the delivery of training for the occupation under analysis.

Examples of ways that an ITAC might be assembled, include:

- facilitated by an educational institution such as a community or technical college funded through a Texas Higher Education Coordinating Board Perkins leadership grant or local funds; and
- organized by a group of employers across an industry who are collaborating to increase the pool of qualified labor for their occupational area through skill standards development.

If an industry group is interested in developing skill standards for an occupation, it is strongly advised that the group contact the TWIC prior to convening an ITAC to determine whether or not any

skill standards development efforts are occurring, either in Texas or nationally. To minimize the possibility of duplication of effort, all ITACs are required to submit a notification of intent to develop skill standards (NOI) form.

### **Notification of intent to develop skill standards**

ITACs that convene to develop skill standards with the intention of submitting those standards for recognition, shall file a NOI form. It is advisable that the industry group notify the TWIC as soon as possible after convening, so that staff is aware of development efforts, and can therefore provide technical assistance and advice as needed. In the event that skill standards have been developed previously (defined for the purpose of this criteria as within the previous 36 months prior to the date of skill standards submission) by an industry group, and that group wishes to submit the skill standards for recognition, no notification of intent is required. The group may begin the submission process at the point of application for recognition. In this situation, all recognition criteria must still be met.

### **Action 3: Determine Existing Information Sources Pertinent to the Proposed Skill Standards Development Effort**

The gathering of information on existing skill standards in the target occupation and examples of best practice and high performance workplaces will provide a base of knowledge and understanding from which to commence a skill standards development effort. This information is critical in determining the array of job titles that may fit within the occupation under consideration. Additionally, existing information may assist in the preliminary identification of major areas of job responsibility and critical work functions. Some sources of existing occupational information include:

- military job analyses;
- research and other published job analyses;
- published job analysis comparative studies;
- national labor market databases;
- U.S. skill standards projects at either the state or national level;
- international job analyses or skill standards; and
- proprietary job analysis data from commercial providers.

Prior to completion of this action in the development process it is suggested that preliminary assumptions regarding the standards be generated. These assumptions may be used to assist in defining the following action to determine the plan, method of analysis and strategy for validation of the standards. Assumptions will be further defined prior to submittal of the standards and recorded on the assumptions related to the standard form.

## **Action 4: Determine the Project Plan, Method of Job Analysis and Strategy for Content Validation**

### **Project planning and method of job analysis**

In this critical planning phase, the ITAC shall determine the project plan, resource requirements, timelines for completion of tasks, and the specific project outcomes and products. Also at this time the job analysis method that will be used to generate the data from which the skill standards will be derived should be determined. The use of any particular job analysis method is neither recommended nor required. Regardless of the method used, the end result shall meet the criteria noted in the sections *Job Analysis Methodology* and *Specific Job Analysis Requirements*. This planning and subsequent documentation of the process is critical in demonstrating procedural validity and in assisting to establish content validity.

### **Strategy for content validation**

In selecting a strategy to validate skill standards content, consideration must be given to the method of validation and sampling strategy. Content validity may be established through focus groups, survey and/or other means, and should specifically focus on the work-oriented skill standards elements rather than the raw job analysis data. Whatever strategy is chosen, the population of respondents sampled must be representative of the occupation for which skill standards are being developed.

## **Action 5: Develop Work-Oriented Information**

The first round of data collection focuses on work-oriented information. Skill standards specify what a worker needs to know and do on the job, as well as the level of performance required to demonstrate competence in that knowledge and skill. Both work- and worker-oriented information are essential pieces of meaningful skill standards. The three skill standards elements of work-oriented information include:

- critical work functions,
- key activities, and
- performance criteria.

The inclusion of work content information is critical in the establishment of performance standards and the translation of skill standards into relevant training and education programs.

Work-related information and context require that the following issues be considered during the skill standards development phase.

### **Critical work functions and key activities - Criticality versus level of specificity:**

Critical work functions should be defined at a meaningful level that is representative of a major job function that is non-trivial and neither too large nor too small in its scope of work. Following this, the key activities that are associated with each critical work function should be units of work (task cluster rather than a list of specific tasks) that are necessary to perform the critical work function. Both critical work functions and key activities should include enough specific occupational work context to be meaningful for differentiation of skill sets and work content.

*As a general range, 10 to 15 critical work functions are usually sufficient to describe the key functions and duties associated with an occupation that relate to the achievement of the key purpose of the occupation. Within each critical work function, there are usually from three to six key activities necessary to perform that function. These ranges are provided as benchmarks rather than rules. National and international experience would suggest that a total of 30 to 90 key activities are generally of a sufficient number to allow the occupation to be described in significant breadth and depth.*

**Performance criteria** - Specific information:

To support these critical functions and key activities, performance criteria should clearly specify the type, quality, and level of output (demonstrable behavior or product) required to successfully perform each key activity of a critical work function. The goal of performance criteria is to provide benchmarks against which skills and knowledge can be meaningfully evaluated. Performance criteria should support the development of training curricula and assessment.

*Note: The fourth skill standards element, the worker-oriented occupational knowledge, skills and conditions, may also be collected during this round or during the second round of data collection, described below. The decision will be dependent upon the type of job task analysis methodology that is used.*

**Action 6: Develop Worker-Oriented Information**

The second round of data collection focuses on worker-oriented information. As previously noted, both work- and worker-oriented information are essential pieces of meaningful skill standards. While work-oriented information is critical in conveying the requirements of the job, worker-oriented information details the underlying academic and employability knowledge and skills, as well as the occupational context in which work is undertaken and the conditions under which performance will be judged as competent. Worker-oriented information is critical in conveying the skills and knowledge required for effective performance of critical work functions and related key activities. The three skill standard elements of worker-oriented information include:

- academic knowledge and skills;
- employability knowledge and skills; and
- occupational knowledge, skills and conditions.

**Academic knowledge and skills** - The knowledge and skills most usually associated with traditional subject areas, such as reading, writing, mathematics, science, etc., defined in terms and levels that are relevant to the world of work.

**Employability knowledge and skills** - The applied knowledge and skills required for effective performance across a range of occupations. These skills and knowledge are sometimes referred to as transferable or cross-functional skills and knowledge.

**Occupational knowledge, skills and conditions** - The technical or occupational-specific knowledge and skills required to carry out processes or procedures common and critical to the related key activity, and the conditions necessary to carry out the related key activity. Conditions include the tools, resources and equipment necessary to carry out the related key activity and its performance criteria. If not collected in concert with the work-oriented information, the occupational knowledge, skills and conditions should be generated during this second round of data collection.

The inclusion of worker-oriented information is critical in defining the whole universe of skills and knowledge required to successfully perform a critical work function and related key activities. This worker-oriented information assists in the construction of relevant training curricula and instruction methods. There are a number of commercial and public domain tools and taxonomies that define worker-oriented information by a predetermined set of skills, knowledge and abilities. All models seek to achieve the same outcome: identify skills, knowledge and abilities according to the taxonomy specified in the model. This does not mean that one model or taxonomy is more or less appropriate than another. However, there may be a need for translation and reconciliation of worker-oriented information based on the taxonomy used, and the required Texas skill standards elements, ratings and format.

### **Academic and employability knowledge and skills process**

While the work-oriented elements of the standards identify what needs to be done on the job, the worker-oriented elements define the knowledge and skills that someone must possess in order to fulfill the defined responsibilities. It is important to recognize that it is not possible to develop academic and employability knowledge and skills (AEKS) information until such time as the work-oriented (action 5) information has been collected and validated.

The Texas skill standards elements and format were designed to facilitate portability of credentials and transferability of individuals' skills, and thus promoting the linkage of state and national skill standards efforts. As part of the skill standards elements required for recognition, Texas adopted the common nomenclature and the AEKS endorsed by the National Skill Standards Board<sup>1</sup> (NSSB).

These *Guidelines* provide procedural requirements regarding the collection of AEKS data. The *Skill Scales Companion Guide* defines the seventeen (17) AEKS and associated rating scales to determine the levels required on the job. The ITAC will be provided with procedural requirements and the skill scales instrument prior to commencing the skill standards development process.

### **Action 7: Analyze, Synthesize, and Validate Data**

The job analysis process of determining work- and worker-oriented information does not result in skill standards. The raw data gathered in the job analysis process must be transformed into skill standards. Analysis, synthesis and organization of data occur at two points: first, after collection of work-oriented data and second, during the process of collecting worker-oriented data.

This step of the development process takes the raw data from the previous two steps and organizes it into a common skill standards framework. It is critical that all recognized skill standards use this framework in order to allow a systematic conversion of the standards into training and educational programs. This framework allows training and educational providers to easily convert the standards into curricula. Thus, this step is critical in making the data usable for stakeholders, and for the development of curricula and assessment instruments. In turn the curricula and assessment tools are the foundations for a system of certification and credentials.

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<sup>1</sup> The National Skill Standards Board (NSSB) no longer exists. However, skill standards recognized in Texas that were developed by the NSSB's voluntary partnerships are still valid. The AEKS and accompanying *Skill Scales Companion Guide* adopted for the Texas system were developed by the NSSB.

### Analyze and synthesize

Work-oriented information may be developed using a myriad of different approaches. The analysis and synthesis of work-oriented data focuses on interpreting and organizing the raw data gathered in the job analysis. If the raw data from the job analysis has not already been aggregated into meaningful units of work called key activities and organized into critical work functions, this is the step at which this analysis and synthesis occurs. The work-oriented data is then ready for validation and entering into the required format.

Worker-oriented information need not undergo a separate analysis and synthesis step. The required AEKS procedure and use of the accompanying *Skill Scales Companion Guide* ensures that worker-oriented information has been through analysis and synthesis during the data collection process.

### Validate work-oriented data

Work-oriented information must be validated in accordance with the job analysis strategy chosen. There are numerous approaches to data validation. However, at its most fundamental, validation is a process through which the ITAC provides confidence that the standards accurately represent the work described by the standards. The focus of this validation effort must be on content validity. Professional standards related to validation include the *Standards for Educational and Psychological Tests* (developed jointly by the American Psychological Association, the American Educational Research Association and the National Council on Measurement in Education) and the *Principles for the Validation and Use of Employee Selection Procedures* (developed by the Society for Industrial and Organizational Psychology).

Key considerations regarding validation include:

- The occupational scope of the skill standards, and
- The composition of the ITAC.

Procedural requirements related to work-oriented (round 1) and worker-oriented (round 2) data collection:

- Qualifications of the SMEs;
- The information being validated; and
- The process that will be implemented, including SME sampling.

### Action 8: Construct Statements of Assessment

The seventh and final skill standards element is the statement of assessment. A statement of assessment is the guide to appropriate strategies and tools to be used to assess the level of skill attainment in a critical work function.

A statement of assessment should be defined for each critical work function. The statement may be broad, or may recommend specific strategies and tools. It may include information regarding the relative importance of the critical work function, with associated key activities and performance criteria, in relation to other critical work functions in terms of time spent on the job (or in training) and weighted assessment. Where the skill standards contain occupational information from a cluster or hierarchy of jobs, the statement of assessment may also indicate which key activities should be assessed at various experience levels in the workplace. This provides industry the opportunity to



differentiate key activities at entry, intermediate and advanced experience levels. However, this differentiation is not a requirement, but is strongly suggested if the skill standards work- and worker-oriented information is at a level higher than entry level.

At the end of this final step in the development process, it is necessary to document any assumptions that are pertinent to the interpretation and/or use of the skill standards by stakeholders. These assumptions are to be recorded on the assumptions related to the standards form (see appendix D in the TWIC publication, *Developing Skill Standards: A User's Guide* located on the Texas skill standards website at: [www.tssb.org/publications-2](http://www.tssb.org/publications-2)). Assumptions should be clearly articulated, so that any individual not involved with the development effort is capable of following the logic associated with the decisions that were made to generate the standards. Additionally, this data is important to determine how the standards can be translated into education and training programs.

### **Action 9: Organize Data - Skill Standards: Elements and Format**

The job analysis data compiled during the development process, and subsequently analyzed and synthesized, must be organized under the seven elements that comprise skill standards. The seven elements that comprise skill standards are:

- critical work functions;
- key activities;
- performance criteria;
- academic knowledge and skills;
- employability knowledge and skills;
- occupational knowledge, skills and conditions; and
- statements of assessment.

During this organization step all work- and worker-oriented information is arranged into the skill standards elements in the required format. The primary purpose of this step is to ensure that the work-oriented information is organized and that it logically connects to the worker-oriented information.

Developers should use the Texas skill standards format template, available from TWIC staff, to organize the data in the required format.

### COMPONENT 3: Submission for Recognition

To be considered for recognition, the application for skill standards recognition shall meet the following submission requirements. All application forms indicated here are available on the Texas skill standards website at [www.tssb.org/applications](http://www.tssb.org/applications). These requirements may be considered an evaluation checklist for reviewers.

#### Submission Requirements:

1. **Notification of Intent to Develop Skill Standards -**

A copy of the ITAC's original NOI shall be included in the application package.

2. **Application for Recognition of Skill Standards -**

ITAC or other industry stakeholder groups requesting recognition shall complete and submit to the TWIC office an application packet. The application shall be submitted under the signature of the chair, indicating endorsement of the skill standards on behalf of the ITAC. The application packet consists of the documentation listed below.

- ***Skill standards*** - One electronic copy of the skill standards being considered for recognition. The electronic copy of the skill standards shall meet all recognition criteria, including elements and format. (See *Criteria for Recognition* section in these guidelines.)
- ***Rationale for selection of occupational area*** - Brief summary of the rationale for selection of the target occupational area, including: title and key purpose; list of related SOC job titles and codes; linkage to a Texas skill standards industry sector; and explanation of the occupational area's importance to the economic competitiveness of the State of Texas, supported by specific labor market data.
- ***Assumptions related to the standards*** - Any underlying assumptions determined by the ITAC to pertain across the skill standards statements for the specific occupational area.
- ***Composition of ITAC*** - A list of ITAC members and their affiliations with an explanation that the group is industry dominated and is representative of the composition of employers within the industry or occupational area by size of company, geographic location in the state, and business diversity, as indicated in the section, *Component 1: Skill Standards Development*.
- ***Description of skill standards development process*** - A description of the procedural steps undertaken to develop the skill standards, including the job analysis method used to generate the raw data, and the validation strategy used to ensure the resulting skill standards are valid and reliable.
- ***Review and update agreement*** - A statement of commitment from the ITAC to regularly review and, if necessary, update the skill standards and to submit any updates to the TWIC.
- ***Public access and storage*** - Consent that the skill standards will be posted in the public domain and will be available on the Texas skill standards website where they will be accessible to all interested parties and stakeholders.

### 3. **Agreement to Meet with TWIC Representative -**

A representative of the ITAC shall agree to be available, as needed, to meet with a representative of the TWIC prior to formal consideration of the submitted skill standards.

## **COMPONENT 4: Recognition**

Skill standards submitted for recognition by an ITAC or other industry stakeholder group as previously noted in this document will be evaluated on the basis of both the application packet and skill standards documentation submitted, in the context of the policies and principles stated in these guidelines. The following criteria will be considered in determining recognition:

### 1. **Development Process –**

The skill standards shall be formally defined and recognized by a representative group of employers and workers within an industry or occupation, using a procedurally valid development process, have content validity, and shall comply with all civil rights laws and other applicable statutes, as specified under the section titled, *Component 1: Skill Standards Development*.

### 2. **Skill Standards -**

The skill standards shall have information organized under the seven elements and be presented in the required format.

### 3. **Application for Recognition –**

The ITAC or other industry stakeholder group shall follow all the procedural and substantive requirements for submission of skill standards for recognition, as specified under *Component 3: Submission for Recognition*, including the application for recognition, which consists of the following documentation:

- Skill standards;
- Rationale for selection of occupational area;
- Assumptions related to the standards;
- Composition of ITAC;
- Description of skill standards development process;
- Public access and storage; and
- Review and update agreement

## **Categories of Recognition**

A category of recognition will be determined and awarded based on an assessment of how well the skill standards meet the recognition criteria. Recognition may be denied in the event that the skill standards do not meet all of the recognition criteria. Where there are specific deficiencies, TWIC staff will offer feedback on the skill standards and work with the ITAC or industry group to develop a plan to resubmit the skill standards that ensures all recognition criteria are met. There are two possible recognition outcomes of the skill standards assessment:

- **Recognized**

This recognition is awarded to skill standards that meet all criteria for recognition and have been submitted by a Texas industry group that provides evidence of a Texas-wide development and validation process.

- **Conditionally Recognized**

This recognition is awarded to skill standards submitted for recognition by an industry or stakeholder group that provides evidence of a rigorous development and validation process that took place somewhere other than in the state of Texas. Industry or stakeholder groups may include:

- a national industry group which is recognized by its constituent industry/business base;
- a U.S. state's skill standards recognition authority; and
- a foreign country's skill standards recognition authority.

## **COMPONENT 5: Storage and Access**

### **The Texas Skill Standards Repository**

All recognized skill standards are maintained in a website repository at [www.tssb.org/texas-skill-standards-repository](http://www.tssb.org/texas-skill-standards-repository). This website page provides interested stakeholders with access to and information on recognized skill standards. The ITACs that originated the skill standards also play a critical role in the maintenance of the standards. They agree that the recognized skill standards will be posted in the public domain on the website. The ITACs also agree to review, and update the standards as necessary, to ensure continued currency and relevance.

## **COMPONENT 6: Usage**

### **Training and Educational Purposes**

Skill standards recognized in Texas are an effective tool for industry to communicate their workforce requirements to education and training providers. The Texas Legislature intended the skill standards to “guide curriculum development, assessment, and certification of workforce skills.” The skill standards elements of work- and worker-oriented information, including performance specifications, provide community and technical colleges and other training providers with industry skill requirements for the development of both curricula and assessments in workforce education programs.

Usage focuses on the translation of recognized skill standards into skill-based training and education programs (See the companion guide to this document, the *Guidelines for Texas Skill Standards Based Program Recognition*, for more detailed information and suggestions for developing curricula based on skill standards). The role of the TWIC is to bridge the gap between industry skill standards and their usage by education and training providers to prepare students and trainees for the workforce. Within Texas’ voluntary skill standards system, the TWIC has no authority to compel education and training providers to use the standards. Rather, its charge is to promote the use of standards and credentials among employers. The role of industry, in turn, is to communicate with training and education providers and to express the need for the use of the recognized skill standards in the curriculum development process. Additionally, the hiring of graduates by industry will act as a market mechanism to leverage education and training providers to utilize skill standards in program development.

### **Broad versus Enterprise Specific Uses**

The recognition of skill standards is predicated on the supposition that the skill standards have broad applicability and relevance across a Texas occupation. For this reason, it may not be applicable or desirable to use recognized skill standards at the individual enterprise or company level for any purpose other than education and training.

### **Legal Defensibility Issues**

While skill standards have a multiplicity of uses, there are legal considerations and limitations to those uses. In the event that an enterprise, business or corporation desires to use recognized skill standards for any reason other than an education and training purpose, it is imperative that the skill standards be internally validated by the company through rigorous and documented validation processes. The TWIC recognized skill standards may serve as the basis for company skill standards, but the standards must be deemed to be internally valid and reliable by a particular company prior to use in employee selection, promotion or other processes.

The skill standards, including critical work functions, key activities and performance criteria, must not contravene any applicable federal, state or local statutes, including the Equal Employment Opportunity Act and the Americans with Disabilities Act. The skill standards must reflect actual work requirements and be consistent with business requirements.

### **Caveat**

The TWIC does not recommend or endorse the use of skill standards for purposes other than education, training and related career information.

## **COMPONENT 7: Review and Updating**

### **Skill Standards Currency**

Skill standards may become obsolete over time due to changes in the skills required in an occupation as technology and business requirements change. As industry and occupations change substantially, so must skill standards. The more change an industry or occupation experiences, the more often skill standards will need to be reviewed and updated to ensure that they reflect industry requirements.

As a general rule, skill standards should be reviewed and updated every three to five years. Industries and occupations that experience rapid change may need to review and update their standards on a more frequent basis. All recognized skill standards must be reviewed and updated by an industry advisory group when there are substantive changes to the work-oriented information.

The application package requesting skill standards recognition contains a statement of agreement to review, and as necessary update, the skill standards and submit any updates to the TWIC. The statement of agreement must be signed, on behalf of the ITAC or industry group, by its chair.

### **Processes for Keeping Skill Standards Current**

Where the ITAC review reveals that there has been sufficient change in the critical work functions, key activities and/or performance criteria of the occupation to warrant a revision of the skill standards, the revised skill standards must be validated by industry and submitted to the TWIC in compliance with all submission and recognition requirements.

Skill standards may be amended at any time when the occupational skills, knowledge, and conditions (skills, tools, resources and equipment necessary to carry out the key activities and their related performance criteria) change but not the actual work performed (the critical work functions, key activities and performance criteria).

The submission of amended skill standards for recognition must be accompanied by an application package noting that the submission is an amendment. In the section *Assumptions Related to the Standards* the specific points of change within the standards must be noted by the key activity number. In no instance should any other change be made to the standards other than in the *Occupational Skills, Knowledge, and Conditions* elements.

In the event that a quorum of the original ITAC membership is unable to re-convene for this purpose, another industry partnership may convene for the purposes of skill standards amendment or review and update.

## Appendix A

### GLOSSARY

**Academic knowledge and skills** - The knowledge and skills most usually associated with traditional subject areas, such as reading, writing, mathematics, science, etc., defined in terms and levels that are relevant to the world of work.

**Academic knowledge and skills nomenclature** (used by permission from the National Skill Standards Board):

**Mathematics** - Understand, interpret, and manipulate numeric or symbolic information; solve problems by selecting and applying appropriate quantitative methods, such as arithmetic, quantitative reasoning, estimation, measurement, probability, statistics, algebra, geometry, and trigonometry.

**Reading** - Understand and make use of written information that may be presented in a variety of formats, such as text, tables, lists, figures, and diagrams; and select reading strategies appropriate to the purpose such as skimming for highlights, reading for detail, reading for meaning, and critical analysis.

**Science** - Understand and apply the basic principles of the physical, chemical, biological, and behavioral sciences; understand and apply the scientific method, including formulating and stating hypotheses and evaluating them by experimentation or observation.

**Writing** - Express ideas and information in written form clearly, succinctly, accurately, and in an organized manner; use English language conventions of spelling, punctuation, grammar, and sentence and paragraph structure; and tailor written communication to the intended purpose and audience.

**Assessment** - A process of gathering information to meet a broad range of evaluation needs. Specifically, in relation to skill standards, assessment is the process used to evaluate performance to determine whether it meets the level of competence specified in the skill standards. Assessment instruments to measure competency can include paper-and-pencil or computer-administered tests, simulations, demonstrations, assessment centers, work samples, portfolios, interviews, and others.

**Benchmark** - Something that serves as a standard against which to aim and against which to be measured. In the context of these guidelines, the term “high-performance benchmarks” refers to establishing skill standards that reflect standards of performance required in high-performance workplaces.

**Certification** - The process by which a non-governmental agency, association or industry group grants recognition of competence to an individual who has met predetermined qualifications or performance standards specified by the agency, association or industry group.

**Competency** - A major skill or ability needed to perform effectively and efficiently in the workplace.

**Content validity** - Content validity refers to the extent to which the data derived from the job analysis

process accurately reflects and is representative of the actual requirements of the job or occupation. Content validity is established through a formal validation strategy using the sampling of incumbent workers' feedback by one or more different means.

**Credentialing** - The process by which an accredited institution or association grants recognition of technical competence. The credentialing process may require registration, certification, licensure, or professional association membership. The official document that serves as evidence of this process is often referred to as a credential. (Often used synonymously with certification.)

**Critical work functions** - The principal responsibilities that must be performed by workers to meet the key purpose of the occupational area. These units of work are significant and non-trivial. As a general guide, an occupation may be described using no more than 10 to 15 critical work functions.

**Employability knowledge and skills** - The applied skills and knowledge required for effective performance across a range of occupations. These skills and knowledge are sometimes referred to as transferable or cross-functional skills and knowledge.

**Employability knowledge and skills nomenclature** (used by permission from the National Skill Standards Board):

**Adaptability** - Change one's own behavior or work methods to adjust to other people or to changing situations or work demands; be receptive to new information, ideas, or strategies to achieve goals.

**Analyzing and solving problems** - Anticipate or identify problems and their causes; develop and analyze potential solutions or improvements using rational/logical processes or innovative and creative approaches when needed.

**Building consensus** - Build consensus among individuals or groups by: facilitating agreements that involve sharing or exchanging resources or resolving differences in such a way as to promote mutual goals and interests; persuading others to change their point of view or behavior without losing their future support; and resolving conflicts, confrontations, and disagreements while maintaining productive working relationships.

**Gathering and analyzing information** - Obtain facts, information, or data relevant to a particular problem, question, or issue through observation of events or situations, discussion with others, research, or retrieval from written or electronic sources; organize, integrate, analyze, and evaluate information.

**Leading others** - Motivate, inspire and influence others toward effective individual or team work performance, goal attainment, and personal learning and development by serving as a mentor, coach, and role model, and by providing feedback and recognition/rewards.

**Listening** - Attend to, receive, and correctly interpret verbal communications and directions through cues such as the content and context of the message and the tone and "body language" of the speaker.

**Making decisions and judgments** - Make decisions that consider relevant facts and information, potential risks and benefits, and short- and long-term consequences of alternatives.



**Organizing and planning** - Organize and structure work for effective performance and goal attainment; set and balance priorities; anticipate obstacles; formulate plans consistent with available human, financial, and physical resources; and modify plans or adjust priorities given changing goals or conditions.

**Self and career development** - Identify own work and career interests, strengths, and limitations, and pursue education, training, feedback, or other opportunities for learning and development; manage, direct, and monitor one's own learning and development.

**Speaking** - Express ideas and facts orally in a clear and understandable manner that sustains listener attention and interest; tailor oral communication to the intended purpose and audience.

**Using information and communications technology** - Select, access, and use necessary information, data, and communications-related technologies, such as basic personal computer applications, telecommunications equipment, Internet, electronic calculators, voice mail, electronic mail, facsimile, and copying equipment, to accomplish work activities.

**Using social skills** - Interact with others in ways that are friendly, courteous, and tactful, and that demonstrate respect for individual and cultural differences, and for the attitudes and feelings of others.

**Working in teams** - Work cooperatively and collaboratively with others to achieve goals by sharing or integrating ideas, knowledge, skills, information, support, resources, responsibility, and recognition.

**Incumbent worker** - A worker who currently occupies or performs a job that is encompassed within the occupational area being analyzed for skill standards development.

**Industry sectors** - Broad groupings of industries which, taken together, constitute the entire scope of economic effort and employment in the state of Texas. The following 15 industry sectors, used to categorize skill standards occupational areas, are based on the North American Industrial Classification System (NAICS).

**Agriculture, forestry, and fishing** - Crop production; animal production; veterinary services; forestry and logging; fishing, hunting, and trapping; landscaping.

**Business and administrative services** - Human resources; employment services (including personnel supply, employment placement and leasing); management consulting services; marketing research and public opinion polling; services to buildings and facilities support services; accounting, tax preparation, bookkeeping and payroll services; administrative and support services (including secretarial, telephone, mailing, etc.); other business services (including event planning, etc.).

**Construction** - Building, developing, and general contracting (including residential and nonresidential); heavy construction (including highways, bridges, tunnels, pipelines, industrial non-building construction, etc.); special trade contractors (including plumbing, heating, air conditioning, electricians, carpenters, painting, roofing, etc.).

**Education and training** - Child care and preschool; elementary education; secondary education;

postsecondary education; job training, vocational rehabilitation.

**Finance and insurance** - Credit intermediation (including banking, savings and credit union institutions, credit cards and sales, financing, consumer lending, mortgage and loan brokering, trade financing, secondary market financing, etc.); securities, commodity contracts, and related activities; credit bureaus and collection agencies; insurance and employee benefit funds (including pension funds); funds, trusts, and related activities; public finance; administration of government economic programs.

**Health and human services** - Ambulatory health care services; hospitals; nursing and residential care facilities; human services and social assistance (including elderly and disabled services, children and youth services, community and housing, emergency relief, etc.); administration of government human services programs.

**Manufacturing, installation and repair** - Food and beverages; textiles, textile products, apparel, and leather; furniture; wood and paper; printing; petroleum and coal products; chemicals; plastics and rubber products; non-metallic minerals, including glass, concrete, etc.; primary and fabricated metals; machinery; computers and electronics products; electrical equipment and appliances; transportation equipment; installation, repair, and contract maintenance.

**Mining** - Oil and gas extraction; other mining.

**Public administration, legal and protective services** - Executive, legislative and general government administration (federal, state, and local); legal services; justice, public order, and safety programs (federal, state, and local); investigation and security services (including security guards and private investigators).

**Restaurants, lodging, hospitality and tourism, and amusement and recreation** - Restaurants and drinking places; hotels and motels; travel services; tourism services (including sightseeing transportation); amusement and recreation.

**Retail trade, wholesale trade, real estate and personal services** - Retail trade except restaurants; non-store retailing; wholesale trade; rental and leasing services; real estate; personal services (including beauticians, laundry, and private household services).

**Scientific and technical services** - Scientific research and development services; architectural, engineering and related services; administration of government housing, urban planning, and community development programs; space programs; national security and international affairs.

**Telecommunications, computers, arts and entertainment, and information** - Telecommunications; computers and computer services; motion pictures and sound recording; TV and radio broadcasting; arts and entertainment; specialized design services; photographic services; advertising; publishing; information services, including news services and libraries.

**Transportation** - Air, rail, water, trucking, transit and ground passenger; pipelines; transportation support activities; postal service; couriers and messengers.

**Utilities and environmental and waste management** - Electric power; natural gas distribution;

water, sewage, and other systems; waste management and remediation, environmental consulting services; administration of government environmental quality programs.

**Industry technical advisory committee (ITAC)** - Technical term used by the TWIC to refer to the industry group responsible for oversight of the skill standards development process. The functions of this group are: to provide guidance, advice, and technical knowledge; to recommend the developed standards for recognition; and to review and update the skill standards.

**Job analysis** - The systematic gathering, documenting, and analyzing of information about actions employees take in performing the tasks incumbent to their jobs. Analysis deals with information about job content, and job requirement, as well as the context of the entire work organization.

**Job or work analyst** - An individual trained in, and experienced and skilled at, conducting job/work analysis by accepted methodologies.

**Key activities** - The major duties (or clusters of tasks) that must be performed by workers to accomplish each critical work function. As a general guide, each critical work function may be described using no more than 3 to 6 key activities.

**Key purpose** - A statement summarizing the essential work-related goal of an occupational area.

**Occupational area** - Clusters of related jobs across an industry or industries. The occupational area must be stated as part of the skill standards application package, along with examples of job titles which are encompassed within the occupational area.

**Occupational skills, knowledge and conditions** - The technical or occupational specific skills and knowledge required to carry out processes or procedures common and critical to the related key activity, and the conditions necessary to carry out the related key activity. Conditions include the tools, resources and equipment necessary to carry out the related key activity and its performance criteria.

**Performance criteria** - Criteria that describe when each key activity has been performed to the level required for workplace success. Performance criteria clearly identify the type, quality and level of output required (standards) to perform the key activities. The focus of performance criteria is on demonstration of the key activity and the outputs and/or outcomes of that behavior.

**Procedural validity** - In the context of these guidelines, procedural validity refers to the degree to which the skill standards development process, including the job analysis, adheres to the development requirements and that the constitution of the ITAC is representative and inclusive of the employers and stakeholders in the occupational area as required. Procedural validity is demonstrated through the formal documentation of the skill standards development process steps.

**Reliability** - In the context of these guidelines, reliability refers to the extent to which the data gathered during the job analysis process is consistent across the occupation including locations, businesses, workers, etc.

**Skill attainment** - The mastering of competencies required to successfully perform in the world of work.

**Skill standards** - Performance specifications that identify the knowledge and competencies an individual needs to succeed in the workplace. Standards are defined by occupational areas and validated by

representatives from the occupation. Standards include the functions, activities and performance criteria for an occupational area.

**Stakeholders** - Generically, the groups or individuals who have a vested interest in, or are in some manner affected by, a system, process, plan, product or service.

**Standard occupational classification (SOC) code** - The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. All workers are classified into one of hundreds of occupations according to their occupational definition. To facilitate classification, occupations are combined to form major groups, minor groups, and broad occupations. Each broad occupation includes detailed occupation(s) requiring similar job duties, skills, education, or experience.

**Subject matter expert (SME)** - A worker who is actually performing in a job that is encompassed within the occupational area being analyzed. These workers are considered to be “experts” in identifying the work- and worker-oriented information and related knowledge and skills of the occupational area because of their direct, “hands-on” experience. Subject matter experts generate and validate the work- and worker-oriented data in the skill standards development process, regardless of the job analysis method used.

**Taxonomy** - Classification; in relation to skill standards, an orderly classification of skills and knowledge that varies according to the model/tool used to organize worker-oriented information.

**Work-oriented information** - Information that describes work by the characteristics of the work to be done, encompassing the essential characteristics of critical work functions, key activities and performance criteria. Products or services produced are included in work-oriented information.

**Worker-oriented information** - Information that describes work by the worker characteristics or attributes associated with effective performance of the work, encompassing such characteristics as worker skills, knowledge, and abilities.

**Appendix B**

**SKILL STANDARD EXAMPLE**

<b>Occupational Title: Fuel Cell Systems Technician</b>			
<b>Critical Work Function</b>		<b>Occupational Skills, Knowledge &amp; Conditions</b>	
<b>1. Commission and start up fuel cells</b>			
<b>Key Activity</b>	<b>Performance Criteria</b> <i>How do we know when the key activity is performed well or performed successfully?</i>	<b>Occupational Skills &amp; Knowledge</b>	<b>Conditions</b>
1.2 Install upgrades / retrofits as required	1.2.1 Pertinent upgrades are installed according to manufacturer specification  1.2.2 Upgrades perform according to manufacturer specification  1.2.3 Site log is current and up to date	Ability to read schematics, blueprints, etc. Electrical systems, symbols, and terminology Three-phase power theory Single- and polyphase power distribution Instrumentation basics Mechanical systems Motor control circuits Programmable logic controllers FC electrical and safety codes & standards Electronics Application specific safety procedures Basic power system coordination Circuit interrupting systems Quality control Testing and measuring procedures Safety training	Office computer application software Unit controller software Power and hand tools Tubing bender Safety equipment Personal protective equipment Cell phone Personal technical library

<b>Occupational Title: Fuel Cell Systems Technician</b>																
<b>CWF 1 Commission and start up fuel cells</b>																
Listening	Speaking	Using Information and Communication Technology	Gathering and analyzing Information	Analyzing and Solving Problems	Making Decisions and Judgments	Organizing and Planning	Using Social Skills	Adaptability	Working in Teams	Leading Others	Building Consensus	Self and Career Development	Writing	Reading	Mathematics	Science
3	2	3	3	4	4	4	2	3	3	3	3	3	2	2	3	3

**Statement of Assessment for Critical Work Function 1: Commission and start up fuel cells**

A. Tests could include:

- 1) Multiple choice and essay questions that demonstrate an understanding of knowledge being assessed.
- 2) Preparation and justification of a reasonable solution to a problem scenario.

B. Hands-on exercises or simulations to demonstrate acquisition of knowledge and skills that could:

- 1) Apply relevant knowledge or skills
- 2) Focus on the application of knowledge and skills to a new situation
- 3) Demonstrate an ability to plan, organize, and create a product, service, or an event.

## **Guidelines for Texas Skill Standards Based Program Recognition**

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**Texas Workforce Investment Council  
Guidelines for Texas Skill Standards Based Program Recognition**



## **PREFACE**

### **About These Guidelines**

*Guidelines for Texas Skill Standards Based Program Recognition* is designed for community and technical colleges interested in using skill standards in their workforce education programs. These *Guidelines* provide policies and guidance regarding the usage of skill standards in Texas for curriculum development, assessment and certification of workforce skills. The use of skill standards is not endorsed for purposes other than education, training and career information.

Using skill standards as a starting point to derive a credential that specifies to an employer what skills and knowledge an individual has attained involves a three-step process: 1) translating skill standards into curriculum; 2) assessing individuals' knowledge and skill level acquisition; and 3) documenting that skill attainment. These *Guidelines* do not prescribe a particular way to accomplish this objective; rather, this document presents options and references for conducting this process.

### **About the Texas Workforce Investment Council**

*Guidelines for Texas Skill Standards Based Program Recognition* is published by the Texas Workforce Investment Council (TWIC). The TWIC was established by the Texas Legislature in 1993 to assist the governor and the legislature with strategic planning for and evaluation of the Texas workforce system. It is composed of 19 members representing business, labor, education, community-based organizations, and five state agency partners. In 2015, the Texas Skill Standards Board was abolished and its powers and duties assigned to the TWIC. The TWIC was assigned with maintaining a statewide system of industry-defined and industry-recognized skill standards for sub-baccalaureate occupations with strong employment and earnings opportunities. The ultimate goal of the Texas skill standards system is to assist the growth of the Texas economy through the recognition of skill standards and skill attainment to support workforce development efforts.

### **To Reach the TWIC**

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**Texas Workforce Investment Council  
Guidelines for Texas Skill Standards Based Program Recognition**

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## INTRODUCTION

The Texas Workforce Investment Council (TWIC) assists the governor and the legislature with strategic planning for and evaluation of the Texas workforce system. In 2015, the Texas Skill Standards Board was abolished and its duty to maintain a statewide system of industry-defined skill standards was assigned to the TWIC. In that role, the TWIC is charged with two major functions.

### Development and Recognition of Skill Standards

The first function is to facilitate the development and recognition of skill standards by industry groups. Part of this function is to serve as a quality assurance agent for the development process, informing industry groups of the content and procedural validity criteria required for recognition in Texas. The TWIC then evaluates the skill standards against the criteria and grants recognition of the standards (For details on this process, see the companion publication, *Guidelines for the Development, Recognition, and Usage of Skill Standards*).

### Facilitation of Skill Standards Usage

The second function is to facilitate dissemination and usage of skill standards. The Legislature intended the skill standards to “guide curriculum development, assessment and certification of workforce skills.” However, the system in Texas is voluntary, with no authority granted to compel the use of skill standards. Thus, the TWIC helps to bridge the gap between industry skill standards and their usage by education and training providers to prepare students and trainees for the workforce in two ways. It provides technical assistance on skill standards usage and promotes the use of standards and credentials among employers. Given that skill standards serve as a communication tool to inform training and education providers of business and industry skill requirements, it is crucial that employers hire graduates of the programs that base their curricula on industry skill standards. Industry will ultimately drive the successful implementation of the skill standards system.

### Purpose and Scope of Guidelines

*Guidelines for Texas Skill Standards Based Program Recognition* provides policies and guidance regarding the usage of skill standards in Texas for curriculum development, assessment and certification of workforce skills. These *Guidelines* are designed for community and technical colleges interested in using skill standards in their workforce education programs. As stated in the *Guidelines for Development*, the use of skill standards is not endorsed for purposes other than education, training and career information. These *Guidelines* are limited to providing policies and guidance on the usage of skill standards within the existing public postsecondary workforce education system in Texas.

### Relationship with Existing Occupational Certification Systems

Third-party assessment and credentialing systems in the United States perform one or more of the three functions—curriculum development, assessment and certification—referred to in the legislation establishing the Texas skill standards system. These occupational credentialing systems can be divided into three categories:

*Credential granting educational institutions* – Degrees or certificates are awarded by educational institutions for programs of study that teach skills related to specific occupations. Students are awarded the credentials after successfully completing instruction and demonstrating mastery of knowledge through provider-administered assessments.

*Licensure or regulation* – Awarded by government-regulated agencies, a license is required for certain professions before employment begins. Depending on guidelines, relicensing can be required.

*Third-party, industry-based certifications* – A certification is obtained by passing an exam to demonstrate proficiency in a specific trade. Certification standards are developed by national industry organizations with no affiliation to educational institutions. Awards are assessed through independent third-party centers that are sanctioned by national industry organizations, without influence from training programs.

#### *Credential Granting Educational Institutions*

In Texas, the skill standards system, which encompasses sub-baccalaureate occupations, is implemented through public community and technical colleges, which are governed by the Texas Higher Education Coordinating Board (THECB). Colleges choose the courses to comprise their technical education programs from the Workforce Education Course Manual (WECM). The WECM is the approved state inventory of workforce education courses for public two-year colleges in Texas, a resource that allows Texas colleges increased flexibility in responding to business and industry needs. It is designed to contribute to the quality and consistency of learning outcomes in workforce courses across the state.

In occupational areas where industry groups have not come to consensus on skills needed, community and technical colleges have relied on employer advisory committees at the local level and DACUM (Developing a Curriculum) or modified DACUM processes to analyze jobs, breaking them down into tasks required and related skills, to inform curriculum content. Using local employer input into the curriculum development process, college by college, is slower and more expensive than statewide skill standards, and may result in inconsistent standards across the state.

Skill standards, on the other hand, provide an ideal communication tool for statewide industry workforce requirements that colleges may integrate into a common technical core of WECM courses. The recent passage of legislation requiring the THECB to implement programs of study curricula to ensure alignment with industry and academic needs should also facilitate consistent statewide industry standards.

#### *Licensure or Regulation*

In some occupational areas, a legally-constituted licensing body defines the desired competencies and certifies and licenses each individual who wants to enter the occupation. Licensing requirements usually include personal qualifications (such as minimum age, citizenship and/or letters of reference); specialized education and training; and an examination.

State-regulated industries do not fall within the Texas skill standards system. These industries have a vehicle and state authority through which their required occupational competencies are communicated to community and technical colleges. The Texas Higher Education Coordinating Board's *Guidelines for Instructional Programs in Workforce Education* requires that programs with mandatory state, federal or national licensure, certification, or registration prepare their graduates to meet the standards of the appropriate agency or association and take the corresponding examinations(s). These state authorities' competencies and licensure requirements are specified through the learning outcomes<sup>1</sup> of courses in the WECM. Where these types of licensure arrangements exist, the TWIC supports the use of existing professional certification systems for the assessment and documentation of skill attainment.

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<sup>1</sup> The term "learning outcomes" wherever it appears in these *Guidelines for Program Recognition* refers to a formal category or heading in the THECB's WECM. Its meaning is "results," as in the dictionary definition of outcome: a natural result; consequence.

*Third-Party, Industry-Based Certifications*

In a number of occupational areas, national industry associations or private vendors have voluntarily developed their own skill-based credentialing systems that certify individuals' attainment of required skills. The industries have chosen to establish these systems for a variety of reasons including: anticipating a shortage of skilled workers; recognizing the value of a highly-skilled, credentialed workforce; and/or responding to the possibility of government regulation.

The industry associations may perform any or all of the following functions, depending on the occupational area:

1. prescribing education and experience qualifications for certification candidates;
2. accrediting programs based on qualifications for curriculum, faculty, equipment and facilities, including conducting site visits;
3. performing occupational analyses and establishing the competency requirements that will underlie the certification assessments;
4. developing curriculum related to the competencies and providing technical assistance to educational institutions and training programs desiring to teach to the standards;
5. administering competitive exams for individuals and issuing certificates based on the results.

Such industry associations may submit their competencies or skill standards for recognition for the added value of having colleges integrate them into WECM courses. For those recognized skill standards that already have associated assessment and credentialing systems that are recognized by the industry, the TWIC encourages postsecondary education and training providers to utilize those systems for their program completers. Industry associations play a vital role in assisting colleges to develop curriculum, construct assessments and teach to the standards for which individuals will be tested and certified. Colleges are encouraged to work with industry associations for these purposes.

**POLICIES AND GUIDANCE**

Skill standards are a tool for communicating employers' workforce requirements to education and training providers. Translating skill standards into education and training programs to prepare a qualified workforce according to the industry specifications consists of three processes:

- Usage of skill standards to guide curriculum development.
- Assessment (measuring individuals' acquisition of skill standards).
- Skill attainment documentation (certification and credentialing).

**Usage of Skill Standards to Guide Curriculum Development**

Skill standards and workforce education curricula, if designed effectively, should essentially convey the same information. Skill standards, developed by industry groups, state what the worker needs to know and be able to do (knowledge and skills) in the workplace and the level to which the work must be performed to be deemed competent. Curricula, developed by education and training providers, state what learning outcomes (workforce knowledge and skills) the learner must attain and the level to which the learning outcomes must be demonstrated. This similarity allows education and training providers to use skill standards to construct curricula. In fact, there is a direct parallel between the seven Texas skill standards elements and the components of curricula as described on the next page.

## Skill Standards Elements

- Critical Work Function
- Key Activities
- Occupational Skills, Knowledge and Conditions
- Academic and Employability Knowledge and Skills
- Performance Criteria
- Statements of Assessment

## Curricula Components

- Program Structure
- Learning Outcomes
- Workplace Context and Resources/Equipment
- Sequence and Competencies Integration
- Benchmarks and Assessment
- Methodology and Instruments

*Skill Standards-to-Curricula Linkages*

Critical work functions are the principal responsibilities that a worker must perform to meet the key purpose, or essential work-related goal, of an occupational area. Typically, an occupation can be described using 10 to 15 critical work functions. This skill standards element is roughly parallel to the courses that comprise a workforce education program. Thus, critical work functions provide clues as to the potential breakdown of course content within a program of study. A critical work function, depending on its depth and breadth, may comprise one or multiple courses. It is also possible that more than one critical work function could be taught in the same course.

Key activities are the major duties (or clusters of tasks) that workers must perform to accomplish each critical work function. Generally, each critical work function consists of three to six key activities. This element of the skill standards is comparable to learning outcomes in curricula. An education or training provider developing curriculum based on skill standards would expect a learner, by the completion of the program, to demonstrate the successful performance of the key activities.

Occupational skills, knowledge and conditions are the common technical or occupational-specific skills and knowledge and the associated tools, resources and equipment that are critical for carrying out the key activities to the level specified in the performance criteria. This skill standards element enables education and training providers to design the curriculum and the learning experience in the context of the workplace. The conditions are necessary to enable the learner to perform the key activities.

Academic and employability knowledge and skills are the competencies associated with the traditional subject areas of mathematics, science, reading and writing, and the applied, cross-functional skills and knowledge required for effective performance across a range of occupations. Examples of employability knowledge and skills are adaptability; using information and communications technology; listening; speaking; and working in teams. Based on the common nomenclature in the *Guidelines for Development*, there are 17 academic and employability knowledge and skills (AEKS). The TWIC adopted the AEKS common nomenclature and associated rating scales endorsed by the National Skill Standards Board (NSSB).<sup>2</sup> In the skill standards, industry groups identify, for their occupational area, the academic and

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<sup>2</sup> Acknowledgement - Skill Scales Companion Guide

In an effort to facilitate portability of credentials and transferability of individuals' skills, the Texas skill standards elements and format were designed to promote the linkage of state and national skill standards efforts.

As part of the skill standards elements required for recognition, the common nomenclature endorsed by the NSSB was adopted. *The Skill Scales Companion Guide* sets out the seventeen (17) academic and employability knowledge and skills endorsed by the NSSB, and provides scales to determine the levels of

employability knowledge and skills associated with each critical work function. This information can be used by education and training providers to determine what academic and employability knowledge and skills underlie each of the critical work functions and to sequence the teaching of those competencies from course to course across a program.

Performance criteria indicate the type, quality and level of output (demonstrable performance) required to successfully complete each key activity. This skill standards element can be used as the benchmark in assessing students' performance of the key activity, or learning outcome.

Statements of assessments are the industry group's recommendation for the evaluation process that should be used to determine whether the learner meets the competencies specified within each critical work function. A statement of assessment is the guide to appropriate strategies and tools to be used to assess the level of skill attainment in a critical work function. Examples of assessment strategies might include paper-and-pencil or computer-administered tests, simulations, performance-based demonstrations, work samples, portfolios, interviews, etc. The statement of assessment may be broad, or may recommend specific strategies and tools. It may also include information regarding the relative importance of the critical work functions and their associated key activities and performance criteria, in terms of time spent on the job (or in training) and weighted assessment. This skill standards element can be used to design assessments for a program and determine the methodology and instruments to use.

### **Assessment**

Assessment is the process by which an individual's performance is measured or evaluated to determine whether it meets the level of competence specified in the skill standards. Assessment instruments to measure competency include not only written exams<sup>2</sup> but a variety of performance-based and other methods, as indicated above. Assessment makes skill standards meaningful by providing a way to know when individuals have achieved the level of competence specified by industry in the standards.

#### *Texas Approach and Scope*

At the state level, there is an existing infrastructure for administering assessments and documenting attainment of skills. In Texas, this infrastructure is the public postsecondary workforce education system, consisting of community and technical colleges. These institutions are already conducting assessments of their program completers. As noted above, the performance criteria and statements of assessment elements enable colleges to develop assessments that authentically measure individuals' attainment of the skills indicated by industry groups in the skill standards.

#### *Linking with Third-Party Assessment Systems*

As indicated earlier, for some occupations, industry associations have established separate systems to assess and certify individuals who have been trained for entry into their fields. In certain industries, the certification has become a de facto requirement for employment. In those cases especially, it is important for education and training providers to be aware of and teach to the competencies for which their graduates will be assessed. Some industry associations also accredit education or training programs that teach to the skill standards they have established.

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knowledge and skills required in the world of work. The TWIC acknowledges the use of the academic and employability knowledge and skills, and associated skill scales and companion guide, developed by the NSSB.

The skill scales and companion guide are subject to copyright laws at the time of publication (2000).

## Skill Attainment Documentation

### *Levels of Credentials*

In Texas, the scope of the skill standards system is limited to the postsecondary level of education and training. As mandated in its authorizing legislation, the voluntary statewide system of skill standards and credentials shall encompass all major skilled occupations that provide strong employment and earnings opportunities and require less than a baccalaureate degree. In Texas' community and technical college system, the credentials that encompass this range of occupations and are of sufficient length and breadth to encompass the standards content, are the level two certificate and the associate degree.

### **Program Recognition**

As noted throughout these *Guidelines*, both the development and utilization of skill standards is voluntary in Texas. As a market-driven system, implementation of the skill standards and credentials will only succeed with the active participation of employers hiring the graduates of postsecondary education programs that utilize skill standards as the basis of their programs. This feedback loop will reward community and technical colleges that use skill standards by improving their placement statistics and will also provide incentive to those colleges that are not using skill standards.

This supply and demand mechanism will only work if employers are aware of which community and technical colleges have incorporated skill standards into their curricula, assessments and credentials. To help facilitate usage of skill standards, the Texas Legislature charged the TWIC with promoting skill standards among employers. As part of that mission, community and technical college programs that teach and assess students all the skill standards content will be recognized and promoted to employers.

### *Policy Intent*

#### Skill Standards-Based Technical Core

The TWIC, composed of a majority of business and industry members, recognizes the desire of employers to see consistent, industry-defined student outcomes in any given program area, regardless of the college from which they recruit. To achieve that end, program recognition is designed to foster and promote the development of a common, skill standards-based technical core curriculum. The technical core allows both a statewide standard of industry-defined outcomes to be met across colleges, and specialized skill sets required by local or regional employers to be met in additional courses in any individual college's program.

Given this goal, the intent is that the first college to incorporate particular skill standards into its program would apply for "program recognition" (see application type 1). Colleges that subsequently integrate the same skill standards into the same program area would apply for "program replication" (see application type 2).

#### College Collaboration

Where one college has already received program recognition, the technical core curriculum that encompasses the skill standards content is expected to evolve through the collaboration of additional colleges that subsequently seek recognition for the same type of program. Thus, both the college with the original recognized program and institutions that follow are encouraged to collaborate, with the goal of agreement on a technical core that is broadly representative of their college programs. One exception to this practice may be where a critical mass of colleges has agreed on a common technical core that appears to be broadly representative of the program area. In those instances, future colleges may be expected to replicate the core curriculum as it exists.



In applying for program recognition or replication, the technical core is documented on the key activities-to-courses matrix. The matrix reflects the courses in which the colleges have agreed, at a minimum, to assess the key activities as significant (summative or terminal, when appropriate) learning outcomes. A college may also assess the key activities in additional courses. However, the matrix indicates the consensus across the colleges as to the technical core courses in which they will teach and assess the key activities to the performance criteria, or where appropriate, depending on the specific skill standards, the related knowledge and skills.

#### *Program Recognition Criteria*

To receive recognition for a workforce education program, community and technical colleges must meet the following criteria:

- Incorporate all elements of the skill standards into the curriculum or program.
- Teach the key activities defined in the standards as learning outcomes in the program, and assess students' performance on the basis of those activities and related performance criteria, skills, and knowledge.
- Complete, submit, and receive approval for, its application for program recognition, which consists of the following documentation:
  - ▶ Notification of intent to apply for program recognition
  - ▶ Application cover page
  - ▶ Key activities-to-courses matrix – indicating in which courses the key activities will be taught as learning outcomes.
  - ▶ Syllabi for each course in the matrix listing the key activities as learning outcomes.
  - ▶ Signed statement of assurances indicating the college's willingness to collaborate with other colleges on a skill standards-based technical core curriculum for the program area.

#### *Application Types*

Colleges may apply for program recognition in one of the following ways:

- 1) Recognition – As the initial college, incorporate skill standards into its program; OR
- 2) Replication – Offer the technical core curriculum of a recognized program into which the relevant skill standards already have been incorporated. Under this option, colleges teach and assess the key activities, at a minimum, in the same technical courses as the recognized program.

Once the application is approved, the recognized program is prominently displayed and promoted to Texas employers and industry groups on the Texas skill standards website.

To assist curriculum developers, guidelines and suggestions for incorporating skill standards content into postsecondary workforce education programs are posted in the community and technical colleges section of the Texas skill standards website ([www.tssb.org/community-and-technical-colleges](http://www.tssb.org/community-and-technical-colleges)).

#### *Renewal Criteria and Process*

Program recognition expires three years from the date of recognition, at which time it may be renewed. To renew its program recognition, a college must meet the following criteria:

- Have developed and be using assessments to measure students' mastery of all the key activities (or equivalent element) and related criteria, skills and knowledge incorporated into the curriculum.

- Indicate commitment through a signed statement to continue teaching and assessing the key activities, as documented on the original key activities-to-courses matrix, or revised matrix as needed, to reflect updated or amended skill standards.
- Complete, submit, and receive approval for, its application for program recognition renewal, which consists of the following documentation:
  - ▶ Renewal application cover
  - ▶ Renewal application form
  - ▶ Revised key activities-to-courses matrix – as needed, to reflect changes in the skill standards since the program was originally recognized
  - ▶ Syllabi corresponding to the matrix changes, as needed.
  - ▶ Illustrative examples of at least three assessments, with the agreement that all assessments will be available for review if requested.

#### *Subsequent Renewals*

To be retained, program recognition must be renewed every three years when it is due for expiration. After its initial three-year renewal is approved, a college may submit an abbreviated application for subsequent renewals. That application shall consist of a statement of assurances attesting that the college's assessments evaluate student mastery of the skill standards and that the courses integrated with key activities have not changed since the last renewal. The statement must be signed by a program representative (such as the chair or lead faculty member), the dean overseeing the program, and the college president or vice president of instruction/academic affairs.

If either of the following has occurred since the last renewal, the college also must submit sample assessments:

- Skill standards have been amended or updated, and/or
- Technical core curriculum or its placement of key activities has changed.

#### *Rules and Requirements Governing Changes Prior to Program Recognition Renewal*

##### College Program Revision

If a college formally revises its recognized program, i.e., submits a program revision to the THECB for approval, before the three-year recognition term expires, it must submit either:

- 1) A statement indicating that the placement of key activities in the program's courses is unchanged, as indicated on the matrix submitted with the college's program recognition application;
- 2) A revised matrix showing any changes in the placement of key activities in courses, (e.g., if a course integrated with a key activity has been replaced by another course), and where the key activities will now be taught, plus course syllabi for the changed courses that document the key activities as learning outcomes; OR
- 3) A statement notifying the TWIC that the program is being deactivated or closed.

##### Updated Skill Standards

If skill standards are updated, i.e., the work-oriented elements (critical work functions, key activities and performance criteria) are significantly changed, essentially resulting in new skill standards, before program recognition expires:

- Relevant colleges will be notified of the updated skill standards.
- Affected colleges may choose to renew their program recognition to reflect the changes in the skill standards, but will not be required to.
- When the recognition is due to be renewed, colleges will be required to use the updated skill standards.

#### Expired Skill Standards

If the skill standards expire before a college's program recognition expires:

- Program recognition continues until the expiration date, at which time it is not renewed. The expired skill standards shall remain in the Texas Skill Standards Repository in an archives section until the recognition of all recognized programs integrated with the expired skill standards has also expired.

## **Current Skill Standards Previously Recognized by the Texas Skill Standards Board**

### **Analyzer Technician**

Due to their experience level and technical specialization, analyzer technicians earn an hourly rate between \$22.00 and \$28.99 depending on the nature of the work. The more experienced instrumentation and control technicians generally perform the analyzer technician duties. This group of experts makes up an age demographic that suggests that 50-70 percent of its population is eligible for retirement in the next five to 10 years.

### **Biomanufacturing**

The occupational area of biomanufacturing encompasses several specialty jobs including upstream and downstream manufacturing, quality control, environmental health and safety, process development, and validation. As a new and emerging occupation, biomanufacturing is classified as a subset of biological technician. According to the 2012 Texas Biotechnology Industry Report from the Office of the Governor of Texas, 11 percent of the biotechnology workforce was employed in pharmaceutical and medical manufacturing. According to the Texas Workforce Commission (TWC), the drugs and pharmaceuticals bioscience industry sector is specifically focused on biomanufacturing and in need of technicians, who average \$17.51 per hour.

### **Biomedical Equipment Technician**

Biomedical equipment technicians usually work in hospitals, medical centers, and large clinics that have high-technology equipment and instruments. The rapid expansion of an aging population is expected to generate strong demand for medical equipment and create excellent opportunities for employment in this field. TWC data projects statewide employment of biomedical equipment technicians to increase by approximately 34 percent between 2008 and 2018. The average hourly wage in Texas for this occupation is reported to be \$19.71.

### **Biotechnology and Biomedical Skill Standards for Regulatory Affairs and Clinical Trials Biotechnology and Biomedical Skill Standards for Research and Development**

According to the Texas Biotechnology Industry Report published in April 2010 "Texas has a dynamic biotechnology marketplace with an estimated economic impact of \$75 billion. The state has many national top 10 rankings in biotechnology and is home to over 4,100 biotechnology, biomedical research, business and government consortia, medical manufacturing companies, and world-class universities and research facilities employing over 104,400 at an average annual salary of over \$67,300. Wages and salaries for the state's life science workers are nationally competitive and exceed state averages."

### **Chemical/Refining Process Technician**

Between the occupational codes of chemical equipment operators and tenders; chemical plant and system operators; and petroleum pump system operators, refinery operators and gaugers; state labor market information data suggests that the number of jobs is expected to drop from approximately 30,000 jobs in 2006 to just over 21,000 jobs in 2016. The average hourly wage between the three occupations is about \$26.00.

### **Customer Service and Sales**

The retail industry employs the greatest number of individuals in the state. TWC occupational wage and projections data indicate that Texas will employ over 728,000 retail salespersons and cashiers by 2018. In addition, the data projects that over 267,000 customer service representatives will be employed in the state by 2018. The retail industry's continued growth depends on a professional and well-trained workforce.

### **Digital Forensics Technician**

Digital forensic technicians collect, process, preserve, analyze, and present computer-related evidence in support of network vulnerability mitigation and/or criminal, fraud, counterintelligence or law enforcement investigations. As an emerging occupation, digital forensics technician does not have separate U.S. Bureau of Labor Statistics (BLS) employment data. However, related occupations, including information security analysts, are experiencing higher than average projected growth to the year 2020 of 24 percent. For information security analysts alone, the hourly wage in Texas, \$38.28, is higher than the national average, according to the U.S. Department of Labor.

### **Digital Game and Simulation Programmer**

The occupational area of digital game and simulation programmer encompasses several job titles including gameplay programmer, sequencing programmer, graphics engine programmer, and artificial intelligence programmer, among others. According to the Entertainment Software Association, the video gaming industry added \$764.9 million to the Texas economy and grew by a real annual rate of approximately 16 percent from 2009 to 2012, more than five times the growth of the state's overall economy. Texas ranked second in video game personnel in 2012, with close to 18,000 direct and indirect employees, and average compensation of \$101,349—higher than the national average for the occupation.

### **Distributed Renewable Solar Energy Technician**

The Texas legislature established its renewable portfolio standards in 1999, which mandated the development of certain amounts of renewable energy and prompted the renewable energy industry to rapidly accelerate its production. The 2005 Texas legislature increased the state's total renewable energy mandate to a target of 10,000 MW by 2025, with a requirement that 500 MW of that target be met with non-wind renewable generation – a provision that indirectly promotes solar power. Such incentives create a workforce demand for qualified technicians to install, maintain, and repair solar energy systems that can be expected to grow steadily. A report by CleanEdge, a clean technology market publication, indicated that, combined, solar photovoltaic (PV) installers and wind power are expected to generate 2.7 million jobs by 2018.

### **Electronic Game Content Production**

According to a March 31, 2010 press release from former Governor Rick Perry's office regarding the Game On! Texas Symposium, Texas was home to more than 120 video game development companies, the third highest concentration of video game development companies in the U.S. Texas developers employed more than 3,500 employees and annually spent more than \$234.4 million in the state. In August, 2007, Governor Perry signed a bill approving up to \$22 million in production incentives for the entertainment sector, including video game companies.

### **Fuel Cell Systems Technician**

As is common with emerging occupations, there is currently no BLS classification for the fuel cell technician occupational area. The closest BLS descriptor is electrical and electronics repairers of powerhouse, substation, and relays who inspect, test, maintain, or repair electrical equipment used in generating stations, substations, and in-service relays. These workers may be known as powerhouse electricians, relay technicians, or power transformer repairers. In Texas, these workers earn an average hourly wage of \$28.28, according to the TWC's labor market data.

### **Geographic Information Systems Technician**

The geographic information systems (GIS) technicians help design, develop, and coordinate integrated geographical information system databases of spatial and non-spatial data. These technicians decide effective presentation of information and create digital maps and graphs using GIS software and related equipment. There is a substantial demand for technicians in geospatial

information technology, for individuals who do not wish to pursue an advanced degree, according to the American Society for Photogrammetry and Remote Sensing.

### **Highly Automated [Manufacturing] Systems Technician**

Highly automated manufacturing systems technicians ensure that the manufacturing system fulfills customer and business requirements. They install and repair equipment on the manufacturing floor. According to TWC labor market information data, industrial machinery mechanics earn an average hourly wage of \$20.52. The occupation is expected to grow steadily but it is also expected to have a strong requirement to fill openings created each year to replace workers who leave the occupation either through new employment or through retirement.

### **Homeland Security Support Specialist**

The Homeland Security Support Specialists address a growing demand for specialists to manage security concerns in federal, state, and local government as well as private industry and nonprofit organizations. Because of America's concern with homeland security, new job areas and career opportunities are developing, not only in military and law enforcement fields, but also in scientific research, information technology, biomedical technology, disaster assistance and relief, air marshal operations, intelligence operations, and other areas.

### **Industrial Instrumentation and Controls Technician**

Instrumentation and controls technicians troubleshoot, maintain, repair, and install process control and related equipment. Technicians work with pneumatic, mechanical, electronic, and computer-based process control equipment to calibrate instruments used to control the measurement of materials such as oil and gas. There is a growing demand for skilled entry-level technicians. The current shortage is the result of attrition, retirement, and lower new-hire skill levels. According to the Industrial Instrumentation and Controls Technology Alliance, Gulf Coast plants reported that the average age of a plant worker is between 48 and 49 years, which is projected to result in a 60 to 70 percent turnover rate in the next 10 to 15 years. According to the alliance, these technicians can earn from \$35,000 to \$60,000 a year with a two-year degree.

### **Information Technology Skill Standards**

Information technology skill standards are essential for the preparation of Texas' future workforce and the development of high-tech careers in information technology, biotechnology, health care, digital media, and other industries. According to the State of Texas Information and Computer Technology Cluster Report of August, 2005, Texas ranked second nationwide in the number of high-tech workers, in the size of the high-tech payroll, in the number of businesses and in the value of high-tech exports.

#### **Cybersecurity**

As an emerging occupation, there is little occupational data available for the cybersecurity occupational area. The military presence in San Antonio and South Texas has helped those regions develop recognized expertise and industry in this occupation. As more and more companies are impacted by hackers or illicit activity taking place on their networks, more investment in security will be required, creating an ever-increasing need for qualified security and computer forensics professionals.

#### **Database Development and Administration**

In the database development and administration occupation of the information technology skill standards, TWC data indicated an average hourly wage in 2004 of \$30.92, with an expected increase in employment between 2002 and 2012 of 38 percent with an overwhelming percentage of that increase occurring as a result of growth in the occupation.

**Digital Media**

In the digital media occupation of the information technology skill standards, the closest occupational profiles currently defined are audio and video equipment technicians, audio-visual collections specialists, and sound engineering technicians. The average of the hourly wages for these occupations is approximately \$17.00 according to TWC occupational data. All three occupations indicated approximately 20 percent expected increase in employment between 2002 and 2012, with only a slightly larger portion of the openings created due to growth as compared to openings created due to replacement.

**Enterprise Systems Analysis and Integration**

In the enterprise systems analysis and integration occupation of the information technology skill standards, TWC data indicated an average hourly wage in 2004 of \$32.11, with an expected increase in employment between 2002 and 2012 of almost 32 percent, with almost three times as many of openings created occurring as a result of growth in the occupation as compared to the number of openings due to replacement.

**Network Design and Administration**

In the network design and administration occupation of the information technology industry, TWC data indicated an average hourly wage in 2004 of \$28.75, with an expected increase in employment between 2002 and 2012 of just over 32 percent, with almost three times as many of openings created occurring as a result of growth in the occupation as compared to the number of openings due to replacement.

**Programming/Software Engineering**

In the programming/software engineering occupation of the information technology skill standards, TWC data indicated an average hourly wage in 2004 of \$37.26, with an expected increase in employment between 2002 and 2012 of 34 percent, with well more than half of that increase occurring as a result of growth in the occupation.

**Technical Support**

In the technical support occupation of the information technology skill standards, TWC data indicated an average hourly wage in 2004 of \$20.27, with an expected increase in employment between 2002 and 2012 of almost 25 percent, with twice as many of the openings occurring as a result of growth in the occupation compared to the number of openings due to replacement.

**Technical Writing**

In the technical writing occupation of the information technology skill standards, TWC data indicated an average hourly wage in 2004 of \$26.29, with an expected increase in employment between 2002 and 2012 of just under 20 percent, with most of the openings created due to replacement.

**Web Development and Administration**

As an emerging occupation, there is no specific occupational data available for the web development and administration occupation. Careerbuilder.com reports that the average Texas salary for a web developer (as shown in salary data for Dallas, Houston, Austin, Corpus Christi, and El Paso) starts at approximately \$47,200.

**Lineman**

According to a 2011 article in the *Austin American-Statesman*, "some industry surveys predict that utilities will have to fill 40 percent of the nation's line worker jobs over the next few years. The graying of the workforce and the greening of the industry are opening up new opportunities." The

article quotes Ray Cook, an Austin Energy trainer and Austin Community College instructor, "You can't have a smart grid without a smart line worker." TWC data projects statewide employment of linemen to increase by almost 20 percent between 2008 and 2018. The average hourly wage for this occupation is just over \$21.00.

### **Machinist I**

### **Machinist II**

Machinists set up and operate a variety of machine tools to produce precision parts and instruments from solid blocks of metal. According to the occupational profile data presented by the TWC, machinists earn an average hourly wage of almost \$17.00. The profession is expected to grow in Texas by just over 20 percent between 2006 and 2016.

### **Manufacturing Logistics**

The manufacturing industry is a strong employer in Texas. TWC data estimates employment for transportation, storage, and distribution managers to be approximately 9,500, and projects employment to remain level through 2018. They earn an average hourly wage of \$43.31. Almost 28,000 production, planning and expediting clerks, who report to transportation, storage, and distribution managers, are currently employed in the state, a number that is expected to increase slightly by 2018. Clerks earn close to an average of \$20.00 per hour in Texas, according to TWC data.

### **Manufacturing Certified Production Technician**

The manufacturing industry is a strong employer in the state. TWC data projects employment figures for manufacturing supervisors and managers alone to be approximately 54,000, and projects employment to remain level through 2018. The BLS estimates that Texas production employees on manufacturing payrolls earn an average of \$635 per week.

### **Medical Office Manager**

With the advent of sweeping changes, including legislative and technological changes, in the health care delivery system, the pressure on small practice medical providers to be efficient and responsive is growing. A medical practitioner can no longer care for patients and manage a well-run office simultaneously. Small medical practices increasingly rely on trained medical office managers to keep a practice running smoothly so that medical staff can focus on patient care. TWC data projects statewide employment of medical office managers to increase by almost 25 percent between 2008 and 2018. The average hourly wage for this occupation is just over \$40.

### **Metalforming I**

### **Metal Stamping II**

### **Metal Stamping III**

Metal formers perform finish-forming, checking and re-forming of machine-formed extruded and sheet metal parts. They form parts to final dimensions using metal forming equipment such as presses, brakes, and rolls. The metalforming occupation falls into the broad occupational category of machinists. TWC data reports on a number of occupations related to the metalworking industry, including machinists, machine setters and operators, and tool and die makers. Employment projections for these specialty areas (and several others) are projected to be close to 100,000 by 2018.

### **Nanotechnology Technician**

Nanotechnology is the science of very small things and involves the engineering of materials on the scale of atoms and molecules. Nanostructures are typically between approximately .1 and 100 nanometers (nm) in size. Current applications for nano-scale materials include computer hard



drives, non-volatile magnetic memory, automotive sensors, landmine detectors, cosmetics, paint, ink, glass coatings, and dressings for burns and wounds. According to the 2006 Texas Nanotechnology Report published by the Governor's Office of Economic Development, Texas is considered a global leader in nanotechnology research and development and is top ranked nationally for research, venture capital, and commercialization of nano-materials.

### **Oceanographic Instrumentation Technician**

Oceanographic instrumentation technicians collect scientific measurements that are necessary to understand how to use the ocean and its resources more safely and wisely. While ocean measurements are still made for exploration and research, more and more data are being collected to support commercial missions including optimizing shipping routes, managing fisheries, mitigating oil spills, and forecasting storm surge. No BLS data exist specifically for these technicians. The Marine Advanced Technology Education Center's research indicates that an entry level technician with an associate degree can earn between \$27,000 and \$50,000 per year. An online salary database (simplyhired.com) indicates that the average yearly salary in Texas is \$48,000.

### **Oil and Gas Production Technician**

According to TWC data, the average hourly wage for the service unit operators, oil, gas, and mining occupation in 2008 was \$19.61. For the projected time period between 2006 and 2016 the occupation was expected to grow by approximately 4,000 openings from 12,500 in 2006 to 16,650 in 2016. According to the Texas Comptroller of Public Accounts' 2008 The Energy Report, in 2006, more than 312,000 Texans, or 3.1 percent of the state work force, were employed in the oil and natural gas industry, which accounted for \$159.3 billion of Texas' gross state product, compared with \$85.6 billion in 2003. Likewise, oil and gas industry wages rose substantially from a total of \$20.9 billion in 2003 to \$30.6 billion in 2006.

### **Photonics Technician**

Photonics is defined as "the technology of generating and harnessing light and other forms of radiant energy whose quantum unit is the photon." Photonics encompasses applications in numerous and diverse fields of technology including information technology, telecommunications, health care, industrial manufacturing, and others. Any number of standard occupational titles could be included in the specialization areas, including industrial, electrical, and mechanical engineering technicians, audio and video equipment technicians, biomedical equipment technicians, and manufacturing equipment technicians. The National Center for Optics and Photonics Education (OP-TEC) describes photonics as an "enabling technology" for many industries that use equipment with some kind of optical component in its function.

### **Power Generation: Plant Operators and Plant Mechanics**

The Power Generation skill standards describe the work functions, activities, and skills associated with the plant operator and plant mechanic occupations in a hydro-electric power generation environment. TWC data indicates a 2006 average hourly wage for power plant operators close to \$26.00, with the employment numbers growing slowly through 2014. While the numbers are small, they are critical in meeting the power generation needs of the state.

### **Precision Optics Technician**

Precision optics technicians produce, test, and handle optical (infrared, visible, and ultraviolet) components that are used in lasers and sophisticated electro-optical systems for defense, homeland security, aerospace, biomedical equipment, digital displays, alternate energy production, and nanotechnology. These technicians also integrate precision optical components into electro-optical systems and maintain them. According to OP-TEC, there is high demand for precision optics technicians nationally and in Texas. A 2009 survey of U.S. firms employing these positions,

conducted by the University of North Texas Survey Research Center, found that the number in the workforce is estimated to be 6,188, with a five-year demand of 3,100 additional technicians. An online salary database indicates that the average yearly salary in Texas is \$34,000.

#### **Semiconductor Manufacturing Equipment Technician**

Semiconductor manufacturing equipment technicians ensure that the manufacturing system fulfills customer and business requirements. They install and repair equipment on the semiconductor manufacturing floor. According to TWC labor market information data projections for the period between 2006 and 2016, industrial machinery mechanics earn an average hourly wage of \$20.52. The occupation is expected to grow steadily but it is also expected to have a strong requirement to fill openings created each year to replace workers who leave the occupation either through new employment or through retirement.

#### **Telecommunications Maintenance Technician**

Telecommunication maintenance technicians install, troubleshoot, repair, and maintain telecommunications equipment, components and peripheral devices. Labor market information presented by the TWC suggests that telecommunications equipment installation and repair jobs are expected to increase somewhat through 2016 and that line installation and repair jobs are also expected to increase slightly. Telecommunications equipment installation and repair technicians earn an average hourly wage of \$21.64 and line installers earn an average hourly wage of \$20.18, according to TWC data.

#### **Wind Turbine Technician**

Texas is the largest producer of wind energy in the United States due in part to the passage of Senate Bill 20 (SB20) by the 79th Legislature of Texas. SB20 set a target of 5,880 megawatts (MW) of renewable energy production in Texas by 2015, and 10,000 MW by 2025. As of December 2009, Texas already produced 9,410 MW of wind energy, enough to power 2.5 million homes. Due to this growth, there is an acute shortage of technicians in Texas, where a technician can expect a basic salary of \$36,000 per year.

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**TWIC BRIEFING ITEM  
MEMORANDUM**

REF: KM.twic.II5.120415

**TO** Council Members

**SUBJECT** Texas Workforce Investment Council Annual Report for Fiscal Year 2015

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**Introduction**

The *Texas Workforce Investment Council Annual Report—Fiscal Year 2015 (Annual Report)* summarizes the Texas Workforce Investment Council's (Council) activities and products from September 1, 2014 to August 31, 2015.

**Background**

The Council approves a work plan each September for the fiscal year (FY). The FY 2015 work plan was approved by the Council in December of 2014, and is the basis for Council and staff activities described in the annual report. This is the tenth year the Council has produced its *Annual Report*. State law charges the Council with reporting annually to the Governor and the legislature on the implementation of the workforce system strategic plan and the status of welfare to work programs in Texas.

**Attachment**

1. *Texas Workforce Investment Council Annual Report—Fiscal Year 2015*

**Discussion**

The *Annual Report* provides a concise presentation of some of the major pieces of the Council's work during FY 2015 in a tri-fold, ledger-sized format. The *Annual Report* spotlights the Council's work with regard to its objective of undertaking research on behalf of system stakeholders—so that the information and data gleaned can inform workforce program planning, as well as program improvement.

The report contains information on a number of Council activities and products. For example, in FY 2015 the Council underwent a review by the Sunset Advisory Commission. This review culminated during the 84<sup>th</sup> Session of the Texas Legislature with action to reauthorize the Council's statutes and make other changes recommended by Sunset staff. The formal review of the Council began in May 2014 and lasted through January 2015. The recommendations included continuing the Council for 12 more years, aligning future Sunset reviews with those of the Texas Workforce Commission, and abolishing the Texas Skill Standards Board and transferring its functions to the Council.

On July 22, 2014, the Workforce Innovation and Opportunity Act of 2014 was enacted. Throughout FY 2015, the Council released various research papers detailing the WIOA, requirements for a state unified plan, regional planning, and infrastructure funding. These actions were taken in anticipation of considering for approval the state WIOA plan, which will consist of strategic and operational planning elements that describe the state's vision, goals, and strategies for preparing an educated and skilled workforce to meet employer needs.

The Texas Government Code directs the Council to evaluate the effectiveness of the workforce development system. In FY 2015, the Council conducted an employer survey and reached out directly to

Texas employers to attempt to quantify types of shortages and hiring difficulties at the regional level and what consequences these issues might have for employers. The objective was to analyze at the regional level the types of workers needed, the qualifications and skills required, and what types of job openings are difficult to fill.

The Council performed a study on return on investment (ROI) and the relevance to the Council's duty to evaluate the effectiveness of the workforce system. ROI studies and measures are used to determine what economic benefit is produced in return for the money spent on any given program or service. The Council conducted an extensive analysis on relevant ROI studies to synthesize possible models for a potential ROI project in Texas. The study provided projections of time and costs involved, a review of data currently available, and what additional data may be needed.

In addition, the *Annual Report* provides short descriptions of several of the Council's research publications, including: *Evaluation 2015*, and *Policy News Highlights*, a quarterly review of selected publications relevant to workforce, education, and economic issues and trends. Finally, the report details actions taken in FY 2015 to carry out the Council's statutory mandate, in both state and federal law, to consider and recommend to the Governor for approval the updated Wagner-Peyser Senior Community Service Employment Program State Plan, as a modification to Texas' Strategic State Workforce Investment Plan for Title I of the Workforce Investment Act of 1998. The *Annual Report's* front and back panels give a brief description of the Texas workforce system and the partners and the programs that deliver workforce services to Texas' citizens and businesses.

### **Recommendation**

It is recommended that the Council note the information contained in this memorandum and in the draft report.

# **Texas Workforce Investment Council**

## **Annual Report**

### **Fiscal Year 2015**

#### **September 1, 2014–August 31, 2015**

#### *About the Council's Role in the Texas Workforce System*

The Texas Workforce Investment Council (Council) was created in 1993 by the Governor and the Texas Legislature to promote the development of a well-educated and highly skilled workforce in Texas. The Council assists the Governor and the legislature with strategic planning, research, and evaluation to support continuous improvement of the Texas workforce system. In addition to its responsibilities in state law, the Council functions as the State Workforce Investment Board under the federal Workforce Innovation and Opportunity Act of 2014. The Council does not operate programs but works to foster collaboration and a systems perspective among its partners and their programs. Its impact is demonstrated through initiatives that improve outcomes for workforce customers—employers and current and future workers of Texas—every one of whom is critical to Texas' economic success.

The Texas workforce system delivers programs, services, and initiatives administered by eight agencies, local workforce development boards, school districts, community and technical colleges, and local adult education providers. The Council's eight partner agencies are: Economic Development and Tourism within the Office of the Governor, the Texas Department of Criminal Justice, the Texas Education Agency (TEA), the Texas Health and Human Services Commission and its Department of Rehabilitative Services (HHSC-DARS), the Texas Higher Education Coordinating Board (THECB), the Texas Juvenile Justice Department, the Texas Veterans Commission, and the Texas Workforce Commission (TWC).

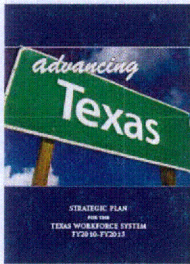
There are 19 members on the Council. The Governor appoints 14 members representing business, organized labor, education, and community-based organizations. The remaining five members are ex officio representatives of the Council's member state agencies.

The Council produces this annual report, which offers highlights of the Council's work during the past fiscal year (FY). Included in this year's report is information on the final year implementation of *Advancing Texas* — the previous workforce system strategic plan, information on the Council's Sunset review, as well as development of a new workforce system strategic plan, and evaluations of system programs.

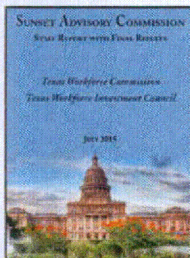
*Advancing Texas* and other Council products referenced in this report are posted on the Council's website at <http://gov.texas.gov/twic>.

## *Planning System Progress*

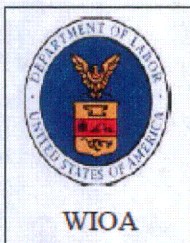
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FY 2015 was the sixth and final year of the six-year plan period for *Advancing Texas: Strategic Plan for the Texas Workforce System (FY2010-FY2015) (Advancing Texas)*. Development and implementation of an integrated strategic plan for Texas' workforce system – a complex system of interrelated programs and numerous agencies – is one of the Council's primary responsibilities. The plan outlined 14 long term objectives and a series of action plans for workforce system partners to ensure effective implementation and achievement of outcomes in the plan. The final evaluation and report on progress achieved under this plan will be released in December 2015.



Subject to Texas Government Code, Chapter 325 (Texas Sunset Act), the Council underwent a review by the Sunset Advisory Commission. This review culminated during the 84<sup>th</sup> Session of the Texas Legislature with action to reauthorize the Council's statutes and make other changes recommended by Sunset staff. The formal review of the Council began in May 2014 and lasted through January 2015. The recommendations included continuing the Council for 12 more years, aligning future Sunset reviews with those of the Texas Workforce Commission, and abolishing the Texas Skill Standards Board and transferring its functions to the Council. The recommendations were drafted into the Council's sunset bill, House Bill 1606, which was passed and signed by the Governor, and became effective on September 1, 2015.



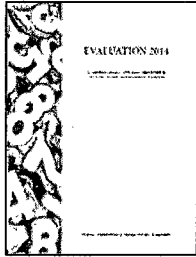
The **Workforce Innovation and Opportunity Act** of 2014 (WIOA) was enacted on July 22, 2014. The WIOA authorizes Texas to maintain the current structure and functions of the Council. The legislative provisions are designed to help job seekers access employment, education, and support services. The new law is also designed to improve services to employers by emphasizing the use of career pathways

and promoting work-based training and employment focused on in-demand occupations. The Council will assist in the development and review of the state plan which will consist of strategic and operational planning elements that describe the state's vision, goals, and strategies for preparing an educated and skilled workforce to meet employer needs. The WIOA promotes better alignment and strengthens collaboration with core programs: Title I, workforce development activities, authorizes the one-stop delivery system with which state and local workforce development training and employment activities must be coordinated; Title II, adult education and literacy, authorizes education services for basic skills, secondary education, literacy activities, and English language training to assist adults in improving their skills; Title III, Wagner-Peyser Act of 1933, authorizes the public employment-related services that provide job search and job matching assistance to unemployed individuals through the one-stop system; and Title IV, Rehabilitation Act of 1973, provides employment-related services to individuals with disabilities.

The Council's **System Integration Technical Advisory Committee** (SITAC) fostered collaboration and engaged executive-level representatives from the eight partner agencies, the Texas Association of Workforce Boards, and the Council's Executive Committee in developing, implementing, and monitoring the *Advancing Texas*' action plans, and reporting to the Council. FY 2015 progress on these action plans highlights the effectiveness of interagency collaboration.



## Evaluating System Progress



The Council is required by Texas Government Code, Chapter 2308, to monitor the state's workforce system. Annually, the Council reports to the Governor and legislature on the degree to which the system is achieving the state and local workforce goals and objectives of Texas' workforce system strategic plan, *Advancing Texas*. **Evaluation 2014** was the fifth comprehensive workforce system report under this strategic plan. Significant accomplishments and performance data for 19 workforce programs, as well as five secondary and postsecondary academic education programs, are included. When published in early 2015, **Evaluation 2015** will be the sixth and final evaluation for the *Advancing Texas* strategic plan period. Some of the Council's FY 2015 accomplishments are highlighted below.

As the State Workforce Investment Board, the Council is charged with the approval of Texas' **Title I of the Workforce Investment Act (WIA) and the Wagner-Peyser Senior Community Service Employment Program State Plan (Program Years 2012-2016)**, which make receipt of WIA formula funding possible. The Council endorsed and recommended to the Governor for approval the State Strategic Workforce Investment Plan for Title I of the Workforce Investment Act of 1998 and the Wagner-Peyser Act on September 7, 2012. The Governor subsequently approved the plan on September 12, 2012. Contained in the plan was the Senior Community Service Employment Program State Plan. During FY 2015, the Senior Community Service Employment Plan for program year 2015 was updated by the Texas Workforce Commission (TWC), which necessitated review and endorsement by the Council, with subsequent recommendation to the Governor for approval. The Council approved the Senior Community Service Employment Plan as a modification to the state plan on March 6, 2015, and the Governor approved the plan on March 24, 2015.

### **Identifying Skills Gaps**

The Texas Government Code directs the Council to evaluate the effectiveness of the workforce system. The Council reached out directly to Texas employers to attempt to quantify types of shortages and hiring difficulties at the regional level and what consequences these issues may have for employers. The Council developed the 2015 Survey of Texas Employers, a survey instrument for Texas employers based on a sample of employers drawn from the state's unemployment insurance database. In 2015, the council contracted the **Public Policy Research Institute at Texas A&M University** to administer the survey. The objective was to analyze at the regional level, the types of workers needed, the qualifications and skills required, and what types of job openings are difficult to fill.

The Council is responsible for making **Apprenticeship Funding Formula Recommendations** related to the distribution of available funds in the next fiscal year and administrative procedures for requesting state funds for the apprenticeship programs funded under Chapter 133 of the Texas Education Code. The

Council considers the rate of reimbursement for contact hours made to training providers in apprenticeship programs, funding for new and existing apprenticeship programs that have not yet received Chapter 133 funds, and apprenticeship instructor training. On March 6, 2015, the Council approved and transmitted to the TWC for action the recommendations of the Apprenticeship and Training Advisory Committee.

## ***Conducting Research***

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The Council supports system planning and evaluation functions through a suite of research products and news updates that are distributed to members, system partners, and workforce system stakeholders, and which are available on the Council's website.

The Council's primary products include the strategic plan for the workforce system, evaluation reports and resource publications, reports on critical emerging issues, and recommendations to the Governor. In addition, a series of communication pieces that supports the work of workforce system partners is published quarterly.

The Council identified a need to better understand the tools and approaches used to determine educational supply and employer demand for workforce skills. In 2014, the Council contracted with the Ray Marshall Center at the University of Texas to undertake a research study analyzing the tools, approaches, and available data used in Texas. Findings showed that a number of stakeholders in Texas find such data useful to their organizations. However, few reported that the tools to which they currently have access provide satisfactory supply/demand information. Significant demand for better gap analysis reports was also expressed. Nearly all respondents indicated that provisions of such data and reports by region would be beneficial to their work. Florida's online supply/demand analysis tool was identified as a best practice tool for producing up-to-date supply/demand data and reports. The system provides comprehensive and timely occupational data.

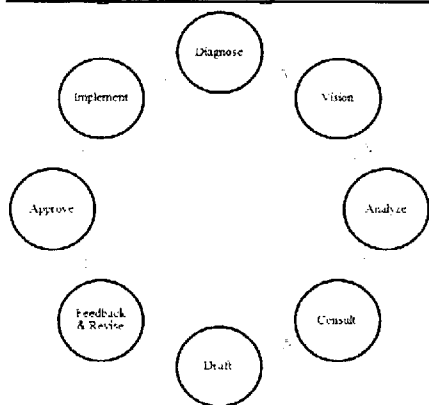


**Policy News Highlights** is a quarterly review of selected reports relevant to the policy and research functions of the Council. Federal and state agency websites, in addition to numerous public policy and educational databases, are scanned monthly for relevant and emerging issues. Through summaries of recent publications, the newsletter provides an overview of current topics, trends, and issues affecting the workforce and the workforce system. Topic areas include adult education; apprenticeship; college and career readiness; competitiveness; career technical education; cluster and sector strategies; data; disabilities; supply and demand; and training.

**Return on Investment (ROI)** studies are relevant to the Council's duty to evaluate the effectiveness of the workforce system. ROI studies and measures are used to determine what economic benefit is produced in return for the money spent on any given program or service. ROI analysis is an attempt to determine how much money will be made (or lost) relative to the money invested. In consideration of applying such calculations to public policy expenditures, the Council conducted an extensive analysis on relevant ROI studies to synthesize possible models for a potential ROI project in Texas. The study provided projections of time and costs involved, a review of data currently available, and what additional data may be needed. Findings determined that a comprehensive workforce system ROI project would provide significant value, create a benchmark to measure changes in both system and component program effectiveness, and could become essential to understanding and explaining the benefits of workforce programs.

The Council monitored activity of the **84<sup>th</sup> Regular Session of the Texas Legislature** for bills of particular importance to the Council, its partner agencies, and other stakeholders in Texas' workforce system. Council staff tracked bills that, if passed, would have a significant effect on the programs or agencies in the Texas workforce system. In particular, the Council focused on those legislative actions that would fund critical needs, expand capacity, align programs, and create seamless and flexible career pathways for all Texans. During the regular session, the legislature passed and the Governor signed 22 of the 77 bills that were tracked by the Council.

## Strategic Planning for the Texas Workforce System



Texas Government Code, Section 2308.104, mandates that the Council develop a single strategic plan for the state's workforce system. The plan must include goals, objectives and performance measures for the workforce system that involve programs of all state agencies that administer workforce programs. Senate Bill 429, passed by the 77<sup>th</sup> Legislature, established the following state agencies as the workforce system partners: Texas Workforce Commission, Texas Education Agency, Texas Higher Education Coordinating Board, Economic Development and Tourism, Texas Health and Human Services Commission – Department of Assistive and Rehabilitative Services, Texas Juvenile Justice Department, Texas Department of Criminal Justice – Windham School District, and Texas Veterans Commission.

Approved by the Council in September 2015, the FY 2016 to FY 2023 strategic plan for the Texas workforce system focuses on the vision of the current and future system and the issues that must be addressed to strengthen that system as articulated by the Council, its agency partners, and employers.

The Council's eight workforce partner agencies have collaborated in the strategic planning activities with the Council through representation on the Council, on the System Integration Technical Advisory Committee (SITAC), and through listening sessions conducted over the preceding 24 months. The Council's commitment to developing an inclusive, systems-approach strategic plan that is built on the key issues and opportunities identified by partner agencies during the listening sessions was achieved through early involvement of all system partners. Continuous opportunities to obtain input from Council members and system partners were employed to develop a shared understanding and alignment of priorities, objectives, and desired outcomes. A common action and reporting framework for use across all system, program, and service components is included in the plan.

The Council and SITAC drafted the preliminary vision and mission. The Executive Committee finalized the vision, mission, goals, system objectives, and agency strategies for the Council's consideration. The Council also heard the proposed actions, timelines, and performance measures for each strategy from each agency responsible for the strategy.

The draft strategic plan was reviewed by the Council in June and posted to the *Texas Register* for a 30-day public comment period. In September 2015, The Council formally considered and approved the plan. The FY 2016 to FY 2023 strategic plan for the Texas workforce system was submitted to the Governor for approval. Key performance areas of the plan include: focus on employers, engage in partnerships, align system elements, and improve and integrate programs.

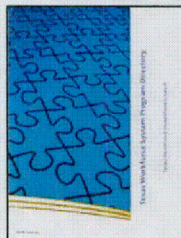
The implementation of the plan will include a review and update of the plan in the fourth year of implementation. This review and update will identify additional actions, with associated timelines, required to continue work on the long-term system objectives and strategies. It will also include a system scan to determine whether additional strategies should be added in the plan.

***Texas Workforce System Partners and Programs***

Texas workforce system partners collaborate to better align, leverage, and integrate system services to develop a world-class workforce and ensure a higher quality of life for all Texans through educational, employment, and economic success. Eight state agencies, local workforce development boards, community and technical colleges, local adult education providers, and independent school districts actively contribute to statewide programs and those highlighted in this report.

The table below shows the partners and primary and supporting programs that comprise the FY 2015 Texas workforce system:

<b>FY 2015 Texas Workforce System Partners and Programs</b>	
<p><b>Texas Department of Criminal Justice</b></p> <ul style="list-style-type: none"> <li>• Postsecondary Academic and Technical Education</li> <li>• Windham School District                             <ul style="list-style-type: none"> <li>Secondary Academic Education</li> <li>Secondary Technical Education</li> </ul> </li> </ul> <p><b>Texas Education Agency</b></p> <ul style="list-style-type: none"> <li>• Secondary Schools                             <ul style="list-style-type: none"> <li>Academic Education</li> <li>Career and Technical Education</li> </ul> </li> </ul> <p><b>Texas Health and Human Services Commission and its Department of Assistive and Rehabilitative Services</b></p> <ul style="list-style-type: none"> <li>• Temporary Assistance for Needy Families</li> <li>• Rehabilitation Services</li> <li>• Services for the Blind or Visually Impaired</li> </ul> <p><b>Texas Higher Education Coordinating Board</b></p> <ul style="list-style-type: none"> <li>• Community and Technical Colleges                             <ul style="list-style-type: none"> <li>Academic Education</li> <li>Technical Education</li> </ul> </li> </ul>	<p><b>Texas Juvenile Justice Department</b></p> <ul style="list-style-type: none"> <li>• Secondary Academic Education</li> <li>• Secondary Technical Education</li> </ul> <p><b>Texas Veterans Commission</b></p> <ul style="list-style-type: none"> <li>• Veterans Employment and Training</li> </ul> <p><b>Texas Workforce Commission</b></p> <ul style="list-style-type: none"> <li>• Adult Education and Literacy</li> <li>• Apprenticeship Training, Chapter 133</li> <li>• Choices Program for TANF Adults</li> <li>• Employment Services</li> <li>• Self-Sufficiency Fund</li> <li>• Senior Community Service Employment Program</li> <li>• Skills Development Fund</li> <li>• Supplemental Nutrition Assistance Program Employment and Training</li> <li>• Trade Adjustment Assistance/NAFTA</li> <li>• Workforce Innovation and Opportunity Act                             <ul style="list-style-type: none"> <li>Adult</li> <li>Dislocated Workers</li> <li>Youth</li> </ul> </li> </ul>



***Texas Workforce System Program Directory: A Guide to Funding and Programs Related to the Texas Workforce System (Directory)*** catalogues the many programs comprising the Texas workforce system into one publication. A companion document to the system strategic plan and the annual evaluation report, it details workforce development programs and related academic programs administered by the state's workforce system partner agencies. A concise reference for policy makers and stakeholders, the *Directory* is distributed to system partners and stakeholders, and is posted on the Council's website.

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**TWIC BRIEFING ITEM  
MEMORANDUM**

REF: RW.twic.II6.120415

**TO** Council Members**SUBJECT** Research Report: Defining Middle-Skill STEM Occupations in Texas**Introduction**

The Texas Workforce Investment Council (Council) operates as the state workforce board required by the federal Workforce Innovation and Opportunity Act of 2014 and is charged in state statute with developing a strategic plan for the Texas workforce system. The role of the Council is strategic; it provides research, information, and analysis that facilitates collaboration between system partners and relevant stakeholders, and alignment between elements of the Texas workforce system.

Within the purview of the Council, middle-skill science, technology, engineering, and mathematics (STEM) occupations are growing and becoming increasingly important in Texas. As articulated in the new workforce system strategic plan for fiscal years 2016–2023, middle-skill STEM occupations are one of several issues that have cross-partner implications. The research report attached to this briefing item supports workforce system partners to develop strategies that better address middle-skill STEM occupations in the Texas workforce. Additionally, this research supports other Council projects, such as industry-based certifications and the 2015 employer survey. This memorandum offers a brief summary and other relevant information for members to consider.

**Background**

More than ever, employers are seeking qualified workers with tangible, industry-relevant job skills to keep pace with changes in technology and the workforce system. Specifically, many occupations now require some level of STEM skills and knowledge. These occupations can be found in a myriad of industries with many offering significant employment opportunities. However, national workforce research has focused on STEM occupations that require four-year degrees or higher. This overlooks many middle-skill occupations—those that require education and training above a high school diploma but less than a four-year degree—that offer high wages and employment growth. These occupations are also commonly associated with important workforce credentials, such as, industry-based certifications, certificates, and associate degrees.

**Attachment**

1. Defining Middle-Skill STEM Occupations in Texas

**Discussion**

While definitions of middle-skill jobs are consistent nationwide, there has been less agreement regarding the definition of STEM occupations. Varying definitions of STEM occupations have produced inconsistent workforce statistics, which can impact economic policies. Accurately defining and classifying STEM occupations is an important step to identifying middle-skill STEM occupations. The remainder of this memorandum will briefly explain each section of the report. Additionally, it will describe the process utilized to identify a list of middle-skill STEM occupations. This research will



provide improved understanding of middle-skill STEM occupations and their contribution to the Texas economy.

## **Structure of the Report**

### *Understanding Middle-Skill STEM Occupations*

The primary goal of this report is to present research conducted on middle-skill STEM occupations. As such, this section summarizes information regarding the way middle-skill STEM occupations are defined and their impact on the economy and workforce. STEM occupations have generally been identified as high-skill jobs within the fields associated with the acronym. However, many occupations once considered non-STEM now require STEM-related skills and knowledge. Combined with vague federal guidelines, classifications of STEM occupations differ between many stakeholders. This has created confusion regarding estimates of national middle-skill STEM employment.

### *Classifying Workers and STEM Occupations*

In order to identify middle-skill STEM occupations, STEM occupations must first be accurately classified. For consistency purposes, this research utilizes the Standard Occupational Classification (SOC) system. Based on SOC detailed occupation codes, STEM-classified occupations were determined from 11 different sources from nine federal, state, and institutional organizations. Each source considered a different number of occupations as STEM. In all, 257 out of 840 detailed SOC occupations were identified as STEM by at least one of the 11 sources. Of the 257 identified STEM occupations, 42 were considered STEM by all 11 sources.

### *Middle-Skill STEM Occupations in the National Workforce*

Based on the identified STEM occupations, a list of middle-skill STEM occupations was constructed. Federal designations regarding typical education and training levels for entry were added to the 257 STEM occupations. From the list of occupations identified as STEM, 84 were identified as middle-skill STEM occupations. Of the 42 STEM occupations matched across all 11 sources, only five were considered middle-skill STEM by every source.

The list of 84 middle-skill STEM occupations were then examined based on national workforce data. Four major SOC occupation groups were then selected for further discussion.<sup>1</sup> Combined, the four groups contain 55 of the 84 identified middle-skill STEM occupations. Each occupation group was broadly described from a national perspective. Additionally, associated middle-skill STEM occupations within each group are highlighted.

### *Middle-Skill STEM Occupations in the Texas Economy*

In Texas, middle-skill STEM occupations continue to grow as the direction of the economy increasingly integrates science and technology with industries such as, manufacturing, construction, and energy. Workers in middle-skill STEM occupations around the state are able to command high wages and have access to increased job opportunities.

The final step in this research generated a list of middle-skill STEM occupations important to the Texas economy. In addition to the list of 84 middle-skill STEM occupations, an additional 12 middle-skill

<sup>1</sup> The four described major groups are architecture and engineering (SOC 17-0000); life, physical, and social science (SOC 19-0000); healthcare practitioners and technical (SOC 29-0000); and installation, maintenance, and repair occupations (SOC 49-0000).

classified jobs were identified and incorporated.<sup>2</sup> While these additional occupations are not considered STEM by any of the original 11 sources, they require substantial STEM-related skills and knowledge. Thus, a total of 96 middle-skill STEM occupations were identified.

State labor market data was then collected and applied to each of the 96 middle-skill STEM occupations. Four major occupation groups were identified and evaluated based on employment growth and wage potential.<sup>3</sup> After that, an additional seven detailed middle-skill STEM occupations were highlighted and evaluated to determine employment and wage opportunities relative to specific regions in Texas.<sup>4</sup>

### *Appendix One*

The steps taken in the research to develop the list of middle-skill STEM occupations for Texas are broadly explained in this section. In all, three major steps were followed. The first step details the process used to identify STEM occupations from national sources and associated cataloging procedures. The second step describes the method used to compile the most nationally comprehensive list of middle-skill STEM occupations. The third step describes the process used to determine the additional middle-skill STEM occupations relevant to Texas and the application of associated workforce data.

### *Appendix Two*

The entire list of STEM occupations identified from the 11 sources are organized and presented by their associated national organizations. The list of STEM occupations are placed in numerical order based on detailed SOC codes. Codes highlighted in yellow indicate occupations identified as STEM by all sources.

### *Appendix Three*

The list of middle-skill STEM occupations derived from those in appendix two are presented. They are numerically ordered by detailed SOC codes and occupations considered STEM by all of the 11 sources are indicated in yellow.

### *Appendix Four*

This appendix presents the final list of middle-skill STEM occupations that were considered relevant to the economy of Texas. Occupations are numerically organized by detailed SOC codes and those highlighted in blue represent the additional middle-skill STEM occupations that were identified and incorporated with the list developed in appendix three. Estimates of state employment (absolute and percent change) and annual average wages are matched to their corresponding occupations.

## **Recommendation**

It is recommended that the Council note the information contained in this briefing item.

<sup>2</sup> The additional 12 middle-skill STEM occupations are dental assistants (SOC 31-9091); medical assistants (SOC 31-9092); operating engineers and other construction equipment operators (SOC 47-2073); electricians (SOC 47-2111); hazardous materials removal workers (SOC 47-4041); welders, cutters, solderers, and brazers (SOC 51-4121); welding, soldering, and brazing machine setters, operators, and tenders (SOC 51-4122); power plant operators (SOC 51-8013); gas plant operators (SOC 51-8092); dental laboratory technicians (SOC 51-9081); medical appliance technicians (SOC 51-9082); and ophthalmic laboratory technicians (SOC 51-9083).

<sup>3</sup> The four major groups analyzed for Texas are healthcare practitioners and technical (SOC 29-0000); healthcare support (SOC 31-0000); construction and extraction (SOC 47-0000); and production occupations (SOC 51-0000).

<sup>4</sup> The seven middle-skill STEM occupations used for the regional analysis of Texas are computer user support specialists (SOC 15-1151); registered nurses (SOC 29-1141); licensed practical and licensed vocational nurses (SOC 29-2061); medical assistants (SOC 31-9092); electricians (SOC 47-2111); automotive service technicians and mechanics (SOC 49-3023); and welders, cutters, solderers, and brazers (SOC 51-4121).

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# Defining Middle-Skill STEM Occupations in Texas

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## Executive Summary

Technological advances across all industries have increased the need for further workplace specialization. Specifically, industry specialization has revolved around education and occupations that emphasize science, technology, engineering, and mathematics (STEM). Stakeholders and policymakers at every level are pursuing methods to improve education and training programs that produce qualified workers. Across every educational level, STEM-oriented postsecondary awards continue to increase.

Despite concerted efforts, industries around the nation are still struggling to find qualified workers to fill critical jobs. At the same time, the demand for middle-skill workers with STEM-related training continues to increase. This creates a situation where in-demand middle-skill jobs—those requiring workers with education beyond high school but less than a four-year degree—remain vacant. Consequently, middle-skill STEM occupations have become a major priority for workforce system stakeholders and policymakers.

While concerns over the available supply of middle-skill STEM workers have increased, consistent and accurate research regarding these occupations remains limited. The majority of workforce research has focused on issues relating to educational attainment at or above a four-year degree and occupations associated with those credentials. Therefore, the goal of this report is to present research on middle-skill STEM occupations in the workforce. In particular, this report offers a method for identifying and analyzing middle-skill STEM occupations important to the Texas economy.

This report will first establish the research purpose and provide a clear definition of middle-skill STEM occupations. Next, the process for classifying workers and STEM occupations is described. Middle-skill STEM occupations are then identified and evaluated. Finally, employment and wage information are applied to a list of middle-skill STEM occupations relevant to Texas. Selected occupations are evaluated to understand their importance to the state's economy.

## Section 1: Understanding Middle-Skill STEM Occupations

### Research Scope

As the national economy continues to improve and grow, more workers will be needed for new and replacement positions in the workforce. New advancements in technology further accelerate economic expansion, often resulting in adjustments to the very nature of work. The rising demand for science, technology, engineering, and mathematics (STEM) trained workers reflects these changes.

Recent reports and surveys indicate that businesses around the nation are having difficulty locating people with the STEM skills and knowledge to fill jobs. A national skills gap is often identified as a cause for various economic issues.<sup>1</sup> However, conflicting research suggests there is insufficient evidence to indicate any significant labor shortages or hiring difficulties for STEM occupations. These data indicate an oversupply of native- and foreign-born STEM workers with four-year or advanced degrees compared to the number of available STEM jobs. The linkage of employment projections and gaps for middle-skill STEM jobs is an area that remains obscure.<sup>2</sup>

While STEM graduates and workers are key components of the national economy, this report does not explore the debate over national skill gaps or employment shortages. Instead, the purpose of this report is to present research conducted on middle-skill STEM occupations. As a critical segment of the workforce, middle-skill STEM occupations are often understudied and misunderstood. National attention has largely focused on the supply of four-year and graduate-level STEM workers, often overlooking middle-skill STEM occupations where employment shortages may be more prevalent. To improve workforce analyses and decision making, this report offers a method to identify and classify middle-skill STEM occupations in Texas.

### What Are Middle-Skill STEM Occupations?

Defining middle-skill STEM occupations is important before any occupations can be classified or analyzed. This report utilizes the most widely accepted definition of middle-skill occupations—those that require education and training greater than a high school diploma but less than a postsecondary four-year degree. This can include subbaccalaureate occupations that require industry-based certifications, associate degrees, or significant on-the-job training, among other credentials.

Conversely, a universally agreed upon definition of STEM occupations does not exist. Instead, traditional conceptualizations of STEM only broadly identify common characteristics. The most basic description of STEM involves high-skill jobs in the fields of science, technology, engineering, and mathematics. These fields are often cross-cutting and build upon each other. Additionally, STEM occupations usually require workers to have knowledge of and utilize computers or other advanced machines. These occupations also generally emphasize training equivalent to or greater than a postsecondary four-year degree.

However, traditional conceptualizations of STEM occupations are losing their relevance as industries continue to evolve and science and technology increasingly permeate all aspects of the workforce. STEM fields are no longer viewed as professions reserved primarily for individuals with four-year degrees or higher. Many occupations once considered non-STEM now require STEM-related skills and knowledge. Continued evaluations based on a limited definition of STEM can be problematic and create workforce analyses that are outdated and inconsistent. Improved evaluations of the workforce must move beyond traditional definitions of STEM to include middle-skill jobs that require STEM knowledge. Middle-skill STEM occupations are a critical segment of the workforce that have not received sufficient attention. These occupations are not only in-demand, they often provide higher wages compared to non-STEM jobs with similar educational requirements.

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<sup>1</sup> Business Roundtable (3 December 2014); ManpowerGroup (2015).

<sup>2</sup> North (2013); Teitelbaum (19 March 2014); Robinson (10 July 2014).



## Middle-Skill STEM in the Workforce System: Background and Employment Information

Further research into middle-skill STEM occupations can provide invaluable information and data for workforce stakeholders. The remainder of this section provides a broad description of the way middle-skill STEM occupations are viewed by various entities. It also illustrates the current status of middle-skill STEM occupations as it pertains to several employment-related indicators. Middle-skill STEM occupations are presented separately for context. While the economic and workforce benefits related to middle-skill STEM occupations are discernible, determining the size of the middle-skill STEM workforce has been difficult due to different classification methods.

### Explaining Middle-Skill Occupations

Generally, middle-skill occupations are described in terms of educational or training levels. The International Standard Classification of Occupations organizes occupations, including those that are considered middle-skill, based on components that include training, skill levels, and any job related tasks or duties. This multinational database exists as a statistical repository for countries to report, exchange, and better understand labor information. The system has even fostered research on international middle-skill occupations.<sup>3</sup>

In the United States, middle-skill occupations have been defined by the U.S. Department of Labor and Department of Commerce as jobs requiring workers with more than a high school diploma but less than a postsecondary degree.<sup>4</sup> The Federal Reserve and other institutions have added both cognitive and manual routine descriptors to identify middle-skill jobs that, in principle, may be carried out by computers.<sup>5</sup>

Middle-skill occupations are associated with a wide range of workforce credentials, from industry-based certifications to apprenticeships to college certificates and associate degrees. Acquiring training or valid credentials are commonly accomplished by passing third-party administered exams, completing course work through community colleges, or fulfilling on-the-job learning requirements. Many of these occupations have consistent or growing job opportunities, especially those that require substantial levels of science and math.<sup>6</sup>

### Middle-Skill Employment

Maintaining a well-trained workforce is vital to economic growth. Over the past several decades, the national economy and workforce has changed. While middle-skill occupations have been traditionally associated with technical or manual jobs, an increasing number of administrative and professional occupations are now viewed as middle-skill. As a critical component of the workforce, middle-skill jobs have generally been considered the primary pathway to the middle class. In the past, a high school education was typically sufficient for workers to earn middle class wages. But national expansion and development have fueled economic growth causing many industries to require greater levels of education and training.

Over a 10 year period, from 2012 through 2022, national employment is predicted to increase by nearly 11 percent, approximately 16 million workers.<sup>7</sup> At the same time, 65 percent of all future jobs will require some type of postsecondary education or training. Of those jobs requiring postsecondary education, nearly half will be in middle-skill occupations.<sup>8</sup> Current national data indicates that approximately 70 million people are employed in middle-skill occupations, representing over 45 percent of all employment.<sup>9</sup> Middle-class wages are generally characterized as earnings between \$35,000 and \$95,000 per year.<sup>10</sup> Based on median wage estimates, the percent

<sup>3</sup> ILO (18 September 2004); Benton, et al. (July 2014).

<sup>4</sup> Perez and Pritzker (11 September 2013).

<sup>5</sup> Autor, et al. (November 2003); Autor (April 2010); Cheremukhin (May 2014).

<sup>6</sup> Holzer and Lerman (March 2008); NSC (August 2011).

<sup>7</sup> BLS (19 December 2013).

<sup>8</sup> Carnevale, et al. (26 June 2013).

<sup>9</sup> BLS (7 May 2015). Middle-skill occupations relative to low- and high-skill occupations.

<sup>10</sup> Carnevale, et al. (September 2012).

of workers with an associate's degree earning between \$75,000 and \$100,000 are slightly greater than the percentage of those with bachelor's or master's degrees.<sup>11</sup> In terms of median hourly wages, middle-skill occupations typically range from \$13.84 to \$21.13.<sup>12</sup> By obtaining postsecondary education and training for middle-skill jobs, workers can improve their job opportunities and increase their average annual earnings by \$24,000 to \$37,000.

Despite competing perspectives regarding the overall decline of available middle-skill jobs over the past several decades, they still represent a larger share of new openings and replacements compared to low- and high-skill occupations.<sup>13</sup> Many future new and replacement middle-skill jobs will be concentrated in several occupational fields, such as, manufacturing, healthcare, and construction.<sup>14</sup> Middle-skill data for states also reflect similar trends—projections indicate that middle-skill occupations will continue to make up the majority of all skilled workers for nearly every state. As the largest segment of the national workforce, most estimates show a strong current and future demand for middle-skill jobs.

### **Categorizing STEM Occupations**

The creation and popularization of the term STEM is often credited to the National Science Foundation. It crosses all grade levels in the educational spectrum and, in some form, encompasses one of the four subjects that make up the acronym.<sup>15</sup> Depending on the source, STEM occupations may be described very narrowly or broadly. The America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Reauthorization Act of 2010 broadly views STEM to include academic and professional disciplines.<sup>16</sup> This characterization provides federal entities wide latitude to approach and determine STEM occupations.

For instance, the National Science and Technology Council limits STEM to technology, engineering, mathematics, and physical and natural science disciplines. This cabinet-level council of the executive branch recognizes formal or informal and in-school or out-of-school options for education and training for STEM occupations.<sup>17</sup> The U.S. Department of Commerce views STEM occupations as technical support and professional jobs in computer science, mathematics, engineering, and life and physical sciences. This characterization includes several occupations considered to be indirectly related to STEM and jobs that require or utilize STEM-related training, but excludes social scientists and educational jobs.<sup>18</sup>

Alternatively, the National Science Foundation's interpretation does include social scientists and certain educational professions. This broader approach not only encompasses core science fields, but also disciplines such as economics, political science, and psychology.<sup>19</sup> Moreover, the U.S. Department of Homeland Security recently expanded its original classification of STEM to include fields of study that lead to professions in pharmaceuticals and economics.<sup>20</sup>

### **STEM Workforce Statistics**

As stakeholders around the nation discuss ways to increase interest and employment in STEM, many disagree on the number of STEM workers in the workforce due to the method by which STEM occupations are classified. Private sector estimations indicate that total national employment in STEM ranges from five million to over 10

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<sup>11</sup> Sommers and Morisi (April 2012).

<sup>12</sup> NELP (August 2012).

<sup>13</sup> Holzer and Lerman (February 2009); NSC (2014).

<sup>14</sup> Carnevale, et al. (November 2011).

<sup>15</sup> Dugger (2010); Gonzalez and Kuenzi (15 November 2012); TIES (2015).

<sup>16</sup> 111<sup>th</sup> Congress (2010).

<sup>17</sup> NSTC (31 May 2013).

<sup>18</sup> Langdon, et al. (July 2011).

<sup>19</sup> NSF (6 August 2013).

<sup>20</sup> U.S. DHS (11 May 2012).

million workers in all fields.<sup>21</sup> Estimates based on federal data illustrates an even wider range of workers employed in STEM or STEM-related occupations—between seven and 16 million workers.<sup>22</sup> Despite variations in employment figures, STEM occupations are expected to increase significantly in the future.

Led by fields such as computing, engineering, research, and physical science, estimates of job growth in STEM through 2024 are promising, significantly outpacing all other occupations. Approximately 80 percent of the fastest growing occupations are in STEM fields.<sup>23</sup> Most states are also anticipating substantial STEM growth; for instance, Texas is expected to represent nearly 10 percent of future STEM opportunities in the nation.<sup>24</sup> Additionally, when compared to all occupations, jobseekers for STEM occupations traditionally have lower unemployment rates and greater opportunities. This difference can be seen across the nation and is especially significant for workers seeking STEM-related healthcare positions. Not only are jobs in STEM fields available, an increasing number of STEM-trained workers are finding employment in non-STEM fields.<sup>25</sup>

STEM occupations, regardless of education level, also offer higher wages that are consistent over time.<sup>26</sup> National data shows that STEM occupations can provide average annual wages of \$80,000, nearly twice the annual average for all jobs in the nation. The distribution of earnings within STEM occupations can vary, with engineering and information technology jobs predominantly responsible for increasing wage estimates since these occupations usually have higher base wages. Nevertheless, even the lowest paying STEM occupations provide workers with average annual wages around \$50,000.<sup>27</sup>

Despite the role that all STEM-trained workers have in the modern economy, descriptions of STEM workers and occupations have focused predominately on those that achieve at least a postsecondary four-year degree. This focus has unintentionally created research and policy that overlooks the impact and importance of middle-skill workers with STEM-related training.<sup>28</sup>

Overlooking the value of middle-skill STEM occupations has produced several issues. One major concern involves the inconsistent tracking of workforce relevant statistics. National estimates of middle-skill STEM employment range from 1.2 to 7.4 million workers, which illustrates the drastic variance between entities collecting workforce data.<sup>29</sup> Considered as a percentage of total national employment, middle-skill STEM workers represent anywhere from less than one percent to six percent of the workforce. This wide variance is startling considering that middle-skill STEM workers make up more than one-third of all national STEM-related workers. Moreover, estimates indicate that of those middle-skill STEM workers, more than 40 percent have an associate's degree.<sup>30</sup>

More than ever, opportunities to participate in STEM occupations are increasingly available to workers with subbaccalaureate education and training. Of all available STEM jobs, about half are available to workers without a bachelor's degree.<sup>31</sup> More than 60 percent of middle-skill STEM jobs require six months or less of formal classroom training.<sup>32</sup> In many instances, middle-skill STEM workers obtain workforce-related education and training in order to operate in highly specialized environments. Based on educational attainment levels, more middle-skill workers are employed in STEM or STEM-related occupations than workers that have a bachelor's degree.

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<sup>21</sup> Information (30 November 2012); Camarota and Zeigler (May 2014).

<sup>22</sup> BLS (May 2014); Vilorio (Spring 2014).

<sup>23</sup> AMT (2015).

<sup>24</sup> Educate Texas (28 January 2015).

<sup>25</sup> Langdon, et al. (July 2011); Change the Equation (2015); BLS (25 March 2015).

<sup>26</sup> Carnevale, et al. (November 2011).

<sup>27</sup> Jones (April 2014); Vilorio (Spring 2014).

<sup>28</sup> Rothwell (10 June 2013).

<sup>29</sup> BLS (May 2014). Estimates calculated from occupational employment statistics based on various classifications of middle-skill STEM jobs.

<sup>30</sup> Estimates based on Census employment characteristics of STEM occupations.

<sup>31</sup> AMT (2015).

<sup>32</sup> Carnevale, et al. (September 2012).

## **Developing a List of Middle-Skill STEM Occupations**

As this section illustrated, middle-skill STEM occupations are critical to the workforce system. National estimates indicate significant growth and economic opportunities for workers in many middle-skill STEM occupations. However, these occupations have often been underserved by workforce research in favor of jobs requiring at least a four-year degree. Additionally, national stakeholders have further obscured the subject by offering inconsistent definitions or classification principles. Consistently defining middle-skill STEM occupations is essential to producing accurate information.

The next section examines the initial process for identifying middle-skill STEM occupations. The section begins by briefly describing the method for classifying occupations. In addition, the section explains the process and relevant sources used in this report to identify STEM occupations. Selected sources are organized in order to create a list of STEM occupations for further analysis.

## Section 2: Classifying Workers and STEM Occupations

### Classifying Workers by Occupational Categories

As the previous section illustrated, estimates of the middle-skill and STEM workforces can differ. One reason for the significant variance is due to the way stakeholders have defined and classified STEM occupations. Accurately classifying STEM occupations is the first step to identifying middle-skill STEM occupations. This section offers relevant background information creating the basis for identifying middle-skill STEM occupations.

Developing the framework begins with a general description of the Standard Occupational Classification (SOC) system. The occupation code standards established by the SOC system form the structure used to compare occupations across various sources. After discussing the SOC system, an annotated description of each STEM occupation classification source is presented. Each organization identifies and determines a different number of jobs as STEM or STEM-related.

Occupational information has long been collected as part of the national census. However, a thorough effort to collect more accurate occupational data did not occur until the SOC system was created in the late 1970s. The SOC system was created to replicate the occupational structure of the nation, and as such, does not include every available individual job title. Instead, SOC organizes jobs and individual titles by designed classification principles. The SOC system organizes and classifies occupations based on similar job duties, skills, education, or training. Thus, while the SOC system includes fewer detailed occupation codes compared to the total number of possible jobs, in general, the system identifies the broadest list of occupations for pay or profit in the national economy.

The SOC system serves as a tool for numerous entities across the nation to efficiently identify, organize, and analyze workforce data. For instance, the U.S. Bureau of Labor Statistics and the U.S. Census Bureau are charged with gathering and publishing information on national employment figures for SOC occupations. The SOC system organizes and codes jobs into 23 major, 97 minor, and 461 broad occupation groups totaling 840 unique and detailed occupations by which workers can be classified. Since its inception, the SOC system has been revised and updated to accurately reflect the economy and workforce system. The 2010 SOC system is currently under revision in preparation for an update in 2018.<sup>33</sup>

### Classifying STEM Occupations

Using SOC detailed occupation codes to standardize the identification process, this report combines and compares data of 11 sources from nine federal, state, and institutional organizations based on the occupations each recognizes as STEM (see Appendix 1, Step 1, for process details). Based on specific standards, each organization distinguishes a different number of STEM occupations. The number of occupations classified as STEM by each organization ranges from a low of 85 to a high of 184 out of the total 840 SOC detailed occupations. A brief description of the nine organizations and the 11 data sources are presented next.

#### 1. *Bureau of Labor Statistics (BLS)/Occupational Employment Statistics (OES)*<sup>34</sup>

As part of the OES publication series, the BLS highlights employment and wage statistics with emphasis on STEM occupations. The report includes a list of occupations used in the OES STEM definition. The OES survey provides employment information on wage and salary jobs in nonfarm industries. Besides typical scientific, engineering, and mathematical occupations, the BLS/OES classification includes several managerial, postsecondary teaching, and sales occupations that are associated with and generally require scientific or technical training. In total, 100 detailed occupations are identified as STEM.

<sup>33</sup> BLS (2015).

<sup>34</sup> Watson (August 2014).

## 2. *U.S. Census Bureau (Census)*<sup>35</sup>

The Census methodology for defining STEM occupations follows recommendations from the Standard Occupational Classification Policy Committee. The path between the Census occupation codes and the SOC codes creates a STEM occupation list that distinguishes between STEM, STEM-related, and non-STEM jobs. The Census list of STEM occupations includes computer, mathematical, engineering, and social science groups, while STEM-related jobs are concentrated in healthcare-oriented occupations. Educational teaching occupations at any level are excluded because the Census does not include teaching sectors in its identification of STEM jobs. Occupations that are distinguished as STEM or STEM-related by the Census are combined and broadly cataloged as STEM for this report. In total, 163 detailed occupations are identified as STEM or STEM-related.

## 3. *Center on Education and the Workforce (CEW)*<sup>36</sup>

The CEW provides research on connections between education and training, the workforce, and labor market demands. This report uses two studies conducted by the CEW. The 2010 CEW study examines the relationship between future jobs and the associated educational requirements. The study defines STEM occupations within five occupational groups: computer and mathematics, architects and technicians, engineers and technicians, life and physical sciences, and social sciences.

The 2011 CEW study focuses exclusively on the growth and demand of STEM occupations, along with an examination of trends and STEM competencies. The 2011 study includes most of the STEM occupations from the 2010 study, except it excludes STEM social scientists and middle-skill technical workers. In total, 96 and 85 detailed occupations are identified as STEM in the 2010 and 2011 CEW studies, respectively.

## 4. *U.S. Department of Commerce (Commerce)*<sup>37</sup>

The Commerce report provides a broad overview of the STEM workforce, including employment, wage, and educational data for STEM workers. The report expands on traditional STEM occupations to include professional and technical support jobs in STEM fields. It counts STEM-associated management occupations, but excludes education jobs and social scientists. STEM occupations are analyzed and determined from the SOC system of broad and detailed occupation codes. In total, 85 detailed occupations are identified as STEM.

## 5. *Florida Department of Economic Opportunity (FLDEO)*<sup>38</sup>

As part of the process to improve the state's economy, Florida has increased emphasis on STEM-oriented education and training to fulfill various workforce needs. Florida operates a state-specific list of occupations that identifies STEM jobs. In conjunction with BLS, the FLDEO created a STEM occupation list based on statewide industry priorities, among other things. The list matches SOC codes and occupations to state-specific codes and estimates of education level for entry. As expected, the types of occupations considered STEM by the FLDEO are state specific, including several management, business, media, and production occupations. In total, 156 detailed occupations are identified as STEM.

## 6. *National Science Foundation (NSF)*<sup>39</sup>

The NSF examines the science and engineering (S&E) workforce by highlighting major national and international topics, including, educational, labor force, and employment trends. The NSF considers the broader classification of

<sup>35</sup> Census (2015a).

<sup>36</sup> Carnevale, et al. (15 June 2010); Carnevale, et al. (20 October 2011).

<sup>37</sup> Langdon, et al. (July 2011).

<sup>38</sup> FLDEO (2015).

<sup>39</sup> NSF (2014).

STEM occupations to include S&E occupations as well as computer, management, and technical jobs. The NSF report distinguishes between occupations that directly or indirectly use STEM skills and knowledge.

Based on SOC major groups, direct STEM jobs include computer and mathematical occupations, architecture and engineering occupations, life, physical, and social science occupations, and postsecondary S&E educators. Indirect STEM jobs encompass certain managers, technicians, and technologists. STEM or STEM-related occupations are analyzed and identified from the NSF's classification of these major occupational groups. In total, 116 detailed occupations are identified as STEM.

### **7. Occupational Information Network (O\*Net) STEM Career Cluster and STEM Discipline<sup>40</sup>**

The O\*Net system uses a content-based framework to identify specific characteristics of individual occupations that can be applied across multiple sectors or industries. This framework includes six features: worker characteristics, worker requirements, experience requirements, occupational requirements, workforce characteristics, and occupation-specific information.

O\*Net Career Cluster outlines jobs in the same field that require similar skills. It includes jobs that require planning, managing, and providing scientific research and other technical professions. O\*Net Career Cluster emphasizes educational planning to obtain required competencies in specific career pathways.

O\*Net STEM Discipline organizes occupations by required STEM education and training. While O\*Net's category of STEM Discipline includes a wider range of jobs in all major occupational groups, compared to O\*Net's STEM Career Cluster, it excludes social science professions. Both O\*Net STEM Career Cluster and STEM Discipline exclude nearly all healthcare occupations. In total, 103 and 126 detailed occupations are identified as STEM in the O\*Net STEM Career Cluster and STEM Discipline, respectively.

### **8. Standard Occupational Classification Policy Committee (SOCPC)<sup>41</sup>**

The STEM acronym was commonly used before any formal definition was created. In 2011, at the request of the Office of Management and Budget, the BLS formally defined STEM through the SOCPC. The workgroup identified existing definitions and developed a STEM framework that includes occupations matched to SOC classification principles to ensure consistency across agencies and organizations.

The SOCPC workgroup created a classification system with two major STEM domains—science, engineering, mathematics, and information technology domain and science- and engineering-related domain—each consisting of two subdomains. This categorization distinguishes between primary and secondary types of STEM occupations. The subdomains for primary STEM jobs are life and physical sciences, engineering, mathematics, and information technology occupations and social science occupations. Secondary STEM jobs distinguish between architecture occupation and health occupation subdomains.

The subdomain categories are applied to every SOC detailed occupation code to distinguish between STEM and non-STEM jobs. Moreover, identified STEM occupations are further organized into five types of occupations within each subdomain—research, development, design, or practitioner occupations; technologist and technician occupations; postsecondary teaching occupations; managerial occupations; and sales occupations. In total, 184 detailed occupations are identified as STEM.

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<sup>40</sup> O\*Net (2015).

<sup>41</sup> BLS (2015).

### 9. *Texas Workforce Commission (TWC) Strategic Workforce Assessment Program (SWAP)*<sup>42</sup>

Developed by the TWC as a tool to understand occupational skills and training required for various industry clusters, SWAP provides skill profiles for individual or broad occupations. Among other things, SWAP provides occupational profiles, employment figures, and general education and training requirements. SWAP helps stakeholders identify skills and training by industry cluster or sector based on labor market information. The SWAP program includes a wide range of occupations considered STEM, but excludes social science teachers at any level. In total, 134 detailed occupations are identified as STEM.

### **Analysis of STEM Occupations Across Nationwide Sources**

In all, 11 total sources that identify STEM occupations are collected from nine different organizations. The sources are combined alphabetically to form a comparative list of STEM occupations. Detailed SOC occupation titles and codes are matched to each source to provide a visual overview of jobs classified as STEM (see Appendix 2).

For the most part, occupations considered STEM by each source were already formatted by SOC detailed occupation codes. The Census categorized several STEM occupations in terms of SOC broad groups instead of detailed occupations and the NSF only organized general S&E and S&E-related occupations into categories of STEM or science and technology (S&T).<sup>43</sup> Thus, STEM occupations classified by the Census and NSF required further interpretation to match SOC detailed occupation code standards.

After the STEM occupations are organized, the comprehensive list is analyzed. A total of 257 out of 840 possible detailed SOC occupations are identified as STEM by at least one of the sources. Across all sources, 18 of the 23 major occupation groups are represented. Of those 18 major groups, STEM occupations are concentrated around six major groups.<sup>44</sup> However, only three major groups contain occupations that are considered STEM by all nine organizations, totaling 42 matched STEM occupations (see Appendix 2, matched STEM occupations identified in yellow).<sup>45</sup> Several organizations classified a greater variety of occupations outside of the SOC major groups most commonly associated with STEM occupations.<sup>46</sup>

The next section details the process for identifying occupations considered middle-skill from the analysis of STEM occupations. Based on the list of identified middle-skill STEM occupations, selected major occupation groups are broadly highlighted and described.

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<sup>42</sup> TWC (2015a).

<sup>43</sup> For instance, the Census identifies the entire SOC broad group of software developers and programmers as STEM occupations. The SOC broad group of software developers and programmers encompasses four SOC detailed occupations (computer programmers; software developers, applications; software developers, systems software; and web developers). Using the S&E and S&E-related designations, the NSF groups occupations into general categories (physical scientists, engineers, etc.) and broadly classifies those occupation categories as either STEM or S&T.

<sup>44</sup> The six major groups are management; computer and mathematics; architecture and engineering; life, physical, and social sciences; education, training, and library; and healthcare practitioners and technical occupations.

<sup>45</sup> The three major groups are computer and mathematics; architecture and engineering; and life, physical, and social sciences occupations.

<sup>46</sup> The FLDEO, O\*Net STEM Discipline, and TWC SWAP classify additional STEM occupations in the major groups of business and financial operations; art, design, entertainment, sports, and media; and production occupations, among others.



## Section 3: Middle-Skill STEM Occupations in the National Workforce

### Classifying Middle-Skill STEM Occupations

With the advent of new technologies and processes, more jobs will require STEM or STEM-related skills and knowledge. The analysis of STEM occupations illustrates classification inconsistencies between various sources nationwide. Outside of occupations that are overwhelmingly considered STEM, such as engineering and math related jobs, stakeholders disagree on the total number of STEM occupations in the workforce.

This report constructs a complete list of middle-skill STEM occupations by considering the entire list of STEM occupations (see Appendix 1, Step 2, for process details). With 257 classified jobs, the list of STEM occupations is incorporated with national occupational information regarding typical levels of education required for entry. National data on education and training assignments are obtained from BLS employment projections. Typical entry-level education estimates are based on education and training levels most workers need to enter an occupation. Eight educational categories are identified by the BLS, with half of the categories representing education and training that produces middle-skill workers.<sup>47</sup> Once education and training levels are applied to the list of STEM occupations, jobs representing middle-skill are identified (see Appendix 3).

Of the 257 occupations considered STEM or STEM-related, 84 occupations are identified as middle-skill STEM occupations. The list of middle-skill STEM occupations represent 14 different major occupational groups. The majority of identified middle-skill STEM jobs are located within three BLS major groups—architecture and engineering; life, physical, and social science; and healthcare practitioners and technical occupations. Based on education and training levels, the majority of middle-skill STEM occupations typically require an associate's degree for entry. Moreover, only five occupations are identified as middle-skill STEM of the 42 STEM occupations matched across all sources in section two (see Appendix 3, occupations in yellow are matched across all STEM sources).

### Analysis of Middle-Skill STEM Occupations by Major Occupation Groups

The following segments describe four major occupation groups that encompass many common middle-skill STEM jobs around the nation.<sup>48</sup> Each segment briefly describes the overall major occupational group and its associated middle-skill STEM occupations. Collectively, these four major occupation groups encompass over 7.5 million workers—almost 70 percent of the entire middle-skill STEM workforce in America.

#### ***Architecture and Engineering Occupations (SOC 17-0000)***

The architecture and engineering group includes all occupations associated with these two broad fields, including, surveyors, drafters, and associate technicians. National employment estimates (see Table 1) across the group indicate approximately 2.5 million workers that earn an annual average wage of over \$80,000. Employment in this group is concentrated heavily in service related industries. Top paying occupations are found in industries related to oil and gas extraction, and architecture and engineering information services. Employment is also broadly dispersed throughout the nation, with the highest levels located in California, Texas, Michigan, New York, and Florida.

Middle-skill STEM architecture and engineering occupations constitute almost 30 percent of employment in the group. In terms of employment, aerospace engineering and operations technicians (11,230) and electrical and electronics engineering technicians (137,040) represent the fewest and highest numbers, respectively. The lowest average annual salary belongs to surveying and mapping technicians (\$43,870), while aerospace engineering and

<sup>47</sup> The four BLS categories of education and training that produce middle-skill workers are high school diploma or equivalent; some college, no degree; postsecondary non-degree award; and associate's degree.

<sup>48</sup> The four major groups are architecture and engineering; life, physical, and social science; healthcare practitioners and technical; and installation, maintenance, and repair occupations.

operations technicians earn the highest (\$64,310). Almost every identified middle-skill STEM occupation in this group expects growth either marginal (civil engineering technicians) to faster than average (environmental engineering technicians) over the next decade. Employment as an industrial engineering technician is projected to decline slightly.

**Table 1: National Employment for SOC Major Group: Architecture and Engineering (A&E) Occupations**

	Employment	Hourly Wage (Mean)	Annual Wage (Mean)
All A&E Occupations	2,418,020	\$39.19	\$81,520
A&E STEM	1,735,080	\$44.36	\$92,350
A&E Middle-Skill STEM	682,960	\$26.73	\$55,610

### *Life, Physical, and Social Science Occupations (SOC 19-0000)*

Similar to the previous major group, the life, physical, and social science group encompasses occupations that require some degree of STEM skills and knowledge. Estimates of employment (see Table 2) indicate over one million workers across the nation. The average annual salary for the entire group is slightly above \$70,000, with workers earning an average of \$30 per hour. Employment in this group is primarily concentrated in scientific research and development services. Industries with the highest earning potential are highly specialized, revolving around securities and commodities, monetary authorities, and oil and gas extraction entities. States with the highest number of workers in this group are in California and Texas.

Middle-skill STEM workers in this group make up more than 20 percent of the workforce. Nuclear technicians (6,380) have the smallest employment figures, but have the highest average annual earnings (\$75,960). Representing the most workers, life, physical, and social science technicians (67,140) are primarily employed at colleges, universities, and professional schools. Technicians across several specializations employ the most workers and have average annual salaries over \$45,000. The majority of middle-skill STEM occupations in this group are projected to grow at a faster than average pace over the next decade (i.e. chemical, environmental science and protection, geological and petroleum, and nuclear technicians). Conversely, forest and conservation technician employment is expected to decline.

**Table 2: National Employment for SOC Major Group: Life, Physical, and Social Science (LPS) Occupations**

	Employment	Hourly Wage (Mean)	Annual Wage (Mean)
All LPS Occupations	1,144,440	\$33.69	\$70,070
LPS STEM	878,670	\$38.06	\$79,162
LPS Middle-Skill STEM	265,790	\$23.68	\$49,251

### *Healthcare Practitioners and Technical Occupations (29-0000)*

Healthcare practitioners and technical workers encompass a wide variety of occupations—from medical records technicians to physicians and surgeons. Relative to every major occupational group, healthcare practitioners and technicians have the seventh highest employment number, representing nearly eight million workers (see Table 3). Additionally, this group has the fifth highest average annual wage estimate at over \$75,000. Industries with the most employment and highest wage earners are concentrated in independent physician offices and general medical and surgical hospitals. Workers in this group are primarily concentrated around major metropolitan areas across the nation, especially in California, Texas, New York, and Florida.

Within this group, middle-skill STEM workers represent over 70 percent of the workforce. Registered nurses represent nearly half of all middle-skill STEM healthcare workers (2,687,310), earning an average of nearly \$70,000 annually. Hearing aid specialists employ the fewest number of workers (5,570) and radiation therapists earn the

highest annual average (\$83,710). The job outlook for every middle-skill STEM occupation in this group is projected to grow over the next decade—increasing by nearly 1.5 million workers. Growth for most of these middle-skill STEM jobs are expected to increase much faster than average. Specifically, employment for registered nurses are projected to grow by more than half a million workers.

**Table 3: National Employment for SOC Major Group: Healthcare Practitioners and Technical (HP&T) Occupations**

	<b>Employment</b>	<b>Hourly Wage (Mean)</b>	<b>Annual Wage (Mean)</b>
<b>All HP&amp;T Occupations</b>	7,854,380	\$36.54	\$76,010
<b>HP&amp;T STEM</b>	2,310,820	\$59.62	\$121,881
<b>HP&amp;T Middle-Skill STEM</b>	5,543,540	\$24.08	\$50,093

***Installation, Maintenance, and Repair Occupations (49-0000)***

The installation, maintenance, and repair group includes over 50 different detailed occupations. Workers in the group are found in nearly every industry, from automotive and avionics to medical and information technology services. Nationally, there are more than five million workers employed in this group (see Table 4). Annual wages are slightly above the national average, with workers earning just over \$45,000. Employment across industries in this group is primarily located in automotive, building equipment, and local government. Texas employs the greatest number of workers in this group, representing approximately 42 jobs for every 1,000 jobs in the state.

Middle-skill STEM workers make up about 20 percent of the workforce within the group. Automotive service technicians and mechanics represent the largest portion of middle-skill STEM workers with over 600,000 employed around the nation. Aircraft mechanics and service technicians earn the highest annual average salary (\$58,850), while electronic home entertainment equipment workers earn the least (\$38,140). Although they represent the smallest number of workers (3,710), wind turbine service technicians earn well over the annual national average. Additionally, as demand for wind energy increases, employment is projected to rise much faster than the average for all occupations. Automotive service and medical equipment repairers are also expected to see increased and improved job growth.

**Table 4: National Employment for SOC Major Group: Installation, Maintenance, and Repair (IM&R) Occupations**

	<b>Employment</b>	<b>Hourly Wage (Mean)</b>	<b>Annual Wage (Mean)</b>
<b>All IM&amp;R Occupations</b>	5,244,670	\$21.74	\$45,220
<b>IM&amp;R STEM</b>	1,068,540	\$23.62	\$49,122
<b>IM&amp;R Middle-Skill STEM</b>	1,068,540	\$23.62	\$49,122

While not detailed in this section, three other occupation groups—computer and mathematical, healthcare support, and construction and extraction—are worth mentioning based on their impact on employment. While only 10 detailed occupations are identified as middle-skill STEM, about three million workers are employed in jobs across the three groups. Chief among those jobs are electricians, dental assistants, and medical-related assistants. The next section utilizes the identified list of middle-skill STEM occupations to analyze the Texas workforce system. Several additional jobs are identified and combined with the list of middle-skill STEM occupations. These additional jobs represent other middle-skill STEM occupations important to the Texas economy. Statewide employment and wage information are then matched to each middle-skill STEM occupation for further evaluation.

## Section 4: Middle-Skill STEM Occupations in the Texas Economy

### Identifying Middle-Skill STEM Occupations in Texas

Relative to other states, the economic health of Texas remained strong during and after the Great Recession. In 2011, Texas surpassed its pre-recession employment peak of 10.6 million jobs. Over the next four years the state added an additional 1.2 million jobs.<sup>49</sup> Despite a slight decrease in the demand for middle-skill workers over the last decade, middle-skill jobs still represent the greatest share of statewide employment by skill level. Many major Texas metropolitan areas are also consistently among the top areas in the nation for middle-skill job growth.<sup>50</sup> Moreover, estimates of future job openings in the state indicate that demand for middle-skill jobs will remain strong.<sup>51</sup>

Overall, the demand and opportunity for STEM talent has remained strong in Texas. The economic and workforce environment has fostered significant growth and development in STEM fields. Texas has been recognized as the largest tech-exporting state in the nation. Additionally, the state was ranked in the top 10 for STEM job growth and technology-related entrepreneurship.<sup>52</sup> In terms of employment opportunities, there are roughly 2.5 STEM-related jobs for every unemployed worker, compared to only one non-STEM job for every 3.3 unemployed workers in the state. Employment in STEM jobs will only increase over the next decade—nearly 25 percent—with significant opportunities in computing, engineering, and advanced manufacturing fields. Potential earnings for STEM occupations are also nearly double that of all other jobs in Texas.<sup>53</sup> The demand for STEM education has also seen a meteoric rise in the state. Over the last decade, the number of STEM bachelor's, associate's, and certifications (BACs) awarded in Texas has increased steadily. In 2014, the state awarded over 21,500 STEM BACs—an 80.2 percent increase in awards since 2000.<sup>54</sup>

Not surprisingly, the direction of the Texas economy and workforce has fostered a greater need for middle-skill STEM workers, especially in occupations such as manufacturing, construction, and energy. However, like most states, the challenge for many industries has been finding enough qualified talent to fill available middle-skill STEM positions. The emphasis on traditional four-year degrees usually overshadows the fact that middle-skill jobs, especially those that require STEM training, are capable of providing high wages for workers. In Texas, the average first-year earnings for a worker with a two-year technical degree is roughly \$50,000—over \$10,000 more than the average graduate with a four-year degree.<sup>55</sup>

This final analysis step generates a middle-skill STEM occupation list for Texas. The final list of occupations for Texas combines additional statewide jobs with the 84 identified middle-skill STEM occupations (see Appendix 1, Step 3, for process details). An additional 12 middle-skill STEM occupations were identified based on relevance and importance to the Texas economy.<sup>56</sup> Thus, a total of 96 middle-skill occupations are identified as STEM or STEM-related. Statewide employment information are matched to each occupation to present a broad view of middle-skill STEM jobs in Texas (see Appendix 4, occupations in blue are the additional 12).

This section presents an overview of Texas middle-skill STEM occupations described in the context of four major occupational groups. Next, selected high-growth middle-skill STEM occupations are analyzed in order to highlight employment and wage data and the regions that foster these occupations.

<sup>49</sup> Texas Comptroller (1 July 2015).

<sup>50</sup> Kotkin (24 October 2013); Webster (September 2014).

<sup>51</sup> NSC (August 2011); NSC (2014).

<sup>52</sup> USCCF (June 2014).

<sup>53</sup> Carnevale, et al. (26 June 2013); Change the Equation (2015).

<sup>54</sup> THECB (June 2015).

<sup>55</sup> College Measures (2015).

<sup>56</sup> The 12 additional STEM occupations include healthcare support; construction and extraction; installation, maintenance, and repair; and production occupations.

## Analysis of Texas Middle-Skill STEM Occupations by Major Occupation Groups

Current middle-skill STEM employment in Texas is estimated near 1.2 million workers—about 10.5 percent of total state employment.<sup>57</sup> Based on available employment information, nearly every identified middle-skill STEM occupation will see growth through 2022.<sup>58</sup> Overall, the entire Texas middle-skill STEM workforce is projected to increase by 24 percent to nearly 1.5 million workers. This rise represents a cumulative growth of almost 300,000 middle-skill STEM jobs. The current median annual income for the middle-skill STEM workforce in Texas is about \$46,000. Comparatively, the middle-skill STEM median income estimate is almost twice the amount of the federal poverty threshold for a family of four and just slightly less than the middle-skill STEM national median income.<sup>59</sup>

The following segments provide further detail on four important major occupation groups in Texas based on estimates of employment growth and income potential. These major occupation groups are briefly described in broad terms to include all occupations within the group. The descriptions are then narrowed to illustrate middle-skill STEM occupations within each major group.

### ***Healthcare Practitioners and Technical Occupations (SOC 29-0000)***

As illustrated by the national description of this occupational group, healthcare practitioners and technical occupations offer some of the highest paying jobs among all groups. Representing over 600,000 workers in Texas, this group is projected to increase dramatically over the next decade. Additionally, this group is projected to represent 6.5 percent of Texas' total employment by 2022.

Middle-skill STEM workers in this group are expected to increase by well over 100,000 workers by 2022. The most common jobs in this group are those considered middle-skill STEM, such as, registered nurses (45 percent), licensed practical and vocational nurses (17 percent), and pharmacy technicians (7 percent). Additionally, diagnostic sonographers (57.5 percent), cardiovascular technicians (44.3 percent), and surgical technologists (39.3 percent) are projected to have the largest change in growth for all middle-skill STEM occupations in the group.

### ***Healthcare Support Occupations (SOC 31-0000)***

While healthcare support occupations are related to healthcare practitioners and technical occupations, workers in this group generally assist and are supervised by workers from the latter group. Nevertheless, this group represents approximately 300,000 workers in Texas. This occupational group is about three percent of current total employment in the state.

Depending on the occupation, middle-skill STEM workers in this group can earn annual wages upwards of \$70,000 (occupational therapy assistants). About 25,000 middle-skill STEM workers are expected to be added to the workforce by 2022, with the majority of workers employed as medical and dental assistants. Occupational (44.1 percent) and physical (38 percent) therapy assistants represent the highest changing middle-skill STEM occupations.

### ***Construction and Extraction Occupations (SOC 47-0000)***

Construction and extraction occupations consist of numerous trade, skilled, and manual workers. Workers in this group are primarily found in contracting industries. With more than 600,000 workers, Texas has the highest number of individuals employed in this group in the nation. Construction and extraction occupations make up 5.5 percent of total employment in the state, but 11.7 percent of all construction and extraction jobs in the nation.

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<sup>57</sup> TWC (2015b).

<sup>58</sup> Employment in four middle-skill STEM occupations are projected to decline: farmers, ranchers, and other agricultural managers; animal breeders; fallers; and prepress technicians and workers.

<sup>59</sup> Census (2015b); HHS (3 September 2015).

Overall, Texas workers in this occupation group can earn an average annual salary near \$40,000, and even upwards of \$67,000.

Several occupations in this group are expected to grow significantly over the next decade in Texas, with several middle-skill STEM occupations leading the way. Specifically, electricians (10,700) and operating engineers and construction operators (8,500) are projected to have the largest total increase in employment among middle-skill STEM occupations in the group. By 2022, middle-skill STEM occupations are expected to make up approximately 15 percent of the entire group in the state.

### ***Production Occupations (SOC 51-0000)***

There are over 100 occupations identified within this major group, from assemblers and fabricators to machine and chemical plant operators. Production occupations represent nearly 700,000 workers in Texas, with more than 60 jobs for every 1,000 jobs. The majority of production occupation workers are employed in various manufacturing industries. Employment is estimated to increase by 14 percent in the state by 2022, adding more than 100,000 workers. On average, workers in this group can earn more than \$65,000 per year.

Middle-skill STEM production occupations are expected to increase by nearly 20 percent by 2022. Average annual earnings for middle-skill STEM production workers reach nearly \$46,000. Overall, the middle-skill STEM production occupations are projected to add more than 20,000 workers to the group, totaling almost 130,000 workers by 2022. Chemical equipment and gas plant operators earn well over the state average, reaching nearly \$66,000.

## **Critical Middle-Skill STEM Occupations in Texas**

Utilizing the list of middle-skill STEM occupations, a more detailed regional analysis of Texas can be developed. Workforce information for statewide development boards are matched with specific middle-skill STEM occupations and highlighted below based on projected employment and wage information. Based on occupational growth and wage data, the top middle-skill STEM occupations come from six different major occupation groups.<sup>60</sup> Overall, projections indicate that each occupation will increase in employment across the state, with significant growth concentrated near major metropolitan areas.

### ***Computer User Support Specialists (SOC 15-1151)***

As the state's technology industry continues to grow, computer user support specialists will see increased employment opportunities. Support specialists provide technical assistance to a variety of computer users, from hardware to installation related information. By 2022, almost 60,000 computer user support specialists will be employed across the state. That figure represents a 15 percent increase from 2012. Overall, average annual earnings are around \$45,000, with workers in the Gulf Coast region earning nearly \$60,000. Along with the Gulf Coast region, the Alamo, Capital Area, Greater Dallas, and North Central regions will account for almost 80 percent of total employment growth across the state.

### ***Registered Nurses (SOC 29-1141)***

Of all the identified middle-skill STEM occupations in Texas, registered nurses are projected to increase the greatest number by 2022. Currently, nearly 200,000 workers are employed as registered nurses in Texas, second only to California. However, by 2022, the number of registered nurses in Texas will increase by more than 20 percent, adding more than 50,000 workers. The Alamo, Greater Dallas, and Gulf Coast regions will account for almost half of the total growth in the state. Registered nurses in Texas can earn an average of \$65,000, with

<sup>60</sup> Computer and mathematical occupations (15-0000); healthcare practitioners and technical occupations (29-0000); healthcare support occupations (31-0000); construction and extraction occupations (47-0000); installation, maintenance, and repair occupations (49-0000); and production occupations (51-0000).

workers in the Middle Rio Grande region earning upwards of \$90,000. Registered nurses in the North East Texas region earn an average greater than \$55,000.

***Licensed Practical and Licensed Vocational Nurses (SOC 29-2061)***

Compared to other states, Texas employs the highest number of licensed practical and vocational nurses in the nation. Of the top jobs in the state, this occupation is expected to increase dramatically over the next several years. With nearly 20,000 new workers, representing a 27 percent increase, licensed practical and vocational nurses will reach almost 100,000 total workers by 2022. While statewide annual averages for this occupation are near \$45,000, workers in the Middle Rio Grande (\$35,267) earned the lowest and those in Greater Dallas (\$49,709) earned the highest. The majority of workers in this occupation are employed at nursing care facilities and home healthcare services. Much of the growth in this occupation is concentrated around three major areas of the state. Nearly 6,000 jobs will be added to the North Central Texas, Tarrant County, and Greater Dallas areas, while the Alamo area will increase by 2,000 workers. The most significant increase will be seen in the Gulf Coast region (4,300), an area consisting of Harris and Galveston County.

***Medical Assistants (SOC 31-9092)***

Similar to nursing occupations, medical assistants are heavily involved in the healthcare industry. Generally, medical assistants perform a variety of administrative and clinical duties under the direction of a physician. With the nation's second highest employment total, medical assistants in Texas are expected to grow by more than 30 percent. By 2022, Texas will have nearly 70,000 workers employed as medical assistants. The majority of these workers will be employed at hospitals and physician offices around the state. Generally, medical assistants in Texas can earn an average of \$28,000, with the Lower Rio Grande Valley (\$21,310) and the Greater Dallas (\$31,850) areas earning the lowest and highest, respectively. Not surprisingly, growth in the medical assistance profession follows growth in other major healthcare industries. The North Central Texas, Tarrant County, and Greater Dallas regions will add an additional 5,200 workers, while the Gulf Coast region is projected to increase the most, with over 4,000 new workers.

***Electricians (SOC 47-2111)***

As a vital workforce occupation, demand for electricians will continue to grow in Texas. Texas has the highest number of employed electricians in the nation, with over 50,000 workers. Over the next several years this occupation is projected to increase employment by over 20 percent, adding 11,000 workers to the Texas workforce. Generally, electricians can earn upwards of \$45,000 each year working as building equipment contractors or in other construction services. Electricians in Cameron, the southernmost area of the state, take home an average of \$30,000, while those in Southeast Texas can earn as much as \$52,440 per year. Significant employment growth for electricians will occur in the Gulf Coast (3,660) and Greater Dallas (1,470) regions. Additionally, the Alamo and Capital Area are projecting growth rates of 18.3 and 25.7 percent, respectively. Both of these areas offer an average hourly wage of \$22.

***Automotive Service Technicians and Mechanics (SOC 49-3023)***

As the national population continues to grow, new estimates indicate that drivers can spend an average of 84 hours a year in gridlock. Predictably, the largest metropolitan areas are the most impacted by growth in these occupations.<sup>61</sup> As the number of vehicles increases so does the need for automotive service technicians and mechanics. Currently, Texas has the second highest employment level for this occupation in the nation—about 50,000 workers. In the upcoming years this occupation projects to increase by over 17 percent, adding almost 10,000 workers. The majority of these workers are employed at repair and maintenance stores or automotive dealerships, earning an average annual salary of \$39,000. Workers in the Cameron (\$29,565) and Lower Rio Grande Valley (\$32,087) generally earn less than workers in the Southeast (\$42,713) and North Central (\$43,724)

<sup>61</sup> INRIX (26 August 2015).

Texas regions. Growth in this occupation will primarily be located around the Gulf Coast, Greater Dallas, and North Central Texas areas.

***Welders, Cutters, Solderers, and Brazers (SOC 51-4121)***

Workers in this occupation predominantly work with fabricated metal products in a variety of environments. Nationally, Texas has the most workers employed in this occupation, more than double the number of similar workers in California. With employment growth projected at over 20 percent, this occupation expects to add nearly 10,000 workers by 2022. Workers can earn an average of \$41,000 per year in many manufacturing and construction industries across Texas. Depending on the region, the distribution of wages can be significant, with workers in the Cameron area earning an estimated \$26,000 and those in Greater Dallas earning \$56,000. Moreover, growth in this occupation is expected to occur around major population areas in North (North Central, Tarrant County, Greater Dallas), West (Permian Basin), and Southeast (Gulf Coast) Texas.



## Section 5: Concluding Comments

While traditional STEM workers with four-year degrees are important to the economy, middle-skill STEM occupations represent many of the fastest growing and most needed jobs around the nation. Contrary to many reports, middle-skill workers—individuals with education and training beyond high school but less than a four-year degree—will continue to represent the largest segment of the workforce population for the foreseeable future. At the same time, many jobs once considered non-STEM now need STEM-related knowledge.

However, evaluations of STEM occupations have been hindered by different definitions of STEM. In order to improve economic and workforce assessments, a more accurate list of occupations must be developed. Various sources that define STEM jobs were identified to create a more comprehensive list of middle-skill STEM occupations. These occupations were combined with employment and wage data to understand their impact on the Texas economy. Not only do middle-skill STEM workers earn above average wages, findings suggest that these workers will continue to have significant employment opportunities in the future. Most importantly, they make up a critical segment of the workforce population integral to the development and sustained health of the state.

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## Appendix 1: Process for Developing a Middle-Skill STEM Occupations List

This section describes the process used to develop and classify the list of middle-skill STEM occupations in the report. The process involves three separate steps:

1. Identifying and Comparing STEM Occupation Sources
2. Classifying Middle-Skill STEM Occupations
3. Creating a List of Middle-Skill STEM Occupations Critical to the Texas Economy

Each step in the process is described in further detail below.

### 1. Identifying and Comparing STEM Occupation Sources (See Appendix 2: Analysis of STEM Occupations by Source)

The first step in developing a list of middle-skill STEM occupations is to identify national organizations that classify occupations as STEM. After examining various federal, state, and independent organizations, nine different organizations were identified for analysis. Each organization identifies a different number of occupations as STEM based on varying definitions and classification procedures. Cumulatively, the nine organizations generate 11 different lists of occupations considered STEM. For consistency and coding purposes this report follows SOC detailed occupation code principles. A total of 257 SOC detailed occupations are identified as STEM by at least one of the 11 STEM occupation source lists.

After identifying the occupations classified as STEM from each of the 11 sources, a detailed spreadsheet cataloging each organization was developed. Corresponding SOC detailed occupation codes and titles were then matched to each of the 11 sources. Occupations identified as STEM by each source are indicated by a “✓” mark. The numbers in parentheses indicate total occupations classified as STEM by each source. The U.S. Census Bureau is the only source that distinguishes between STEM and STEM-related occupations. Occupations classified as STEM-related by the U.S. Census Bureau are indicated by an “X” mark. A total of 63 occupations are classified as STEM-related by the U.S. Census Bureau, primarily from the SOC major group of healthcare practitioners and technical occupations (61).

The STEM occupation list was then analyzed to determine classification similarities. Across all organizations, 18 of the 23 major occupation groups are represented. Of the 18 major groups, STEM occupations are concentrated around six SOC major groups. Identified in yellow, only 42 detailed occupations classified as STEM were matched across all sources. These occupations are found within the SOC major groups of computer and mathematical occupations; architecture and engineering occupations; and life, physical, and social science occupations. Most of the 42 detailed occupations matched across all sources require a four-year degree or higher.

### 2. Classifying Middle-Skill STEM Occupations (See Appendix 3: Middle-Skill STEM Occupations List)

After developing the list of STEM occupations, the next step in the process reduced the list down to only those occupations considered middle-skill STEM. The first objective was to determine the most comprehensive number of STEM occupations to be used for analysis. In all, 257 detailed occupations are considered STEM by at least one of the 11 sources.

The complete list of 257 identified STEM occupations are matched with BLS detailed occupation education and training assignments. The BLS education and training assignment identifies typical education levels needed for entry into every SOC occupation. As described in the report, middle-skill occupations are those that require more than a high school diploma but less than a postsecondary four-year degree. Of the original 257 occupations considered STEM by at least one of the 11 sources, 84 are classified as middle-skill. These 84

occupations represent the complete list of middle-skill STEM occupations classified in this report. These middle-skill STEM occupations are found in 14 of the 23 SOC major groups.

Additionally, of the 42 STEM occupations matched across all sources in Step 1, only five are considered middle-skill STEM occupations. These five middle-skill STEM occupations are identified in yellow and found in only two major SOC groups.

3. Creating a List of Middle-Skill STEM Occupations Critical to the Texas Economy  
(See Appendix 4: Texas Middle-Skill STEM Occupations, Wages, and Employment Projections)

The final step in this process builds upon the list of 84 classified middle-skill STEM occupations derived in Step 2. This step analyzes the Texas economy to identify middle-skill STEM jobs important to the state to create the final list of Texas middle-skill STEM occupations.

Using BLS education and training assignments, every middle-skill occupation not included in the 84 middle-skill STEM occupations list was evaluated to locate possible STEM occupations critical to Texas based on job growth and salary data. Upon examination, 12 additional middle-skill classified occupations were identified (highlighted in blue). While the 12 additional middle-skill occupations are not considered STEM by any of the 11 sources, they require significant STEM-related skills and knowledge. Thus, a total of 96 middle-skill STEM occupations are identified for the Texas economy.

Lastly, state wage and employment information is added to the list of Texas middle-skill STEM occupations. This information is obtained from TWC's Labor Market and Career Information portal where users can find various workforce related data. Employment estimates for 2012 to 2022 and average annual wages are included for each identified Texas middle-skill STEM occupation. Moreover, absolute employment change (#Δ) and percentage change (%Δ) are included with employment figures.



## Appendix 2: Analysis of STEM Occupations by Source

Detail SOC Code	SOC Occupation Title	BLS/OES (100)	Census (163)	CEW 2010 (96)	CEW 2011 (85)	Commerce (85)	FL DEO (156)	NSF (116)	O*Net Career Cluster (103)	O*Net STEM Discipline (126)	SOCPC (184)	TWC SWAP (134)
<b>11-0000</b>	<b>Management Occupations</b>											
11-3021	Computer and Information Systems Manager	✓	✓			✓	✓	✓		✓	✓	✓
11-3031	Financial Managers						✓	✓				✓
11-3051	Industrial Production Managers						✓	✓	✓	✓		
11-9013	Farmers, Ranchers, and Other Agricultural Managers						✓			✓		
11-9021	Construction Managers									✓		
11-9041	Architectural and Engineering Managers	✓	✓			✓	✓	✓	✓	✓	✓	✓
11-9111	Medical and Health Services Managers		X					✓			✓	✓
11-9121	Natural Sciences Managers	✓	✓			✓	✓	✓	✓	✓	✓	✓
11-9199	Managers, All Other									✓		

<b>13-0000</b>	<b>Business and Financial Operations Occupations</b>											
13-1041	Compliance Officers									✓		
13-1051	Cost Estimators						✓		✓	✓		
13-1081	Logisticians						✓		✓			
13-1161	Market Research Analysts and Marketing Specialists								✓			
13-1199	Business Operations Specialists, All Other									✓		
13-2011	Accountants and Auditors						✓			✓		✓
13-2021	Appraisers and Assessors of Real Estate						✓					
13-2031	Budget Analysts						✓					✓
13-2051	Financial Analysts						✓					✓
13-2061	Financial Examiners											✓
13-2081	Tax Examiners and Collectors, and Revenue Agents											✓
13-2099	Financial Specialists, All Other									✓		✓

<b>15-0000</b>	<b>Computer and Mathematical Occupations</b>											
15-1111	Computer and Information Research Scientists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15-1121	Computer Systems Analysts	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
15-1122	Information Security Analysts	✓	✓	✓	✓	✓	✓	✓		✓	✓	
15-1131	Computer Programmers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15-1132	Software Developers, Applications	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15-1133	Software Developers, Systems Software	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
15-1134	Web Developers	✓	✓	✓	✓	✓	✓	✓			✓	
15-1141	Database Administrators	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
15-1142	Network and Computer Systems Administrators	✓	✓	✓	✓	✓	✓	✓			✓	✓
15-1143	Computer Network Architects	✓	✓	✓	✓	✓	✓	✓		✓	✓	

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15-1151	Computer User Support Specialists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
15-1152	Computer Network Support Specialists	✓	✓	✓	✓	✓	✓	✓		✓	✓	
15-1199	Computer Occupations, All Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
15-2011	Actuaries	✓	✓	✓	✓		✓	✓		✓	✓	✓
15-2021	Mathematicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15-2031	Operations Research Analysts	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
15-2041	Statisticians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
15-2091	Mathematical Technicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
15-2099	Mathematical Science Occupations, All Other	✓	✓	✓	✓	✓		✓	✓		✓	

17-0000	Architecture and Engineering Occupations											
17-1011	Architects, Except Landscape and Naval	✓	X	✓	✓		✓			✓	✓	✓
17-1012	Landscape Architects	✓	✓	✓	✓						✓	✓
17-1021	Cartographers and Photogrammetrists	✓	✓	✓	✓	✓	✓		✓		✓	✓
17-1022	Surveyors	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓
17-2011	Aerospace Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2021	Agricultural Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2031	Biomedical Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2041	Chemical Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2051	Civil Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2061	Computer Hardware Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2071	Electrical Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2072	Electronics Engineers, Except Computer	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2081	Environmental Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2112	Industrial Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2121	Marine Engineers and Naval Architects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2131	Materials Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2141	Mechanical Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2151	Mining and Geological Engineers, Including Mining Safety Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2161	Nuclear Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2171	Petroleum Engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-2199	Engineers, All Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-3011	Architectural and Civil Drafters	✓	✓		✓	✓	✓		✓	✓	✓	
17-3012	Electrical and Electronics Drafters	✓	✓	✓	✓	✓	✓		✓		✓	
17-3013	Mechanical Drafters	✓	✓	✓	✓	✓	✓				✓	
17-3019	Drafters, All Other	✓	✓	✓	✓	✓			✓		✓	

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17-3021	Aerospace Engineering and Operation Technicians	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
17-3022	Civil Engineering Technicians	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
17-3023	Electrical and Electronics Engineering Technicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-3024	Electro-Mechanical Technicians	✓	✓	✓	✓	✓	✓	✓	✓		✓	
17-3025	Environmental Engineering Technicians	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
17-3026	Industrial Engineering Technicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-3027	Mechanical Engineering Technicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-3029	Engineering Technicians, Except Drafters, All Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17-3031	Surveying and Mapping Technicians	✓	✓	✓	✓	✓	✓	✓	✓		✓	

<b>19-0000</b>	<b>Life, Physical, and Social Science Occupations</b>											
19-1011	Animal Scientists	✓	✓	✓	✓	✓	✓	✓		✓	✓	
19-1012	Food Scientists and Technologists	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
19-1013	Soil and Plant Scientists	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓
19-1021	Biochemists and Biophysicists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-1022	Microbiologists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-1023	Zoologists and Wildlife Biologists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-1029	Biological Scientists, All Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
19-1031	Conservation Scientists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-1032	Foresters	✓	✓	✓	✓	✓		✓		✓	✓	✓
19-1041	Epidemiologists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-1042	Medical Scientists, Except Epidemiologists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-1099	Life Scientists, All Other	✓	✓	✓	✓			✓	✓		✓	
19-2011	Astronomers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
19-2012	Physicists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-2021	Atmospheric and Space Scientists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-2031	Chemists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-2032	Materials Scientists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-2041	Environmental Scientists and Specialists, Including Health	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-2042	Geoscientists, Except Hydrologists and Geographers	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-2043	Hydrologists	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-2099	Physical Scientists, All Other	✓	✓	✓	✓	✓	✓	✓	✓		✓	
19-3011	Economists		✓	✓			✓	✓	✓		✓	✓
19-3022	Survey Researchers		✓	✓			✓	✓	✓		✓	✓
19-3031	Clinical, Counseling, and School Psychologists		✓	✓				✓		✓	✓	✓
19-3032	Industrial-Organizational Psychologists		✓	✓			✓	✓		✓	✓	
19-3039	Psychologists, All Other		✓	✓				✓	✓	✓	✓	
19-3041	Sociologists		✓	✓				✓	✓		✓	

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19-3051	Urban and Regional Planners		✓	✓				✓			✓	
19-3091	Anthropologists and Archeologists		✓	✓				✓	✓		✓	
19-3092	Geographers		✓	✓			✓	✓	✓		✓	
19-3093	Historians		✓	✓				✓	✓			
19-3094	Political Scientists		✓	✓				✓	✓		✓	
19-3099	Social Science and Related Workers, All Other		✓	✓				✓	✓	✓	✓	
19-4011	Agricultural and Food Science Technicians	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
19-4021	Biological Technicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-4031	Chemical Technicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19-4041	Geological and Petroleum Technicians	✓	✓	✓	✓	✓	✓	✓			✓	✓
19-4051	Nuclear Technicians	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
19-4061	Social Science Research Assistants		✓	✓	✓	✓		✓	✓		✓	
19-4091	Environmental Science and Protection Technicians, Including Health	✓	✓	✓	✓	✓		✓		✓	✓	✓
19-4092	Forensic Science Technicians	✓	✓	✓	✓	✓		✓			✓	✓
19-4093	Forest and Conservation Technicians	✓	✓	✓	✓	✓		✓		✓	✓	
19-4099	Life, Physical, and Social Science Technicians, All Other	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓

<b>21-0000</b>	<b>Community and Social Service Occupations</b>											
21-1091	Health Educators											✓
21-1099	Community and Social Service Specialists, All Other								✓			

<b>25-0000</b>	<b>Education, Training, and Library Occupations</b>											
25-1011	Business Teachers, Postsecondary									✓		
25-1021	Computer Science Teachers, Postsecondary	✓					✓	✓		✓	✓	✓
25-1022	Mathematical Science Teachers, Postsecondary	✓					✓	✓	✓	✓	✓	✓
25-1031	Architecture Teachers, Postsecondary	✓					✓	✓	✓	✓	✓	✓
25-1032	Engineering Teachers, Postsecondary	✓					✓	✓	✓	✓	✓	✓
25-1041	Agricultural Sciences Teachers, Postsecondary	✓					✓	✓		✓	✓	✓
25-1042	Biological Science Teachers, Postsecondary	✓					✓	✓	✓	✓	✓	✓
25-1043	Forestry and Conservation Science Teachers, Postsecondary	✓					✓	✓			✓	
25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	✓					✓	✓	✓	✓	✓	✓
25-1052	Chemistry Teachers, Postsecondary	✓					✓	✓	✓	✓	✓	✓
25-1053	Environmental Science Teachers, Postsecondary	✓					✓	✓		✓	✓	
25-1054	Physics Teachers, Postsecondary	✓					✓	✓	✓	✓	✓	✓
25-1061	Anthropology and Archeology Teachers, Postsecondary							✓	✓		✓	

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25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary							✓	✓		✓	
25-1063	Economics Teachers, Postsecondary						✓	✓	✓		✓	✓
25-1064	Geography Teachers, Postsecondary							✓	✓		✓	
25-1065	Political Science Teachers, Postsecondary							✓	✓		✓	
25-1066	Psychology Teachers, Postsecondary							✓		✓	✓	✓
25-1067	Sociology Teachers, Postsecondary							✓			✓	
25-1069	Social Science Teachers, Postsecondary, All Other							✓	✓		✓	
25-1071	Health Specialties Teachers, Postsecondary						✓	✓	✓	✓	✓	✓
25-1072	Nursing Instructors and Teachers, Postsecondary						✓	✓			✓	✓
25-1125	History Teachers, Postsecondary								✓			
25-1126	Philosophy and Religion Teachers, Postsecondary								✓			
25-1192	Home Economics Teachers, Postsecondary									✓		
25-1194	Vocational Education Teachers, Postsecondary								✓			
25-4011	Archivists								✓			
25-4012	Curators								✓			
25-4013	Museum Technicians and Conservators								✓			
25-9021	Farm and Home Management Advisors									✓		
25-9099	Education, Training, and Library Workers, All Other								✓			

<b>27-0000</b>	<b>Art, Design, Entertainment, Sports, and Media Occupations</b>											
27-1014	Multimedia Artists and Animators											✓
27-1021	Commercial and Industrial Designers						✓					
27-1024	Graphic Designers									✓		
27-3042	Technical Writers								✓			
27-4012	Broadcast Technicians						✓					
27-4014	Sound Engineering Technicians						✓					
27-4031	Camera Operators, Television, Video, and Motion Picture						✓					
27-4032	Film and Video Editors						✓					

<b>29-0000</b>	<b>Healthcare Practitioners and Technical Occupations</b>											
29-1011	Chiropractors		X								✓	✓
29-1021	Dentists, General		X				✓				✓	✓
29-1022	Oral and Maxillofacial Surgeons		X				✓				✓	
29-1023	Orthodontists		X				✓				✓	✓
29-1024	Prosthodontists		X				✓				✓	
29-1029	Dentists, All Other Specialists		X								✓	
29-1031	Dietitians and Nutritionists		X				✓		✓	✓	✓	✓

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29-1041	Optometrists		X				✓				✓	✓
29-1051	Pharmacists		X				✓				✓	✓
29-1061	Anesthesiologists		X				✓				✓	✓
29-1062	Family and General Practitioners		X				✓		✓		✓	✓
29-1063	Internists, General		X				✓				✓	✓
29-1064	Obstetricians and Gynecologists		X				✓				✓	✓
29-1065	Pediatricians, General		X				✓				✓	✓
29-1066	Psychiatrists		X				✓				✓	✓
29-1067	Surgeons		X				✓				✓	✓
29-1069	Physicians and Surgeons, All Other		X				✓				✓	✓
29-1071	Physician Assistants		X				✓				✓	✓
29-1081	Podiatrists		X				✓				✓	✓
29-1122	Occupational Therapists		X								✓	✓
29-1123	Physical Therapists		X								✓	✓
29-1124	Radiation Therapists		X								✓	✓
29-1125	Recreational Therapists		X								✓	✓
29-1126	Respiratory Therapists		X				✓				✓	✓
29-1127	Speech-Language Pathologists		X								✓	✓
29-1128	Exercise Physiologists		X				✓				✓	✓
29-1129	Therapists, All Other		X								✓	
29-1131	Veterinarians		X				✓				✓	✓
29-1141	Registered Nurses		X				✓				✓	
29-1151	Nurse Anesthetists		X				✓				✓	
29-1161	Nurse Midwives		X				✓				✓	
29-1171	Nurse Practitioners		X				✓				✓	
29-1181	Audiologists		X								✓	✓
29-1199	Health Diagnosing and Treating Practitioners, All Other		X				✓				✓	✓
29-2011	Medical and Clinical Laboratory Technologists		X				✓				✓	✓
29-2012	Medical and Clinical Laboratory Technicians		X				✓				✓	✓
29-2021	Dental Hygienists		X				✓				✓	✓
29-2031	Cardiovascular Technologists and Technicians		X				✓				✓	✓
29-2032	Diagnostic Medical Sonographers		X								✓	✓
29-2033	Nuclear Medicine Technologists		X							✓	✓	✓
29-2034	Radiologic Technologists		X								✓	
29-2035	Magnetic Resonance Imaging Technologists		X								✓	
29-2041	Emergency Medical Technicians and Paramedics		X				✓				✓	
29-2051	Dietetic Technicians		X						✓	✓	✓	
29-2052	Pharmacy Technicians		X								✓	

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29-2053	Psychiatric Technicians		X								✓	
29-2054	Respiratory Therapy Technicians		X				✓				✓	✓
29-2055	Surgical Technologists		X								✓	
29-2056	Veterinary Technologists and Technicians		X								✓	✓
29-2057	Ophthalmic Medical Technicians		X								✓	
29-2061	Licensed Practical and Licensed Vocational Nurses		X								✓	
29-2071	Medical Records and Health Information Technicians		X								✓	✓
29-2081	Opticians, Dispensing		X								✓	
29-2091	Orthotists and Prosthetists		X								✓	✓
29-2092	Hearing Aid Specialists		X				✓				✓	
29-2099	Health Technologists and Technicians, All Other		X								✓	
29-9011	Occupational Health and Safety Specialists		X								✓	
29-9012	Occupational Health and Safety Technicians		X								✓	
29-9091	Athletic Trainers		X								✓	
29-9092	Genetic Counselors		X				✓				✓	
29-9099	Healthcare Practitioners and Technical Workers, All Other		X				✓				✓	

<b>31-0000</b>	<b>Healthcare Support Occupations</b>											
31-2011	Occupational Therapy Assistants											✓
31-2021	Physical Therapist Assistants											✓

<b>33-0000</b>	<b>Protective Service Occupations</b>											
33-3031	Fish and Game Wardens									✓		

<b>35-0000</b>	<b>Food Preparation and Serving Related Occupations</b>											
35-1012	First-Line Supervisors of Food Preparation and Serving Workers									✓		
35-2012	Cooks, Institution and Cafeteria									✓		

<b>41-0000</b>	<b>Sales and Related Occupations</b>											
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	✓									✓	
41-9031	Sales Engineers	✓	✓				✓	✓			✓	

<b>43-0000</b>	<b>Office and Administrative Support Occupations</b>											
43-9111	Statistical Assistants						✓		✓	✓		✓

<b>45-0000</b>	<b>Farming, Fishing, and Forestry Occupations</b>											
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers									✓		

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45-2021	Animal Breeders									✓		
45-3011	Fishers and Related Fishing Workers									✓		
45-4011	Forest and Conservation Workers									✓		
45-4021	Fallers									✓		
45-4022	Logging Equipment Operators									✓		
45-4023	Log Graders and Scalers									✓		

<b>49-0000 Installation, Maintenance, and Repair Occupations</b>												
49-2011	Computer, Automated Teller, and Office Machine Repairers						✓					
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairs						✓					
49-2091	Avionics Technicians									✓		
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment						✓					
49-2097	Electronic Home Entertainment Equipment Installers and Repairers						✓					
49-3011	Aircraft Mechanics and Service Technicians									✓		
49-3023	Automotive Service Technicians and Mechanics									✓		
49-9044	Millwrights						✓					
49-9062	Medical Equipment Repairers						✓					
49-9081	Wind Turbine Service Technicians									✓		

<b>51-0000 Production Occupations</b>												
51-2023	Electromechanical Equipment Assemblers									✓		
51-3092	Food Batchmakers									✓		
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic											✓
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic						✓			✓		✓
51-4111	Tool and Die Makers						✓					
51-5111	Prepress Technicians and Workers						✓					
51-8011	Nuclear Power Reactor Operators						✓					
51-8091	Chemical Plant and System Operators									✓		
51-9011	Chemical Equipment Operators and Tenders									✓		

<b>53-0000 Transportation and Material Moving Occupations</b>												
53-2011	Airline Pilots, Copilots, and Flight Engineers											✓
53-6041	Traffic Technicians						✓					
53-6051	Transportation Inspectors									✓		



### Appendix 3: Middle-Skill STEM Occupations List

Detailed SOC Code	SOC Occupation Title
<b>11-0000</b>	<b>Management Occupations</b>
11-9013	Farmers, Ranchers, and Other Agricultural Managers
11-9199	Managers, All Other
<b>13-0000</b>	<b>Business and Financial Operations Occupations</b>
13-1199	Business Operations Specialists, All Other
<b>15-0000</b>	<b>Computer and Mathematical Occupations</b>
15-1134	Web Developers
15-1151	Computer User Support Specialists
15-1152	Computer Network Support Specialists
<b>17-0000</b>	<b>Architecture and Engineering Occupations</b>
17-3011	Architectural and Civil Drafters
17-3012	Electrical and Electronics Drafters
17-3013	Mechanical Drafters
17-3019	Drafters, All Other
17-3021	Aerospace Engineering and Operations Technicians
17-3022	Civil Engineering Technicians
17-3023	Electrical and Electronics Engineering Technicians
17-3024	Electro-Mechanical Technicians
17-3025	Environmental Engineering Technicians
17-3026	Industrial Engineering Technicians
17-3027	Mechanical Engineering Technicians
17-3029	Engineering Technicians, Except Drafters, All Other
17-3031	Surveying and Mapping Technicians
<b>19-0000</b>	<b>Life, Physical, and Social Science Occupations</b>
19-4011	Agricultural and Food Science Technicians
19-4031	Chemical Technicians
19-4041	Geological and Petroleum Technicians
19-4051	Nuclear Technicians
19-4061	Social Science Research Assistants
19-4091	Environmental Science and Protection Technicians, Including Health
19-4093	Forest and Conservation Technicians
19-4099	Life, Physical, and Social Science Technicians, All Other

Detailed SOC Code	SOC Occupation Title
<b>27-0000</b>	<b>Arts, Design, Entertainment, Sports, and Media Occupations</b>
27-4012	Broadcast Technicians
27-4014	Sound Engineering Technicians

<b>29-0000</b>	<b>Healthcare Practitioners and Technical Occupations</b>
29-1124	Radiation Therapists
29-1126	Respiratory Therapists
29-1141	Registered Nurses
29-2012	Medical and Clinical Laboratory Technicians
29-2021	Dental Hygienists
29-2031	Cardiovascular Technologists and Technicians
29-2032	Diagnostic Medical Sonographers
29-2033	Nuclear Medicine Technologists
29-2034	Radiologic Technologists
29-2035	Magnetic Resonance Imaging Technologists
29-2041	Emergency Medical Technicians and Paramedics
29-2051	Dietetic Technicians
29-2052	Pharmacy Technicians
29-2053	Psychiatric Technicians
29-2054	Respiratory Therapy Technicians
29-2055	Surgical Technologists
29-2056	Veterinary Technologists and Technicians
29-2057	Ophthalmic Medical Technicians
29-2061	Licensed Practical and Licensed Vocational Nurses
29-2071	Medical Records and Health Information Technicians
29-2081	Opticians, Dispensing
29-2092	Hearing Aid Specialists
29-2099	Health Technologists and Technicians, All Other
29-9012	Occupational Health and Safety Technicians

<b>31-0000</b>	<b>Healthcare Support Occupations</b>
31-2011	Occupational Therapy Assistants
31-2021	Physical Therapist Assistants

<b>33-0000</b>	<b>Protective Service Occupations</b>
33-3031	Fish and Game Wardens

<b>35-0000</b>	<b>Food Preparation and Serving Related Occupations</b>
35-1012	First-Line Supervisors of Food Preparation and Serving Workers

Detailed SOC Code	SOC Occupation Title
<b>45-0000</b>	<b>Farming, Fishing, and Forestry Occupations</b>
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers
45-2021	Animal Breeders
45-4011	Forest and Conservation Workers
45-4021	Fallers
45-4022	Logging Equipment Operators
45-4023	Log Graders and Scalers
<b>49-0000</b>	<b>Installation, Maintenance, and Repair Occupations</b>
49-2011	Computer, Automated Teller, and Office Machine Repairers
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairs
49-2091	Avionics Technicians
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment
49-2097	Electronic Home Entertainment Equipment Installers and Repairers
49-3011	Aircraft Mechanics and Service Technicians
49-3023	Automotive Service Technicians and Mechanics
49-9044	Millwrights
49-9062	Medical Equipment Repairers
49-9081	Wind Turbine Service Technicians
<b>51-0000</b>	<b>Production Occupations</b>
51-2023	Electromechanical Equipment Assemblers
51-3092	Food Batchmakers
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic
51-4111	Tool and Die Makers
51-5111	Prepress Technicians and Workers
51-8011	Nuclear Power Reactor Operators
51-8091	Chemical Plant and System Operators
51-9011	Chemical Equipment Operators and Tenders
<b>53-0000</b>	<b>Transportation and Material Moving Occupations</b>
53-6041	Traffic Technicians
53-6051	Transportation Inspectors

## Appendix 4: Texas Middle-Skill STEM Occupations, Wages, and Employment Projections

Detailed SOC Code	SOC Occupation Title	Total Employ (2012)	Total Employ (2022)	#Δ	%Δ	\$ Mean (2014)
<b>11-0000</b>	<b>Management Occupations</b>					
11-9013	Farmers, Ranchers, and Other Agricultural Managers	20,390	18,040	-2,350	-11.50%	67,170
11-9199	Managers, All Other	39,460	46,540	7,080	17.90%	122,010
<b>13-0000</b>	<b>Business and Financial Operations Occupations</b>					
13-1199	Business Operations Specialists, All Other	65,010	77,950	12,940	19.90%	80,830
<b>15-0000</b>	<b>Computer and Mathematical Occupations</b>					
15-1134	Web Developers	10,420	13,080	2,660	25.50%	66,997
15-1151	Computer User Support Specialists	47,460	60,550	13,090	22.79%	50,168
15-1152	Computer Network Support Specialists	17,760	20,180	2,420	13.60%	68,068
<b>17-0000</b>	<b>Architecture and Engineering Occupations</b>					
17-3011	Architectural and Civil Drafters	10,680	11,320	640	6.00%	54,601
17-3012	Electrical and Electronics Drafters	4,020	4,890	870	21.60%	73,035
17-3013	Mechanical Drafters	4,670	5,100	430	9.20%	63,508
17-3019	Drafters, All Other	1,510	1,860	350	23.20%	64,241
17-3021	Aerospace Engineering and Operations Technicians	760	830	70	9.20%	61,250
17-3022	Civil Engineering Technicians	11,030	11,530	500	4.50%	45,084
17-3023	Electrical and Electronics Engineering Technicians	14,570	17,130	2,560	17.60%	62,550
17-3024	Electro-Mechanical Technicians	1,550	1,940	390	25.20%	58,887
17-3025	Environmental Engineering Technicians	1,070	1,360	290	27.10%	57,878
17-3026	Industrial Engineering Technicians	4,450	5,060	610	13.70%	65,430
17-3027	Mechanical Engineering Technicians	4,410	5,350	940	21.30%	57,671
17-3029	Engineering Technicians, Except Drafters, All Other	9,100	10,920	1,820	20.00%	64,705
17-3031	Surveying and Mapping Technicians	8,020	9,940	1,920	23.90%	40,729
<b>19-0000</b>	<b>Life, Physical, and Social Science Occupations</b>					
19-4011	Agricultural and Food Science Technicians	1,600	1,780	180	11.30%	32,554
19-4031	Chemical Technicians	5,700	6,960	1,260	22.10%	51,556
19-4041	Geological and Petroleum Technicians	6,490	8,380	1,890	29.10%	60,673
19-4051	Nuclear Technicians	20	30	10	50.00%	76,740
19-4061	Social Science Research Assistants	890	1,050	160	18.00%	38,344
19-4091	Enviro. Science & Protection Techs, Including Health	2,940	3,630	690	23.50%	45,676
19-4093	Forest and Conservation Technicians	380	430	50	9.50%	39,920
19-4099	Life, Physical, and Social Science Technicians, All Other	5,780	6,960	1,180	20.40%	49,071

Detailed SOC Code	SOC Occupation Title	Total Employ (2012)	Total Employ (2022)	#Δ	%Δ	\$ Mean (2014)
<b>27-0000</b>	<b>Art, Design, Entertainment, Sports, and Media Occupations</b>					
27-4012	Broadcast Technicians	2,250	2,440	190	8.40%	34,050
27-4014	Sound Engineering Technicians	490	560	70	14.30%	51,140

<b>29-0000</b>	<b>Healthcare Practitioners and Technical Occupations</b>					
29-1124	Radiation Therapists	810	1,050	240	29.60%	79,800
29-1126	Respiratory Therapists	10,010	12,940	2,930	29.30%	55,213
29-1141	Registered Nurses	186,390	239,590	53,200	27.45%	68,584
29-2012	Medical and Clinical Laboratory Technicians	11,300	15,530	4,230	37.40%	37,975
29-2021	Dental Hygienists	12,390	16,030	3,640	29.40%	71,977
29-2031	Cardiovascular Technologists and Technicians	3,950	5,700	1,750	44.30%	54,583
29-2032	Diagnostic Medical Sonographers	4,380	6,900	2,520	57.50%	65,720
29-2033	Nuclear Medicine Technologists	1,230	1,610	380	30.90%	71,039
29-2034	Radiologic Technologists	13,350	17,410	4,060	30.40%	54,245
29-2035	Magnetic Resonance Imaging Technologists	2,530	3,320	790	31.20%	66,578
29-2041	Emergency Medical Technicians and Paramedics	14,820	19,080	4,260	28.70%	35,015
29-2051	Dietetic Technicians	1,060	1,340	280	26.40%	28,249
29-2052	Pharmacy Technicians	27,630	35,290	7,660	27.70%	31,830
29-2053	Psychiatric Technicians	3,090	3,770	680	22.00%	28,256
29-2054	Respiratory Therapy Technicians	1,350	1,740	390	28.90%	50,711
29-2055	Surgical Technologists	9,090	12,660	3,570	39.30%	44,050
29-2056	Veterinary Technologists and Technicians	9,020	11,510	2,490	27.60%	28,528
29-2057	Ophthalmic Medical Technicians	3,410	4,540	1,130	33.10%	34,306
29-2061	Licensed Practical and Licensed Vocational Nurses	71,890	91,740	19,850	27.60%	44,882
29-2071	Medical Records and Health Information Technicians	16,460	21,330	4,870	29.60%	37,562
29-2081	Opticians, Dispensing	5,620	6,760	1,140	20.30%	30,812
29-2092	Hearing Aid Specialists	720	950	230	31.90%	41,732
29-2099	Health Technologists and Technicians, All Other	3,160	4,110	950	30.10%	42,921
29-9012	Occupational Health and Safety Technicians	2,900	3,570	670	23.10%	50,113

<b>31-0000</b>	<b>Healthcare Support Occupations</b>					
31-2011	Occupational Therapy Assistants	2,700	3,890	1,190	44.10%	70,606
31-2021	Physical Therapist Assistants	5,180	7,150	1,970	38.00%	69,368
31-9091	Dental Assistants	23,130	28,090	4,960	21.40%	34,192
31-9092	Medical Assistants	51,560	67,960	16,400	31.80%	28,550

<b>33-0000</b>	<b>Protective Service Occupations</b>					
33-3031	Fish and Game Wardens	450	500	50	11.10%	58,590

Detailed SOC Code	SOC Occupation Title	Total Employ (2012)	Total Employ (2022)	#Δ	%Δ	\$ Mean (2014)
<b>35-0000</b>	<b>Food Preparation and Serving Related Occupations</b>					
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	76,260	99,620	23,360	30.60%	33,560

<b>45-0000</b>	<b>Farming, Fishing, and Forestry Occupations</b>					
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	4,120	4,400	280	6.80%	44,340
45-2021	Animal Breeders	250	200	-50	-20.00%	32,410
45-4011	Forest and Conservation Workers	200	220	20	10.00%	34,460
45-4021	Fallers	440	280	-160	-36.40%	38,360
45-4022	Logging Equipment Operators	750	840	90	12.00%	38,260
45-4023	Log Graders and Scalers	N/A	N/A	N/A	N/A	29,270

<b>47-0000</b>	<b>Construction and Extraction Occupations</b>					
47-2073	Operating Engineers and Other Construction Equipment Operators	36,250	44,750	8,500	23.40%	38,730
47-2111	Electricians	50,220	60,920	10,700	21.30%	45,130
47-4041	Hazardous Materials Removal Workers	3,470	4,100	630	18.20%	34,820

<b>49-0000</b>	<b>Installation, Maintenance, and Repair Occupations</b>					
49-2011	Computer, Automated Teller, and Office Machine Repairers	13,890	15,470	1,580	11.40%	34,120
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairers	1,830	2,190	360	19.70%	42,950
49-2091	Avionics Technicians	1,490	1,720	230	15.40%	51,048
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	7,390	9,120	1,730	23.40%	57,380
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	2,290	2,300	10	0.40%	33,530
49-3011	Aircraft Mechanics and Service Technicians	13,020	15,190	2,170	16.70%	56,383
49-3023	Automotive Service Technicians and Mechanics	51,540	60,680	9,140	17.70%	39,217
49-9044	Millwrights	3,470	4,390	920	26.50%	45,410
49-9062	Medical Equipment Repairers	2,980	4,160	1,180	39.60%	44,746
49-9081	Wind Turbine Service Technicians	1,250	1,790	540	43.20%	51,728

<b>51-0000</b>	<b>Production Occupations</b>					
51-2023	Electromechanical Equipment Assemblers	4,350	5,020	670	15.40%	33,330
51-3092	Food Batchmakers	7,860	8,900	1,040	13.20%	23,750
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	9,930	13,710	3,780	38.10%	38,293
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	1,740	2,700	960	55.20%	54,608
51-4111	Tool and Die Makers	1,990	2,390	400	20.10%	44,920
51-4121	Welders, Cutters, Solderers, and Brazers	47,830	57,610	9,780	20.40%	40,895
51-4122	Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	3,810	5,460	1,650	43.30%	36,801
51-5111	Prepress Technicians and Workers	2,180	2,010	-170	-7.80%	39,690
51-8011	Nuclear Power Reactor Operators	N/A	N/A	N/A	N/A	N/A
51-8013	Power Plant Operators	3,370	3,630	260	7.70%	66,125

Detailed SOC Code	SOC Occupation Title	Total Employ (2012)	Total Employ (2022)	#Δ	%Δ	\$ Mean (2014)
51-8091	Chemical Plant and System Operators	6,130	6,950	820	13.40%	65,433
51-8092	Gas Plant Operators	1,820	2,110	290	15.90%	62,320
51-9011	Chemical Equipment Operators and Tenders	9,520	10,770	1,250	13.10%	54,840
51-9081	Dental Laboratory Technicians	2,300	2,640	340	14.80%	38,552
51-9082	Medical Appliance Technicians	1,130	1,360	230	20.40%	46,430
51-9083	Ophthalmic Laboratory Technicians	2,670	3,120	450	16.90%	26,903

<b>53-0000</b>	<b>Transportation and Material Moving Occupations</b>					
53-6041	Traffic Technicians	680	790	110	16.20%	39,840
53-6051	Transportation Inspectors	2,690	3,460	770	28.60%	71,170

**TWIC BRIEFING ITEM  
MEMORANDUM**

REF: KM.twic.II7.120415

**TO** Council Members**SUBJECT** Briefing on the Texas Combined State Plan under the Workforce Innovation and Opportunity Act

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**Introduction**

The Texas Workforce Investment Council (Council) will consider endorsement of the Texas Combined State Plan under the Workforce Innovation and Opportunity Act (WIOA) at its February 2016 quarterly meeting. Upon endorsement, the Council will recommend final approval by the Governor and transmittal to the U.S. Secretary of Labor. This item will brief members in advance of consideration of action in September.

**Background**

The Workforce Innovation and Opportunity Act of 2014 (WIOA, Public Law 113-128) was enacted on July 22, 2014. This legislation passed Congress with a bipartisan majority and is designed to help job seekers access employment, education and training in order to achieve success in the workforce.

As the State Workforce Investment Board, the Council is charged with approval of the state plan required under the WIOA. The WIOA requires that states must have an approved state plan in place in order to receive WIOA formula funding.

**Discussion**The Planning Process & Requirements

The WIOA requires the Governor to submit a state plan to the U.S. Department of Labor that will outline a four-year plan for the workforce investment system. The due date for the plan submission is March 3, 2016.

The WIOA instructs the state workforce board to assist the Governor in developing the WIOA State Plan to ensure the planning process is completed in a transparent manner, and in consultation with a variety of workforce partners that include local workforce boards, business representatives, adult education providers, and postsecondary institutions.

DOL has specified that states have the option of submitting a unified plan or a combined state plan for WIOA. Texas will submit a combined state plan and the Texas Workforce Commission will be the lead agency in developing the plan.

The WIOA statute identifies the structure required for the state plan. The plan must be comprised of strategic and operational planning elements. The strategic plan should describe the state's vision, goals, and strategies for preparing an educated and skilled workforce to close the skills gap, and meet employer needs. The operational planning elements in the state plan must describe each program and the operating systems and policies that support to implement the strategies.



### Overview of State Plan

The state plan will be comprised of three sections.

Section I is the strategic portion that contains the Governor's vision and stated goals for Texas' workforce system. It will include: a description of the major strategies and goals of the plan; updated economic and demographic information for Texas, including projections for the future and information about target populations; a discussion of how the state will align policy, operations, and administrative system; and, outcomes and quantitative targets.

Section II is the operational part of the plan and will include a description of programs, participant groups, and the delivery of services. It will include: a description of how service delivery will achieve outcomes; services for employers; an overview of the workforce system; organization at the state and local levels; and descriptions of workforce programs and required policies.

Section III contains assurances that states must affirm have been met. These key obligations form the basis of the commitment by TWC to uphold the requirements in the law and regulation. Included in the assurances are the requirements for stakeholder consultation and public comment during development of the plan.

The state plan is subject to the approval of both the secretary of labor and the secretary of education, after approval of the commissioner of the Rehabilitation Services Administration. The plan is considered to be approved at the end of the 90-day period beginning on the day the plan is submitted, unless the secretary of labor or the secretary of education makes a written determination that the plan is inconsistent with the statute provisions during the 90-day period.

### **Recommendation**

It is recommended that the Council note the information contained in this memorandum in anticipation of action in February 2016.

**TWIC BRIEFING ITEM  
MEMORANDUM**

REF: KM.twic.II8.120415

**TO** Council Members

**SUBJECT** Fiscal Year 2017 Apprenticeship Funding Formula Recommendations

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**Introduction**

At its February 2016 meeting, the Texas Workforce Investment Council (Council) will consider endorsement of the recommendations of the Apprenticeship and Training Advisory Committee (ATAC) regarding fiscal year 2017 funding formulas for apprenticeship training programs funded under Chapter 133 of the Texas Education Code.

**Background**

Texas Government Code charges the Council with the responsibility of carrying out the federal and state responsibilities of advisory council under applicable federal and state workforce development statutes. In so doing, the Council is charged with recommending formulas and administrative procedures for requesting appropriations of state funds for the apprenticeship programs funded under Chapter 133. In order to fulfill this statutory function, the Council Chair has appointed ATAC as a technical advisory committee to advise the Council on apprenticeship matters.

Each year, following approval by ATAC, the Council considers and approves recommendations for funding in the next fiscal year. Council recommendations are then forwarded to the Texas Workforce Commission (TWC) for action. The TWC is statutorily required under Texas Education Code, Section 133.006, to adopt formulas for the distribution of available funds to apprenticeship training programs based on the annual recommendations of the Council.

**Discussion**

ATAC will submit recommendations to the Council at its February 2016 meeting regarding the:

- contact-hour rate (the method for distribution) for apprenticeship training programs funded under Chapter 133 of the code;
- percent of available funds for apprenticeship programs; and
- amount of funding for apprenticeship instruction training.

The Council will consider the recommendations of ATAC and then make recommendations to the TWC regarding the formulas for the distribution of available funds to apprenticeship training programs funded under Chapter 133.

**Recommendations**

It is recommended that the Council note the information contained in this memorandum.

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**TWIC BRIEFING ITEM  
MEMORANDUM**

REF: KL.twic.II9.120415

**TO** Council Members

**SUBJECT** 2015 Survey of Texas Employers—Report Findings

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**Introduction**

In its listening session at the December 2013 Council meeting, the U.S. Chamber of Commerce offered a presentation about employer needs regarding a skilled workforce. A key theme of the presentation was that employers are having a difficult time finding certain types of employees and that, as a result, sometimes job listings can go unfilled for long periods of time. This message was echoed by a majority of the employers presenting on a Texas employers panel during a listening session at the June 2014 Council meeting that was focused on economic development.

Studies on the topic of workforce skills shortages use various sources of data and methodologies that draw different conclusions about this perceived issue. The Council has consistently heard from its constituent employers about concerns regarding skills and qualifications missing in the Texas labor market. To address those concerns and identify key areas where Texas may be facing critical skills shortages, the Council reached out directly to Texas employers through an online survey to attempt to quantify hiring difficulty at the regional level, to determine if and where they exist, and what consequences these issues may have for employers.

**Background**

The Council previously conducted employer surveys far more frequently. Surveys were undertaken in 2001, 2002, 2004, 2006, and 2008. Previous survey projects focused primarily on gauging employer interactions with specific programs within the Texas workforce system, a need addressed by previous strategic plans. However, as partner agencies became much more effective at conducting that type of analysis, the Council decided to align its next survey project with the next system strategic plan in order to support implementation of the plan.

The 2015 survey was timed to coincide with the Council's implementation of the new system strategic plan. The Council also directed that this survey was to be more strategic in nature—moving from employer interactions with specific programs and to considering issues from a workforce system level.

**Discussion**

Texas Government Code (TGC) 2308.101(a)(6) directs the Council to evaluate the effectiveness of the workforce development system. In TGC 2308.101(a)(7), the Council is authorized to use administrative records of the state's unemployment compensation program and other sources as appropriate in evaluating the workforce development system. In TGC 2308.101(a)(9) the Council is tasked with recommending measures to ensure that occupational skills training is directed toward both locally in-demand, and high-skill, high-wage jobs. In TGC 2308.1015(a)(1) the Council is charged with evaluating programs administered by agencies represented on the Council. Specifically, the Council must identify any duplication of or gaps in the service provided by those programs and any other problems that adversely affect the seamless delivery of those services. Finally, in TGC 2309.1015(a)(2), the Council is

directed to develop and implement immediate and long-range strategies to address the problems identified by the Council under subdivision (1).

To meet these mandates, the Council developed a survey instrument to be sent via email to Texas employers based on a sample of employers drawn from the unemployment insurance (UI) database. The Public Policy Research Institute at Texas A&M University (PPRI) administered the survey and drew a randomized, representative sample from the population of employers in the UI database. Response to the survey surpassed the goal to receive 2,500 completed survey responses from Texas employers. The 2,738 responses from Texas employers ensures that the survey results can be generalized for businesses that have sought to hire new workers in the last twelve months. The number of responses also ensures that there is sufficient variation across employer size, industry, and location to gain an accurate understanding of the opinions of Texas employers.

The plan for this survey was inspired by two existing surveys. The first was a survey on skilled worker shortages in U.S. manufacturing conducted by Deloitte and The Manufacturing Institute of the National Association of Manufacturers. The second was a 2014 survey on employer needs conducted by the North Carolina Association of Workforce Development Boards. The purpose of these surveys was to hone in on difficulties finding workers with critical skills, as perceived by employers. Both surveys, in essence, identified supply/demand discrepancies in the labor market. The survey results included the location (city, county, state, etc.), types of skills that were missing, and the extent to which the existence of such discrepancies had a negative effect on the employers specifically, as well as on the economy more broadly.

The Council's survey design had only 26 questions, including demographic information for each employer. The questions focused on the employers' perceptions of shortages in the labor market. The objective was to analyze what types of workers are needed, what qualifications and skills are required, and what types of job openings are difficult to fill. These issues were determined by examining how the employers perceive the availability of a variety of worker characteristics against the requirements of existing openings, including:

- Technical skills
- Soft skills
- Credentials, qualifications, or certifications

An introductory email from the Council Chair introduced survey recipients to the work of the Council and to the importance of employer insight in developing a competitive workforce system. PPRI distributed the survey during the third week of August. Local workforce development boards were notified and asked to support the survey by encouraging participation of regional employers. The survey was closed at the end of September. The results were analyzed by employer size and industry sector at relevant geographic levels to provide useful information for community and technical colleges. Local workforce development boards also may find the results useful.

### **Recommendation**

It is recommended that members note the information contained in this memorandum.



**TWIC INFORMATION ITEM  
MEMORANDUM**

REF: KM.twic.III.120415

**TO** Council Members**SUBJECT** Workforce Innovation and Opportunity Act: A Compendium

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**Introduction**

The Texas Workforce Investment Council (Council) is the state workforce investment board under federal workforce law. As the state board, the Council operated under the Workforce Investment Act (WIA) of 1998 since Texas was an early implementation state in 1999. At its last four meetings, the Council was provided information on the new Workforce Innovation and Opportunity Act and specific requirements of that act related to planning and cost allocation. This memorandum provides members with a brief synopsis of those requirements. Previous information provided to members has been combined into a compendium for reference.

**Background**

The Workforce Innovation and Opportunity Act of 2014 (WIOA, Public Law 113-128) was enacted on July 22, 2014. This legislation passed Congress with a bipartisan majority and is designed to help job seekers access employment, education, and training in order to achieve success in the workforce.

**Attachment**

1. Workforce Innovation and Opportunity Act: A Compendium

**Discussion**Program Overview

Despite many attempts to reauthorize the WIA in the past several years, no introduced legislation was able to garner support in both chambers of Congress. In the summer of 2014, Republican and Democratic leaders in the House and Senate negotiated a compromise between the House-passed SKILLS Act and the Senate HELP Committee's legislation. While some portions of the new Workforce Innovation and Opportunity Act were to be immediately implemented, the majority of the law became effective July 1, 2015.

The WIOA's legislative provisions are designed to help job seekers access employment, education, and support services. Enhancements include program coordination, streamlined service delivery, and alignment of programs across common goals with increased accountability and transparency.

While emphasizing integrated services and seamless pathways for job seekers, the new law is also designed to improve services to employers by emphasizing the use of career pathways and promoting work-based training and employment focused on in-demand occupations. This emphasis helps to strengthen connections with employers, identify the skills employers need most, assist workers in acquiring those skills, and match employers with the skilled workers.

The key highlights of the WIOA include the following:

- requires states to strategically align workforce development programs
- promotes accountability and transparency
- fosters regional collaboration
- improves the American job center system
- improves services to employers and promotes work-based training
- provides access to high quality training
- enhances workforce services for the unemployed and other job seekers
- improves services to individuals with disabilities
- makes key investments in serving disconnected youth and other at-risk populations
- enhances connections with the Registered Apprenticeship program
- streamlines and strengthens the strategic roles of workforce development boards

Texas is fortunate to have a mature workforce system already in place. In 1995, Texas House Bill 1863 consolidated Texas' workforce programs into a single, integrated delivery system: a workforce system developed in Texas that is employer-driven, locally controlled, and offers integrated services to employers, job seekers, and communities throughout the state.

#### Requirement for a State Combined Plan

The WIOA requires the Governor to submit a state plan to the U.S. Department of Labor that will outline a four-year plan for the workforce investment system. It is anticipated that Texas will submit a combined plan and that the Texas Workforce Commission will be the lead agency in developing that plan. Attachment 1 contains a summary of the requirements for a combined plan.

The WIOA statute identifies the structure required for the combined state plan. The plan must be comprised of strategic and operational planning elements. The strategic plan should describe the state's vision, goals, and strategies for preparing an educated and skilled workforce to close the skills gap and meet employer needs. The operational planning elements in the combined state plan must describe each program and the operating systems and policies that support implementation of the strategies.

One of the first actions required under the WIOA is to engage in a state planning process. In order to make the plan and state vision actionable, the combined state plan should articulate how different programs, agencies, and stakeholders will work together. As the work on the state plan begins, a comprehensive planning process should be used to create a state plan structured around a vision of a workforce system that will help a wide range of job seekers and employers prosper.

#### Requirement for Regional Planning

The new legislation charges the workforce development boards and chief elected officials to design the system regionally, aligning workforce policies and services with regional economies that support the service delivery strategies and needs. States are required to establish regions to ensure the training and employment services support the economic growth and the employment opportunities are meeting the skill competency requirements of the regions.

The coordination required for regional planning allows for the workforce development areas to identify areas of efficiency, coordinate effective practices, and streamline service delivery. Although regional planning is a new requirement in the federal workforce act, Texas workforce areas have engaged in regional planning since their inception. Workforce development areas in Texas have a demonstrated history of promoting, collaborating, leveraging, and ensuring that services are delivered efficiently and effectively to job seekers and employers beyond the designated workforce areas. The 28 workforce



boards and the Texas Workforce Commission are working together to determine how the requirements of the act will be implemented in Texas.

#### Infrastructure Funding

Infrastructure costs are intended to:

- maintain the one-stop delivery system to meet the needs of the local areas;
- reduce duplication by improving program effectiveness through the sharing of services, resources, and technologies among partners;
- reduce overhead by streamlining and sharing financial, procurement, and facilities costs;
- encourage efficient use of information technology to include where possible the use of machine readable forms and shared management systems;
- ensure services provided by the one-stop partners increase financial efficiency under the partner's program; and
- ensure that costs are appropriately shared by one-stop partners by basing contributions on proportionate share of use, and requiring that all funds are spent solely for allowable purchases.

Infrastructure costs can be funded through either a local funding mechanism or through a state funding mechanism. Both methods, through authorizing legislation and statutes, utilize the funds for one-stop partners. MOUs are executed in relation to the operation of the one-stop delivery system within the local workforce area to facilitate the implementation of infrastructure funding.

#### **Recommendation**

It is recommended that the Council note the information contained in this memorandum and its attachment.

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Texas Workforce Investment Council

# Workforce Innovation and Opportunity Act:

A Compendium

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## Program Overview

In the early 1990s, workforce development in Texas was a patchwork of programs and services across many state agencies. These programs were often inefficient and disjointed. Recognizing the critical need for a workforce development system responsive to employers, job seekers, and economic development, state leaders examined the structure and determined to consolidate workforce administration and programs. In 1995, through House Bill 1863, 28 workforce programs were merged. The goal of consolidation was the development of a system that was employer-driven and locally controlled, and which offered integrated services to employers, job seekers, and communities throughout the state.

This consolidation positioned Texas to become one of the first states to implement the federal Workforce Investment Act of 1998 (WIA, Public Law 105-220), which replaced the workforce system requirements that operated under the Job Training Partnership Act. This far-reaching legislation envisioned an integrated workforce delivery system composed of one-stop career centers administered by the local workforce boards. The federal law, in large part, reflected the Texas model.

The Workforce Innovation and Opportunity Act of 2014 (WIOA, Public Law 113-128) was enacted on July 22, 2014. This legislation passed Congress with a bipartisan majority and is designed to help job seekers access employment, education, and training in order to achieve success in the workforce. It repeals the WIA and is the new federal law for workforce program and service delivery.

Texas is fortunate to have a mature workforce system already in place. Texas House Bill 1863 consolidated the state's workforce programs into a single, integrated delivery system. Texas has implemented an employer-driven, locally controlled workforce system offering integrated services to employers, job seekers, and communities throughout the state for well over a decade. Because Texas has already laid a strong foundation for the implementation of WIOA, the focus can remain on the provision of programs and services and continuous improvements, rather than—as is the case in many other states—building a new, consolidated system.

Most provisions of the WIOA take effect July 1, 2015—the first full program year after enactment. The WIOA state unified and local plans and the WIOA performance and accountability provisions take effect on July 1, 2016.

### Core Programs

The WIA made significant accomplishments in assisting job seekers acquire new skills to increase employment, job retention, and earnings. The WIOA continues to promote better alignment and strengthen collaboration with the core programs:

#### *Title I – Workforce Development Activities*

- authorizes the one-stop delivery system with which state and local workforce development training and employment activities must be coordinated
- integrates adult education and vocational rehabilitation programs that assist individuals with disabilities in obtaining employment as key partners in system planning

#### *Title II – Adult Education and Literacy*

- authorizes education services for basic skills, secondary education, literacy activities, and English language training to assist adults in improving their skills

*Title III – Wagner-Peyser Act of 1933*

- authorizes the public employment-related services and the employment statistics system
- provides job search and job matching assistance to unemployed individuals through the one-stop system

*Title IV – Rehabilitation Act of 1973*

- provides employment-related services to individuals with disabilities

## Key Highlights of the WIOA

The WIOA maintains the basic structure of the WIA in many ways. From summaries made available by the DOL, the key highlights of the WIOA include the following:

- *Requires States to Strategically Align Workforce Development Programs*  
The WIOA ensures that employment and training services provided by the core programs are matched to job seekers to enable them to acquire skills and credentials that meet employers' needs. Texas is now required to produce one unified strategic plan that describes how training, employment services, adult education, and vocation rehabilitation will be provided through a coordinated, comprehensive system.
- *Promotes Accountability and Transparency*  
The WIOA ensures that federal investments in employment and training programs are evidence-based and data-driven, and accountable to participants and taxpayers.

Programs are now required to report on a set of common performance indicators that will provide key information such as the number of job seekers that entered and retained employment, median wages, skill gains, and the number of participants who attained a credential.

- *Fosters Regional Collaboration*  
The WIOA promotes alignment of workforce development programs with regional economic development strategies to increase the agility of the state and local board areas and to position local boards to best meet local and regional employers' workforce needs.
- *Improves the American Job Center System*  
The WIOA increases the quality and accessibility of services that job seekers and employers receive at their local American job center. Services include access to quality training, integrated intake, case management, and other strategies to improve services that lead job seekers into in-demand occupations.
- *Improves Services to Employers and Promotes Work-Based Training*  
The WIOA contributes to economic growth and business expansion by ensuring the workforce system is job-driven by matching employers with skilled individuals. Additionally, the law offers opportunities with employers that include on-the-job training, internships, and apprenticeship as training paths to employment.
- *Provides Access to High Quality Training*  
The WIOA helps job seekers acquire industry-recognized credentials for in-demand jobs. Strategies used are focused on job seekers' educational and career advancement.

- *Enhances Workforce Services for the Unemployed and Other Job Seekers*  
The WIOA ensures that job seekers have access to high-quality workforce services. There is no longer a required sequence of services, which makes training enrollment more comprehensive and services readily available.
- *Improves Services to Individuals with Disabilities*  
The WIOA increases access to high-quality workforce services for individuals with disabilities and prepares them for competitive, integrated employment.
- *Makes Key Investments in Serving Disconnected Youth and Other At-Risk Populations*  
The WIOA increases the use of work experience activities such as on-the-job training and internships to prepare in-school and out-of-school youth for successful employment.
- *Enhances Connections With the Registered Apprenticeship Program*  
The WIOA promotes the use of apprenticeship, a proven model that provides workers with career pathways and opportunities to earn while they learn.
- *Streamlines and Strengthens the Strategic Roles of Workforce Development Boards*  
The WIOA increases the agility of state and local workforce boards and positions them to meet local and regional employers' workforce needs.

## Grandfather Provisions

Like the WIA that preceded it, the WIOA includes grandfather provisions that allow the state to continue operating under current state law while remaining consistent with federal law:

### *State Workforce Development Boards (Section 101)*

- authorizes Texas to maintain the current structure and membership of the Texas Workforce Investment Council

### *Local Workforce Development Boards (Section 107)*

- authorizes local workforce development boards to maintain their current structure and membership
- retains alternative entity provision that allows local entities established to serve the local area to serve as a local board, pursuant to state law

### *Secretarial Administrative Authorities and Responsibilities (Section 189)*

- specifies that a service delivery area designated for the delivery of workforce services may continue to be used
- permits the state to use the state law that sanctions local areas for failure to meet performance accountability measures

### *Continuation of State Activities and Policies (Section 193)*

- authorizes the state to allocate or disburse funds within the state, in accordance with the allocation formula and disbursement procedure followed under prior state law
- authorizes a local board to allocate or disburse funds within the local area in accordance with the disbursement procedure under prior state law

- authorizes local areas to use fiscal agents selected with a process under prior state law
- authorizes local boards to designate the one-stop partner and one-stop operators under prior state law
- authorizes the state to carry out a procedure in which the persons responsible for selecting eligible providers are not selected to provide both intake and training services in effect under prior state law
- authorizes a state to designate a state board to assign functions and roles in accordance with prior state laws
- specifies that local boards may use and carry out a local plan that includes assigning functions and roles that were developed under prior state law

### Job-Driven Action Plan

The WIOA is built from the strong foundation and proven practices of the WIA. The new legislative provisions are designed to help job seekers access employment, education, and support services. Additionally, they are designed to further enhance program coordination, streamline service delivery, align programs across common goals, and increase accountability and transparency.

While emphasizing seamless pathways for job seekers, the new law is also designed to improve services to employers through career pathways, work-based training, and employment services focused on in-demand occupations. These enhanced services requirements will help strengthen connections with employers enabling providers to better identify the skills employers need most, assist workers in acquiring those skills, and match employers with skilled workers.

### Services to Job Seekers

The WIOA continues to advance access to employment and training services that enable job seekers to succeed in the labor market. The following changes to adult and dislocated workers, and youth population program funds will enhance access to workforce services:

#### Adults and Dislocated Workers

- Local workforce boards can transfer up to 100 percent of funds between adult and dislocated worker programs to more effectively serve job seekers.
- Service categories of core and intensive services are streamlined into “career services.” The elimination of the required sequence of services enables job seekers to access training immediately.
- Local workforce boards can use up to 20 percent of their adult and dislocated worker program funds for incumbent worker training programs.
- Local workforce boards may use up to 10 percent of grant funds to provide transitional jobs that are time-limited subsidized work experiences in the public, private, or nonprofit sector for individuals with barriers to employment.



- Under the dislocated worker formula, no state receives less than 90 percent or greater than 130 percent of the allotment for the preceding year (beginning in FY 2016).
- Priority of services are provided to job seekers who are basic skills deficient, or who are low-income individuals.

## Youth

- Out-of-school youth is now prioritized. The focus is on career pathways for youth, dropout recovery efforts, and education and training that lead to the attainment of a high school diploma and a recognized postsecondary credential.
- Local workforce development areas must increase the percentage of youth formula funds to serve out-of-school youth from 30 percent under the WIA to 75 percent.
- Local workforce development areas must spend at least 20 percent of youth formula funds on work-based learning for both in-school and out-of-school youth. Work-based learning activities include summer jobs, pre-apprenticeship, on-the-job training, job shadowing, and internships.
- Eligibility criteria have changed for the youth formula program:
  - in-school youth are ages 14–21,
  - out-of-school youth are ages 16–24.

## Services to Employers

The WIOA contributes to economic growth and business expansion by ensuring the workforce system is job-driven and matching employers with skilled individuals for in-demand occupations. The following are changes that will enhance services designed to assist employers:

- Opportunities to assist employers in providing work-based learning experiences in apprenticeships, on-the-job training, internships, and customized training are available.
- New performance indicators have been added for services to employers.
- Enhanced program coordination efforts and alignment of programs support a vision of well-connected partnerships between local workforce boards and employers that develop strong, job-driven training programs.

## Eligible Training Providers

The WIOA mandates that the Governor establish eligibility criteria and procedures for training providers.

The U.S. Department of Labor (DOL) will no longer issue state plan waivers that allow a state to extend the period of initial eligibility for training providers under the WIOA. Consequently, training providers are now required to report employment and earnings outcome data for all the students they serve, not just the participants whose training costs were funded by the WIOA.

## Requirement for a State Unified Plan

### The Planning Process

The WIOA requires the Governor to submit a state plan to the U.S. Department of Labor that will outline a four-year plan for the workforce investment system. The due date for the plan submission is March 1, 2016.

There are two types of state plans—a unified state plan or a combined state plan. A unified plan includes the strategic and the operational elements for the WIOA's four titles. A combined plan also includes operational elements that are required by federal agencies for other programs such as Supplemental Nutrition Assistance Program Employment and Training (SNAP E&T) and Temporary Assistance for Needy Families (TANF). It is anticipated that Texas will submit a unified plan.

The WIOA instructs the state workforce board to assist the Governor in developing the unified state plan. The Governor must ensure the planning process is completed in a transparent manner, and in consultation with a variety of workforce partners that include local workforce boards, business representatives, adult education providers, and postsecondary institutions. The state workforce board should play a significant role in developing the unified state plan.

### The Structure of the Plan

The WIOA statute identifies the structure required for the unified state plan. The plan must be composed of strategic and operational planning elements. The strategic elements plan should describe the state's vision, goals, and strategies for preparing an educated and skilled workforce to close the skills gap and meet employer needs. The operational planning elements in the unified state plan must describe each program and the operating systems and policies that support the program and implementation strategies.

The WIOA highlights the use of sector partnerships, career pathways, performance measurement, and job-driven training. The intent is that these four concepts will help in developing strategies for an effective and meaningful unified state plan.

#### Sector Partnerships

The WIOA emphasizes the use of sector partnerships as a key strategy in meeting the needs of job seekers and employers. Sector partnerships can help organize multiple employers and stakeholders in the same industry cluster into a group that focuses on shared goals and human resources needs.

Under the WIOA statute, the unified state plan must include a description of how employers will be engaged, including how sector partnerships will be used. Unified state plans should emphasize and describe the state's criteria for local or regional sector partnerships and explain how the partnership will be supported.

#### Career Pathways

The WIOA advocates career pathways as an essential workforce development strategy. Career pathways align and integrate education, job training, counseling, and support services to create accelerated pathways to postsecondary education credentials and employment in in-demand occupations.

As outlined in the WIOA, state and local boards are tasked with developing career pathways. The unified state plan may describe strategies for aligning the core programs and describe how the sector partners will collaborate with one another in order to create career pathways as defined by the WIOA. Under the WIOA, it is essential the state programs collaborate with one another.

#### Performance Measurement

One of the major achievements of the WIOA is the establishment of the performance measures that apply to each of the four WIOA titles funded by the WIOA.

The unified state plan requires a description of how the performance measures will be used in measuring the success of the programs in the WIOA. Additionally, the unified state plan should explain the steps that will be taken to create a dashboard to display performance results.

The unified state plan should also identify a comprehensive system for linking data across workforce and education agencies so that the measuring of performance outcomes may be achieved.

#### Job-Driven Training

Middle-skill jobs account for the largest share of jobs in the labor market, yet there aren't enough job seekers trained at the middle-skill level. Ideally, investment in education and training should reflect current and future jobs in the state.

The unified state plan requires an analysis of both job seekers' and employers' skill needs. The analysis should include how well the state's investments in education and training satisfy those needs. Additionally, the unified plan should indicate how Texas will invest education and training dollars in middle-skill programs that will help close skills gaps and support job-driven strategies.

The WIOA emphasizes training that is directly connected to jobs, such as incumbent worker training, on-the-job training, apprenticeship, and other types of work-based learning. By definition, sector partnerships and career pathways are also job-driven. The unified state plan should identify how job-driven training will be part of Texas' strategy to close any skills gaps.

#### Approval Process

The state plan is subject to the approval of both the secretary of labor and the secretary of education, after approval of the commissioner of the Rehabilitation Services Administration. The plan is considered to be approved at the end of the 90-day period beginning on the day the plan is submitted, unless the secretary of labor or the secretary of education makes a written determination that the plan is inconsistent with the statute provisions during the 90-day period.

## Requirement for Regional Planning

### Background

The Texas Workforce and Economic Competitiveness Act, adopted in 1993, established a Human Resource Investment Council as authorized under the Job Training Partnership Reform Amendments of 1992. The Texas Workforce Investment Council (Council) began operations in September 1993 as the state's Human Resource Investment Council.

The federal Workforce Investment Act of 1998 (WIA) replaced the Job Training Partnership Act and required the governor of each state to establish a state workforce investment board.

The WIA provided for a number of grandfather provisions. As the Human Resources Investment Council was in existence prior to the enactment of the WIA, the legislation also allowed Texas to retain its system of local workforce delivery as established under prior consistent state law, including one statutory requirement, specific to the designation or redesignation of workforce development areas for the local planning and delivery of workforce development. The WIA also allowed for Texas to retain the Council as the state workforce investment board.

### Expectations of the Regional Plan

States are required to establish regions to ensure that training and employment services support the economic growth and that employment opportunities are meeting the skill competency requirements of the regions. Regional partnerships help facilitate the alignment of workforce development activities with regional economic development activities, and better support the execution and implementation of sector strategies and career pathways. Cooperation between regions can also lower costs and increase the effectiveness of service delivery to businesses and job-seekers through the coordination of shared services, processes, and operations.

The regional plan is the primary vehicle for communicating the vision of a region, collectively with its workforce development area. The plan provides the service delivery model for that area and ensures that the workforce system is job-driven and matches employers with skilled individuals.

The WIOA outlines the activities for the development of a regional plan. Initial designation is effective for two years. Local plans within regions must be incorporated in the regional plan and the regional plan must include a description of all coordinated activities.

Under the WIOA, regional planning requires local elected officials and workforce development areas to engage in a regional planning process resulting in:

- A. the preparation of a regional plan, which includes local plans for each workforce development area in the planning region;
- B. the establishment of regional service strategies, including cooperative service delivery agreements;
- C. the development and implementation of sector initiatives for in-demand industry sectors or occupations for the region;
- D. the collection and analysis of regional labor market data;
- E. the establishment of administrative cost arrangements, including the pooling of funds for administrative costs, as appropriate, for the region;
- F. the coordination of transportation and other supportive services, as appropriate, for the region;
- G. the coordination of services with regional economic development services and providers; and

- H. the establishment of an agreement concerning how the planning region will collectively negotiate and reach agreement with the governor on local levels of performance, as well as report on the performance accountability measures for the workforce development area or the planning region.

### Coordination of the Regional Plan

The coordination required for regional planning allows for the workforce development areas to identify areas of efficiency, coordinate effective practices, and streamline service delivery. The workforce development area must submit the regional plan to the governor for approval.

The workforce development area must review the regional plan every two years and submit a modification based on significant changes in labor market and economic conditions. This requirement will help ensure that planning regions use their plans to drive economic development and customer-focused service delivery strategies.

Texas' workforce development areas have collaborated and developed strong partnerships long before the WIOA statutory requirement. Examples include:

- meeting the needs of industries through the collaboration of businesses
- supporting the needs of the oil and gas industry
- participating in a multi-state grant-funded consortium that helps low-income, low-skill job seekers earn the skills and credentials needed to obtain in-demand occupations
- establishing a multiregional coordinated strategy to recruit and train for the needs of businesses
- meeting the needs of employers and job seekers through skills training and the creation and credential of a work-ready workforce

Texas is requesting that the U.S. Department of Labor allow states the flexibility to structure regional planning efforts. This will allow for the workforce development areas to maintain their operations as currently structured so that they may continue promoting, collaborating, leveraging, and ensuring that services are delivered efficiently and effectively to job seekers and employers. This is critical to the success of a workforce system.

In the spring of 2015, a regional identification workgroup composed of staff from the Texas Workforce Commission (TWC) and representatives from workforce development areas met several times. The group provided feedback and recommendations on planning strategies and regional identification to TWC staff. Those comments and recommendations became the basis for a concept paper that articulates the rationale for determining regions in Texas. The concept paper will be considered by the TWC commissioners as the agency begins the implementation of the WIOA.

Regions must be identified in the WIOA state plan, which is being developed by the TWC. This plan will be considered by the Council in February 2016. Following approval by the governor, the state plan must be submitted to the U.S. Department of Labor no later than March 1, 2016.

## Infrastructure Funding

### The Workforce Development System

In 1995, the Texas Legislature passed House Bill 1863. This act changed the planning and delivery of workforce services to meet the needs of Texas businesses, workers, and communities through an integrated, locally controlled delivery system.

The Texas Workforce Commission (TWC), is partnered with 28 local workforce boards that make up the Texas Workforce Solutions network. Through one-stop centers across the state and in collaboration with workforce partners, Texas Workforce Solutions provides essential workforce development tools and innovative services to support employers and workers.

The primary functions of a local workforce board are planning, oversight, and evaluation for all workforce development activities in the local workforce area. A local workforce board may hire staff to carry out these functions, or it may procure another entity to provide them.

Because of the various workforce partners, each local workforce board is charged with coming to an agreement regarding the infrastructure costs that must be shared by all of the required partners in the system. These agreements are captured in a memorandum of understanding (MOU).

### Objectives of Infrastructure Costs

Infrastructure costs are intended to:

- maintain the one-stop delivery system to meet the needs of the local areas;
- reduce duplication by improving program effectiveness through the sharing of services, resources, and technologies among partners;
- reduce overhead by streamlining and sharing financial, procurement, and facilities costs;
- encourage efficient use of information technology to include where possible the use of machine readable forms and shared management systems;
- ensure that costs are appropriately shared by one-stop partners by basing contributions on proportionate share of use, and requiring that all funds are spent solely for allowable purchases; and
- ensure services provided by the one-stop partners increase financial efficiency under the partner's program.

### Infrastructure Costs

Infrastructure costs represent the non-personnel costs that are necessary for the general operation of the one-stop center that include:

- facility rentals,
- utilities and maintenance,
- equipment (including skills assessment-related products and assistive technology for individuals with disabilities), and
- technology to facilitate access to the one-stop center, including the center's planning and outreach activities.

### Funding of Infrastructure Costs

Infrastructure costs can be funded through either a local funding mechanism or through a state funding mechanism. Both methods, through authorizing legislation and statutes, utilize the funds for one-stop partners.

Federal funds are distributed from a federal agency to a state. The state then allocates the money to the local workforce boards who then allocate funds to the one-stop centers. Under both the local and state funding mechanisms, each one-stop partner must contribute a proportional share of the funding toward infrastructure costs.

Funds for infrastructure costs must come from the administrative funds associated with each respective program. Limitations are also placed on how much each partner can contribute to infrastructure costs. These limitations are as follows, by program:

- Adult, dislocated worker and youth: must not exceed three percent of the federal funds provided to the state
- Vocational rehabilitation: must not exceed 0.75 percent of the federal funds provided to the state in the second full program year; 1 percent of the federal funds provided to the state in the third full program year; 1.25 percent of the federal funds provided to the state in the fourth full program year; 1.5 percent of the federal funds provided to the state in the fifth full program year and in each succeeding year
- Other partners: must not exceed 1.5 percent of the federal funds provided to the state

### Local Infrastructure Funding Mechanism

In the local infrastructure funding mechanism, partner programs determine the funds they will use, but these funds must still meet the requirements of the program's relevant statutes and regulations. Under the WIOA, one-stop partners work together to administer the partner programs and other activities as efficiently and effectively as possible.

The local one-stop funding mechanism must meet all of the following requirements:

- Partner infrastructure costs must be funded through cash and in-kind partner contributions to provide a stable and equitable funding stream for ongoing one-stop delivery system operations.
- Partner contributions must be negotiated between one-stop partners, elected officials, and the local workforce board and the amount contributed must be included in the MOU.
- Partner's share of funding must be calculated upon a reasonable cost allocation methodology where infrastructure costs are charged to each partner in proportion to relative benefits received.
- Partner infrastructure costs must be allowable, reasonable, necessary, and allocable.
- Partner shares must be periodically reviewed and reconciled against actual costs incurred.

One-stop partner programs are able to determine the funds they will use for infrastructure costs in a local infrastructure mechanism as long as they are within authorizing statutes and regulations. One-stop partners are not capped on the amount or percent of funding that may be contributed to fund infrastructure costs under the local funding mechanism.

Under the WIOA, if a consensus is not met on methods of adequately funding infrastructure costs through the local infrastructure funding mechanism, the local workforce board must notify the governor and the governor will develop the requirements for funding through the state one-stop funding mechanism.

### State Infrastructure Funding Mechanism

In the state infrastructure funding mechanism, the governor determines the amount each partner will contribute for the infrastructure costs. The governor determines partner contributions, based upon a methodology where infrastructure costs are charged to each partner in proportion to relative benefits received and consistent with the partner program's authorizing laws and regulations.

The state board is responsible for developing an allocation formula to be used by the governor to allocate funds to any local workforce boards that did not successfully use the local funding mechanism. The allocation formula must take into account the number of one-stop centers in a local area, the population served by such centers, the services provided by such centers, and other factors relating to the performance of such centers that the state board determines are appropriate and that are consistent with federal cost principles. Amounts will be calculated based on the proportionate use of the one-stop centers by each partner. The governor will consider the statutory requirements and each partner's ability to fulfill such requirements.

### The Memorandum of Understanding (MOU)

The WIOA seeks to create a seamless service delivery system by aligning local workforce boards and one-stop partners through the use of MOUs. MOUs are executed in relation to the operation of the one-stop delivery system within the local workforce area to facilitate the implementation of infrastructure funding.

The MOU must contain the following information whether the local areas use either the local one-stop or the state one-stop infrastructure funding method:

- the services to be provided through the one-stop delivery system,
- the costs of such services and the operating costs,
- the methods of referral of individuals between the one-stop operator and the one-stop partners for appropriate services and activities,
- the methods to ensure the needs of workers and youth, and individuals with barriers to employment, including individuals with disabilities, are addressed in the provision of necessary and appropriate access to services, including access to technology and materials, made available through the one-stop delivery system, and
- the duration of the memorandum and the procedures for amending the memorandum during the duration of the memorandum, and assurances that such memorandum must be reviewed not less than once every 3 year period to ensure appropriate funding and delivery of services.

The MOU must include the final plan, or an interim plan if needed, on how the costs of the services and the operating costs of the one-stop system will be funded. Shared operating costs may include shared costs of the local workforce board. Local workforce boards and one-stop partners may develop a single umbrella MOU that applies to all partners, or develop separate agreements between the local workforce board and each partner or groups of partners.

### Role of Vocational Rehabilitation with the One-Stop System

Previously, under WIA, one-stop partners were represented on the state and local workforce boards. Under the WIOA, not all partners have seats on these boards. The WIOA designates certain programs as core programs in the workforce development system. Vocational Rehabilitation (VR) is among those designated as a core program and serves as a mandatory member of the state and local workforce boards. The other core programs include adult, dislocated worker, and youth programs, the state employment services (Wagner-Peyser), and the adult education and literacy program.



**TWIC INFORMATION ITEM  
MEMORANDUM**

REF: KL.twic.III2.120415

**TO** Council Members**SUBJECT** October 19–20, 2015 Meeting of the Rehabilitation Council of Texas

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**Introduction**

This memorandum outlines the major points of discussion at the Rehabilitation Council of Texas (RCT) meeting on October 19–20, 2015.

**Background**

The RCT is federally mandated by the Rehabilitation Act of 1973, as amended in 1992 and 1998. The 1998 amendments to the Rehabilitation Act require a partnership between the RCT and the Division for Rehabilitation Services (DRS) within the Department of Assistive and Rehabilitative Services (DARS). In 2004, the DARS Division for Blind Services (DBS) also began a partnership with the RCT. The RCT reviews, analyzes, and advises the DRS and the DBS on policy, scope, and effectiveness of vocational rehabilitation (VR) services and eligibility requirements. The RCT works in partnership with those divisions to develop, agree to, and review state goals and priorities. The RCT also contributes to the preparation of the state plan for VR.

Statutory membership requirements for a state rehabilitation council, as specified in 34 CFR 361.17, include the appointment by the Governor of a minimum of 15 members, with at least one member representing the State Workforce Investment Board (SWIB). The Texas Workforce Investment Council (Council) serves as the SWIB in Texas. Joyce Delores Taylor, Council member, serves on the RCT.

**Highlights from the October 2015 RCT Meeting**

**Presentation** – Tania Jordanova, researcher from the University of Texas Child and Family Research Institute School of Social Work, provided an update on the comprehensive statewide needs assessment survey that is being conducted on behalf of DARS. The 2015 annual survey is focused on understanding the needs of youth transitioning from high schools. The objective of the study is to receive consumer feedback, identify transition needs of youth with disabilities, and provide recommendations to DARS. Preliminary findings were presented in advance of the final report that will be published in November. These include a lack of diverse employment options available for transitioning students, the identification of certain disabilities that still remain underserved in the community, the recognition of caseload volume impacting quality service delivery, and the lack of clearly defined roles between DARS and high schools. Recommendations are included for DARS, schools, caregivers, and communities.

**DARS Commissioner Update** – DARS commissioner, Veronda Durden, updated the RCT on White Cane Day celebrated on October 14, 2015. The Commissioner also provided an update on the transfer of the VR program from DARS to the Texas Workforce Commission (TWC), effective September 1, 2016. She provided members with information on the oversight committee that was formed to plan and coordinate actions between the two agencies. Once the program has transferred, TWC will begin the process of fully integrating general and blind VR services. All actions to integrate VR services must be finalized by October 1, 2017.

**Assistant Commissioner Updates (DRS and DBS)** – Cheryl Fuller, DRS assistant commissioner, and Scott Bowman, DBS interim assistant commissioner, provided an update on agency activities to date. Annual performance as of September 30, 2015 was reported, based on goals to provide vocational rehabilitation services and support quality employment outcomes. Primary goals for DRS and DBS in the RCT strategic plan were discussed. The DRS goals focus on employment of target populations, services to students with disabilities, and partnerships such as collaboration with local workforce development boards. The goals for DBS emphasize vocational rehabilitation services, a consumer service delivery system, expansion of access to employment services, improvements to pre-employment services, and development of business relationships. An update on the transition of VR programs from DARS to TWC was also provided. In addition, the timeline for developing and submitting the unified state plan, as required under the Workforce Innovation and Opportunity Act, was also discussed. The state plan is due to the U.S. Department of Labor (DOL) by March 3, 2016. Following approval by the Governor and submission to and approval by the relevant federal agencies, the plan will go into effect on July 1, 2016. The plan must show DARS as the operating entity for VR programs since the transfer to TWC will not occur until September 1, 2016. After September 1, 2016, a modification of the plan will be required to document that TWC is the agency responsible for the VR program. When the transition has been finalized in 2017, a second modification will be required to realign service delivery areas (DARS regional areas to local workforce development board areas).

**Strategic Planning** – RCT Chair, Martha Garber, led the strategic planning process to develop vocational rehabilitation two-year strategies that will enable the RCT to achieve its objectives. The discussion included discussion of the goals for DRS and DBS. It also included discussion about ensuring that RCT strategies do not conflict with strategies in the combined state plan for WIOA that is currently in review by TWC.

The next RCT meeting is scheduled for January 26–27, 2016 in Austin, Texas. This will be a joint meeting with the Texas State Independent Living Council.

#### **Recommendation**

It is recommended that the Council note the information contained in this memorandum.



## Texas Workforce Investment Council

# *Policy News Highlights*

Issue 31, Quarter 3, September 2015

*Policy News Highlights* is a quarterly review of selected reports relevant to the policy and research functions of the Texas Workforce Investment Council (Council). Federal and state agency websites, in addition to numerous public policy and educational databases, are scanned monthly for relevant and emerging issues. Reports are catalogued and stored electronically in the Council's Information Repository (IR).

The IR is divided into 10 topic areas that correspond to priority issues supporting the Council's current strategic plan. They are: adult education, apprenticeship, career and college readiness, career and technical education, clusters and sector strategies, competitiveness, data, disabilities, supply-demand, and training. Not every topic area is addressed each quarter.

*Policy News Highlights* is organized as an annotated bibliography with short summaries of recent articles grouped according to their topic area.

### Apprenticeship

#### ***Registered Apprenticeship Programs: Improving the Pipeline for People with Disabilities*, U.S.**

Department of Labor, Office of Disability Employment Policy, July 2015

This overview of registered apprenticeships and pre-apprenticeships highlights prior initiatives that have focused on persons with disabilities and discusses challenges associated with providing apprenticeship programming. In addition, recommendations are provided regarding actions that federal agencies could take to promote registered apprenticeship and the associated strategies to increase the employment of people with disabilities. The report also presents career planning strategies, emphasizes the need for career and technical education preparation and planning, identifies job growth industries in the registered apprenticeship program, and underscores the continuing need for increased pre-apprenticeship opportunities to ensure youth and adults develop the skills and transferable competencies needed to enter, retain, and advance in registered apprenticeship programs.

[www.dol.gov/odep/pdf/ApprenticeshipReport.pdf](http://www.dol.gov/odep/pdf/ApprenticeshipReport.pdf)

### Career and College Readiness

#### ***Career Pathways Toolkit: A Guide for System Development*, U.S. Department of Labor, September 2015**

Designed to support the state level workforce professionals representing one of the core partners developing a Workforce Innovation and Opportunity Act unified plan, this toolkit incorporates key

provisions in the Act related to effectively implementing career pathways. Partners may include workforce, education, and vocational rehabilitation agencies. Six key elements for developing a comprehensive career pathways system include: building cross-agency partnerships, identifying industry sectors and engaging employers, designing education and training programs, identifying funding needs and resources, aligning policies and programs, and measuring system change and performance.  
[www.workforce3one.org/view/2001523732879857569](http://www.workforce3one.org/view/2001523732879857569)

***How Are States Reporting on College and Career Readiness***, Career and College Readiness and Success Center, September 2015

Widespread variation of state reporting on readiness for careers at the end of K-12 education is addressed in this brief. It highlights misalignment between current practice in measuring readiness and readiness as a key indicator of long-term success for more than half of high school graduates who either progress directly into the workforce or who attempt to work and further their education at the same time. It identifies metrics to measure readiness based upon academic content and pathway knowledge, lifelong learning skills, and postsecondary outcomes of former students. Among the measures of career pathway knowledge, this brief cites industry-based certifications as the most commonly reported non-Perkins measure for workforce readiness. However, only 34 states currently report any measure of career pathway knowledge to the public, including those required by the federal Carl D. Perkins Career and Technical Education Act. Notably, recommendations are included to help states develop practices that support measuring college and career readiness.

[www.ccrscenter.org%2Fsites%2Fdefault%2Ffiles%2FAskCCRS\\_Metrics.pdf](http://www.ccrscenter.org%2Fsites%2Fdefault%2Ffiles%2FAskCCRS_Metrics.pdf)

***Developing Pathways to Ensure a Skilled Workforce for State Prosperity: A Framework for State Policymakers***, State Pathways to Prosperity Initiative, Council of State Governments, August 2015

Representatives of diverse perspectives in all regions of the U.S. contributed a year of study, dialogue, and deliberation to produce the compilation of policy recommendations included in this report. The task force considered the key barriers to prosperity and opportunities to engage key populations of students in the learning process. Policy recommendations include the alignment of K-12, postsecondary education, and workforce development; K-16 educator preparation; access and success in education and training; effective development, sharing, and use of data; and measurement of success. Children and youth, veterans, criminal justice, and hunger and nutrition are explored in greater detail with case study highlights from multiple states.

[www.csg.org/programs/documents/Pathways\\_to\\_Prosperty\\_Report.pdf](http://www.csg.org/programs/documents/Pathways_to_Prosperty_Report.pdf)

***Using Comparative Information to Improve Student Success***, Aspen Institute, August 2015

Community colleges are increasingly focused on student outcomes and are aligning and improving services that improve student learning and successful completion of a postsecondary credential. This guide recognizes the need for high-quality comparative data from across higher education institutions to inform efforts toward improvement. It includes guidance on how to identify a peer group of colleges and use comparative information to benchmark performance over time. It also outlines how to collect comparative student outcome information regarding completion, transfer, bachelor's degree attainment, equitable access, learning, and post-graduation success in labor markets. It encourages systematic and regular use of comparative data to inform, invent, and scale new strategies for increasing student success.

[www.aspeninstitute.org/sites/default/files/content/docs/pubs/UsingComparativeInformationGuide.pdf](http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/UsingComparativeInformationGuide.pdf)

***Making Pell Work: How America's \$30 Billion Investment in Need-Based College Aid Can Be More Job-Driven***, National Skills Coalition, July 2015

This issue brief examines the role career-oriented programs have come to play in both postsecondary education and in the U.S. economy, and offers recommendations to policymakers on how to make these programs more accessible to working learners and to employers seeking to sustain or grow their businesses. To increase the utility of Pell grants, this report encourages making short-term occupational certificate programs and demand-driven noncredit programs eligible for Pell grants, and use sector partnerships to help ensure that short term and noncredit programs are demand-driven.

[www.nationalskillscoalition.org/resources/publications/file/2015-07-Making-Pell-Work-How-Americas-30-Billion-Investment-in-Need-Based-College-Aid-Can-Be-More-Job-Driven.pdf](http://www.nationalskillscoalition.org/resources/publications/file/2015-07-Making-Pell-Work-How-Americas-30-Billion-Investment-in-Need-Based-College-Aid-Can-Be-More-Job-Driven.pdf)

***Creating Pathways to Employment: The Role of Youth/Industry Partnerships in Preparing Low-Income Youth and Young Adults for Careers in High-Demand Industries***, National Fund for Workforce Solutions and Jobs for the Future, June 2015

This report highlights the primary lesson that emerged from the youth/industry partnership initiative, a focused 18-month effort to learn how employer-led industry partnerships contribute to resolving two significant workforce challenges. It focuses on the need for a collaborative effort that is led by employers and industry partnerships to build high quality employer-connected pathways to resolve the challenges of employers struggling to find skilled workers, even as young adults struggle to enter the workforce. The initiative explored how industry partnerships can lead the development of employment pathways that offer a clear sequence of courses, training credentials, and job placement in high demand sectors.

[www.iff.org/sites/default/files/publications/materials/Creating-Pathways-to-Employment-073015.pdf](http://www.iff.org/sites/default/files/publications/materials/Creating-Pathways-to-Employment-073015.pdf)

## Clusters and Sector Strategies

***Voice: The Guide to Developing Manufacturing Ambassadors***, Manufacturers Institute, October 2015  
Designed to help manufacturers engage students in order to develop the future workforce, this guide continues to build on the National Association of Manufacturers' *Dream It. Do It.* campaign. This approach involves developing young ambassadors to become a voice for their company and industry. It was created by manufacturers for manufacturers to help employers in the industry recruit young workers to fill job openings due to retirement. The guide presents a low cost, community engagement strategy to improve the talent supply and increase company awareness within the community. It leverages nationally developed resources, including a quick start guide, marketing and events planning materials, how-to guides, and more.

[www.themanufacturinginstitute.org/DIDIAmbassador-Program.aspx](http://www.themanufacturinginstitute.org/DIDIAmbassador-Program.aspx)

## Competitiveness

***Skills in the States: Sector Partnership Policy***, National Skills Coalition, August 2015

Sector partnerships provide a proven education and training strategy that improves economic opportunities for workers and their families and provides a skilled labor pool for employers. This report presents findings from a 50-state scan of policies that support local sector partnerships and help the workforce system meet the needs of workers and employers in targeted industries. It finds that only 21 states have policies in place and, among these, 15 are investing state or federal resources in support of

local partnerships. States that provide funding, technical assistance, or program initiatives—at least one or all of the supports—to local sector partnerships in more than one industry are counted among those with sector partnership policies. The majority of other states have some other state-level workforce initiatives in targeted industries that may provide a foundation for state policy-making.

[www.nationalskillscoalition.org/documents/2015-08-Skills-in-the-States-Sector-Partnership-Policy.pdf](http://www.nationalskillscoalition.org/documents/2015-08-Skills-in-the-States-Sector-Partnership-Policy.pdf)

## Data

***Better Information for Better College Choice & Institutional Performance***, U.S. Department of Education, September 2015

Designed to increase transparency, the College Scorecard makes data on the outcomes of college graduates entering in the workforce available to all stakeholders, including students selecting colleges, administrators improving program quality, and employers recruiting graduates. A guiding principle in its design was determining the metrics most frequently used by students to personalize and better inform decision-making. Significant research, validation, and analysis of the data available, both through the Integrated Postsecondary Education Data System and the National Student Loan Data System, revealed improvements that support this transformative approach.

<https://collegescorecard.ed.gov/assets/BetterInformationForBetterCollegeChoiceAndInstitutionalPerformance.pdf>

***Texas Business Outlook Surveys: Special Questions***, Federal Reserve Bank of Dallas, September 2015

Supplemental questions on employment expectations and the labor market were included in this monthly survey of Texas business executives. This annual survey addition highlighted hiring challenges in several sectors of the Texas labor market. Results from these questions in the Texas Manufacturing Outlook Survey, Texas Service Sector Outlook Survey, and Texas Retail Outlook Survey have been released together. The data collected represents responses from 266 Texas business executives. The surveys also collected data on the increase, decrease, or unchanged status of revenue, employment, prices, general business activity, and other indicators over the previous month.

[www.dallasfed.org/microsites/research/surveys/tssos/2015/1508/tssos1508.pdf](http://www.dallasfed.org/microsites/research/surveys/tssos/2015/1508/tssos1508.pdf)

***Good Jobs Are Back: College Graduates Are First in Line***, Georgetown Center on Education and the Workforce, August 2015

This analysis on the production of jobs since 2010 defines good jobs as those that pay \$53,000 or more and tend to be full-time with benefits such as retirement and healthcare. Findings suggest that of the 6.6 million jobs created since 2010, 2.9 million were good jobs. Comparatively, 1.8 million have been low-wage jobs and 1.9 million have been middle-wage jobs, noting that middle-wage jobs have not yet fully recovered from the recession. The report further suggests that the long-term hiring and the wage premium of college-educated workers have continued to grow stronger for more than 30 years including during periods of recession and recovery. Of the 2.9 million good jobs reported, the majority have been managers, STEM or healthcare professionals, and only 100,000 of these jobs employ people with less than a bachelor's degree. A primary distinction between this analysis and others is that occupations were used to group jobs rather than industries since an occupational analysis classifies a specific set of activities performed on the job.

[cew.georgetown.edu/wp-content/uploads/Good-Jobs\\_Full\\_Final.pdf](http://cew.georgetown.edu/wp-content/uploads/Good-Jobs_Full_Final.pdf)

***Tracking Graduates in the Workforce: Connecting Education and Labor Market Data***, National Governors Association, August 2015

Including program profiles from across the U.S., this report considers best practices in using data to track recent graduates into the workforce as a means to evaluate postsecondary education and training programs at the state level. The report notes that accurate information from education and workforce data is key to well-functioning labor markets. Directed at state governors, the findings support the use of data to improve educational system outcomes of recent graduates, workers, and employers; to improve postsecondary programs and hold institutions and other education and training entities accountable; and to inform decision-making by tracking where recent graduates find employment. [www.nga.org/files/live/sites/NGA/files/pdf/2015/1508TrackingGraduates.pdf](http://www.nga.org/files/live/sites/NGA/files/pdf/2015/1508TrackingGraduates.pdf)

***The Economic Value of College Majors***, Georgetown Center on Education and the Workforce, May 2015  
Using Census data to analyze wages for 137 college majors, this report details the most popular college majors, the majors that are most likely to lead to an advanced degree, and the economic benefit of earning an advanced degree by an undergraduate major. Findings suggest that salary averages by educational attainment can be deceptive. While there is a one million dollar lifetime premium to earning a college degree after completing high school, there is a 3.4 million dollar lifetime differential between college graduates in high-paying majors and those in the lowest-paying majors. [cew.georgetown.edu/wp-content/uploads/Economic-Value-of-College-Majors-Full-Report-v2.compressed.pdf](http://cew.georgetown.edu/wp-content/uploads/Economic-Value-of-College-Majors-Full-Report-v2.compressed.pdf)

## Disabilities

***Students at the Center: Deeper Learning for Students with Disabilities***, Jobs for the Future, August 2015  
Evidence-based instructional practices that help educators implement deeper learning opportunities are suggested to improve the outcomes of students with disabilities, and those without disabilities, in this report. Deeper learning activities engage students in rigorous instruction tailored to their individual needs and interests; incorporate formal and informal learning experiences; and support advancement based upon demonstrated mastery of the next level of instruction, course, or grade. Evidence suggests that these activities also improve students' ability to communicate effectively, to work well in teams, to solve complex problems, to persist in the face of challenges, and to take an active role in defining their own educational pathways. This report helps address the requirement by the U.S. Department of Education, Office of Special Education Programs, that states must fully disclose the precise steps taken to ensure better outcomes for students with disabilities. [www.jff.org/sites/default/files/publications/materials/Deeper-Learning-for-Students-with-Disabilities-072815.pdf](http://www.jff.org/sites/default/files/publications/materials/Deeper-Learning-for-Students-with-Disabilities-072815.pdf)

## Supply Demand

***Analyzing Talent Flow: Identifying Opportunities for Improvement***, U.S. Chamber of Commerce Foundation, Center for Education and Workforce, July 2015  
Improving the integration and use of employer and public data for critical jobs in key sectors is the focus of this guide that is designed to support an employer-driven approach to improve talent flows through targeted career pathways for all stakeholders. Talent flow analysis is a process for describing and analyzing the flow of workers into and out of a targeted set of jobs that are most critical to employers in

a given region. This guide describes the key steps for public-private economic and workforce development initiatives to implement talent flow analysis.

[www.uschamberfoundation.org/sites/default/files/Analyzing%20Talent%20Flow.pdf](http://www.uschamberfoundation.org/sites/default/files/Analyzing%20Talent%20Flow.pdf)

## Training

***Work Trends: The Joys and Disappointments of Older Part-time Workers***, John J. Heldrich Center for Workforce Development, September 2015

Highlighting similarities and differences between older and younger part-time workers, this report reveals two contrasting work experiences between voluntary part-time workers and involuntary part-time workers over the age of 50. The authors recognize significant differences between older workers who prefer to work full-time but cannot find a full-time job and those who prefer to work part-time. This study focused on similarities between jobs, such as similar work hours and job stability (three years or more). Findings suggest that although in cases where most of the part-time workers perform the same or similar tasks and work side-by-side with full-time workers, few part-time workers receive benefits, and the majority are paid by the hour.

[www.rutgers.us1.list-manage.com/track/click?u=3bfc927d38ac8ba6e8171562e&id=5852e107d9&e=7f77ffd9f8](http://www.rutgers.us1.list-manage.com/track/click?u=3bfc927d38ac8ba6e8171562e&id=5852e107d9&e=7f77ffd9f8)

***Veterans' Licensing and Certification Demonstration***, Center for Best Practices, National Governors Association for the U.S. Department of Labor, Education and Training Administration, August 2015  
A variety of state and occupation-related issues challenge efforts to accelerate licensing and certification of veterans according to this interim report based on direct engagement in the demonstration states. Focusing on high-volume military occupations, such as commercial drivers, law enforcement, and medics, a framework for examining the gaps between military and civilian occupational requirements is provided that includes a process for resolving misalignment and strategies to prepare veterans with the appropriate credentials to successfully compete for these jobs. Key findings suggest that states take similar approaches to accelerate licensing and certification of veterans but all are subject to a range of state- and occupation-specific challenges. Data about each state's veteran populations was essential at all stages of the demonstration. The report provides insight into various state methods to obtain and assess data and to design and implement accelerated pathways.

[www.wdr.doleta.gov/research/FullText\\_Documents/ETAOP\\_2015-03.pdf](http://www.wdr.doleta.gov/research/FullText_Documents/ETAOP_2015-03.pdf)

***Supporting Second Chances: Education and Employment Strategies for People Returning from Correctional Facilities***, Jobs for the Future, July 2015

This brief features a case study in which state reentry specialists focus support on the housing, food, and employment needs of recently released inmates. It cites research that suggests full-time employment is a primary indicator of successful reentry for some 700,000 people transitioning out of state and federal correctional facilities each year. It also promotes developing additional education and career pathways for ex-offenders as well as policies that support efficient and effective transitions.

[www.jff.org/sites/default/files/publications/materials/Supporting-Second-Chances-073015.pdf](http://www.jff.org/sites/default/files/publications/materials/Supporting-Second-Chances-073015.pdf)

***Federal Low-Income Programs: Multiple Programs Target Diverse Populations and Needs***, Government Accountability Office, July 2015

To examine research on how selected federal low-income programs may affect incentives to work, this report focuses on 82 federal programs targeted to individuals with low incomes, their families, and the communities designed to help them meet basic needs or provide other assistance. It identifies the



number and selected household characteristics of people in poverty as well as the number, poverty status, and household characteristics of selected programs' recipients. In fiscal 2013, the total expenditures of 78 of these programs were approximately \$742 billion, mostly concentrated toward Medicaid (39 percent), the Supplemental Nutrition Assistance Program, the refundable portion of the Earned Income Tax Credit, and Supplemental Social Security Income. Findings suggest that assistance from these low-income programs can encourage participation in the labor force, but have mixed effects on the number of hours that they work.

[www.gao.gov/assets/680/671779.pdf](http://www.gao.gov/assets/680/671779.pdf)

***Fragmentation in Workforce Development and Efforts to Coordinate Regional Workforce Development Systems***, Federal Reserve Bank of Atlanta, April 2015

This report highlights one case study and presents best practices from four other cities: Boston, Chicago, Cincinnati, and Detroit to demonstrate the importance of human capital in regional economic competitiveness. Specifically, it examines challenging trends for providers and workforce development systems that include fragmentation, instability of funding, and structural changes. Fragmentation, particularly among workforce training providers for middle-skills jobs that require credentials at the sub-baccalaureate level, is suggested to limit information available to job seekers, create duplications of services among providers, and discourage outcome measurement and program evaluation.

Recommendations for improving regional collaboration are supported by lessons learned from successful regional development models in other cities.

[www.frbatlanta.org/-/media/Documents/commdev/publications/discussionpapers/dp1502.pdf?la=en](http://www.frbatlanta.org/-/media/Documents/commdev/publications/discussionpapers/dp1502.pdf?la=en)

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**TEXAS WORKFORCE INVESTMENT COUNCIL**

**Fiscal Year 2016 Expenditure Report**

As of November 2, 2015

<b>Description</b>	<b>Budgeted Amount</b>	<b>Expended</b>	<b>Remaining Budget Balance</b>	<b>Percent Expended</b>
Salaries	\$ 787,716.67	\$ 109,872.42	\$ 677,844.25	14%
Professional Fees & Services	6,900.00	\$0.00	6,900.00	0%
Supplies	2,500.00	171.77	2,328.23	7%
Rent - Machine & Other	7,767.36	7,767.36	\$0.00	100%
Rental of Space	9,600.00	\$1,600.00	8,000.00	17%
Travel - Out of State	7,600.00	\$0.00	7,600.00	0%
Travel - In State	34,000.00	2,655.34	31,344.66	8%
Operating Costs	201,703.96	3,198.16	198,505.80	2%
<b>Total</b>	<b>\$ 1,057,787.99</b>	<b>\$ 125,265.05</b>	<b>\$ 932,522.94</b>	<b>12%</b>

Note: Budget reflects reconciliation through the TWC as of September 2015 (most recent report provided by agency).

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