June 2024

REGIONAL SOLUTIONS REPORT

Panhandle Pathways: Region 16 Education Service Center







TIP STRATEGIES

Panhandle Pathways LEADERSHIP TEAM

Part of the ***Texas Regional Pathways Network***

ACKNOWLEDGMENTS

TIP Strategies and Region 16 ESC would like to thank the Panhandle Pathways Leadership Team who guided this work and who have offered invaluable input and resources.

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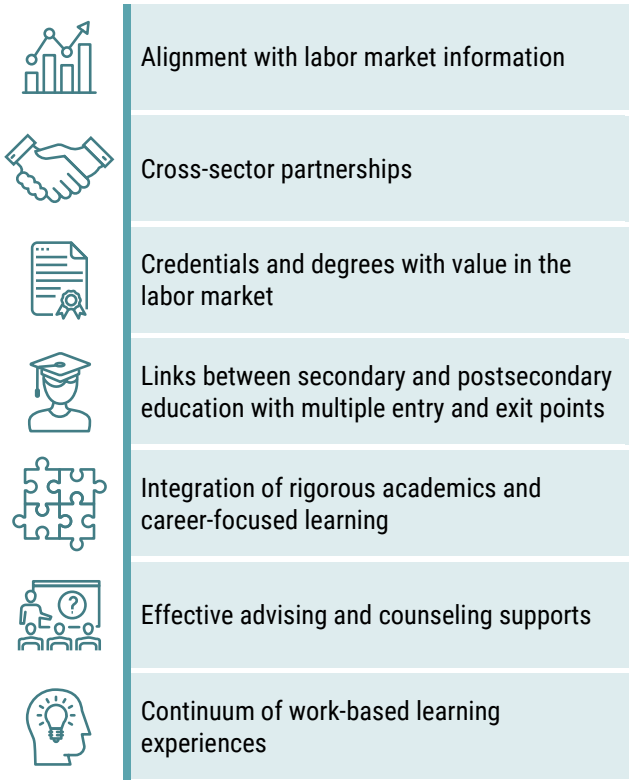
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OVERVIEW

Representing the Texas Panhandle within the statewide Texas Regional Pathways Network (TRPN), the Region 16 Education Service Center (ESC) was awarded the Tri-Agency Grant for Regional Conveners in October 2023. The goal of the TRPN grant is to build high-quality regional career and education pathways into high-wage, in-demand industries by ensuring all Texans have the skills and credentials needed for economic advancement (see Figure 1).

As the designated Tri-Agency Regional Convener for Workforce Development Area 1, Region 16 ESC is overseeing the development, implementation, and monitoring of the regional strategy for high-quality career and education pathways into targeted industries across 26 counties. Region 16 ESC has led the formation of the Panhandle Pathways Leadership Team (PPLT), dedicated to partnering with area businesses, industry, K–12 education, and higher education to develop pathways that lead to high-wage employment and better opportunities for Panhandle residents. With guiding statements to steer this effort toward success (see Figure 2), the PPLT is working to ensure that pathways into targeted industries offer a clear value proposition for all partners involved with shared goals and aligned metrics for success. Ultimately, the goal of this work is to create pathways that keep local talent in the Texas Panhandle.

FIGURE 1. COMPONENTS OF A HIGH-QUALITY PATHWAY



Source(s): Texas Education Agency (TEA), Texas Regional Pathways Network.

FIGURE 2. PANHANDLE PATHWAYS GUIDING STATEMENTS

VISION

Local, emerging talent **see the value in seeking career opportunities in the Panhandle**, increasing regional economic growth and community resiliency.

MISSION

To develop, expand, and promote **high quality career pathways** that are collectively supported by multi-sector partnerships.

Source(s): Panhandle Pathways Leadership Team (PPLT); TIP Strategies, Inc.

PROJECT OVERVIEW

As a principal member of the PPLT, Region 16 ESC contracted with TIP Strategies, Inc., (TIP) to conduct a workforce and labor market analysis in support of its TRPN planning. During the initial phase of the project, the PPLT decided to focus its efforts on improving career pathways in three areas: **healthcare**, **skilled trades**, and **information technology (IT)**. Recognizing the challenge of scaling quality and accessible career pathways across the Panhandle, TIP created a framework for collaboration and data sharing among stakeholders. This Regional Framework (beginning on page 26), is structured under three goals and encompasses recommendations specific to the PPLT's target career pathways.

TIP worked with the Region 16 ESC and the PPLT throughout the engagement to assess the regional education and workforce development landscape. An extensive quantitative analysis and robust stakeholder interviews were fundamental components of TIP's three-phase planning process—discovery, opportunity, and implementation.

The analysis compiled baseline population, migration, industry, occupation, program completion, and job quality data for the region. Additionally, TIP mapped education and workforce assets and conducted a county-by-county analysis of socioeconomic, job posting, and commuting data. The results were presented via an interactive data visualization tool, the *Region 16 Education Service Center Workforce & Labor Market Analysis*, providing the PPLT a foundational understanding of the Panhandle's assets for their education and workforce planning efforts. Findings from the quantitative analysis informed the regional framework recommendations, notably the PPLT's focus on target career pathways (healthcare, skilled trades, and IT).

TIP also engaged Region 16 ESC education and workforce stakeholders in interviews. Participants included staff from Region 16 ESC and Amarillo Area Foundation, as well as leaders from higher education, economic development, workforce development, K–12 education, and community nonprofits. Combined with the quantitative data analysis, the results of stakeholder engagement drove the regional framework recommendations, especially regarding collaboration and data sharing. The PPLT will use TIP's regional framework to support its ongoing strategic planning efforts and role as a Tri-Agency Regional Convener for its workforce development service area.

FIGURE 3. KEY TAKEAWAYS FROM STAKEHOLDER ENGAGEMENT

CHALLENGES

- ✓ Resourcing for rural areas is an obstacle to improving pathways across the 26 counties.
- ✓ Teachers are in high demand.
- ✓ Building career awareness through effective advising is a challenge.

OPPORTUNITIES

- ✓ Employer engagement can better align training programs with industry needs.
- ✓ Innovative educational solutions are underway across the region.
- ✓ A regional, engagement-driven vision and mission can enable community collaborations.

Source(s): TIP Strategies, Inc.

REGION 16 ESC OVERVIEW

Each regional convener in the TRPN is charged with leading planning and implementation efforts specific to their local economies and in-demand career pathways. As such, the *Regional Solutions Report* for the PPLT is tailored to provide a rural workforce development model informed by the Panhandle's economic, educational, and situational context.

Comprised of 26 counties spanning 26,000 miles, the Texas Panhandle and its workforce development service area covers a geography larger than 10 US states. Region 16 ESC serves over 80,000 school-age students across 226 campuses in 64 local education agencies. The geographic area is vast, and a culture of independence presents an opportunity to build upon emergent regional relationships. Additionally, educational resourcing can be scarce in areas of the Panhandle. Most districts in Region 16 ESC have less than 500 students (see Figure 4, page 3); 11 districts do not have a counselor.

Region 16 ESC provides direct services for those districts without counselors, but there are more opportunities to support in-demand career pathways through partnerships and efforts driven by the collective PPLT. Increased employer engagement, innovative solutions to rural career and technical education, and clear roles for regional collaboration represent positive themes in the Panhandle, in contrast to its challenges (see Figure 3).

FIGURE 4. REGION 16 ESC DISTRICT STATISTICS

LARGEST DISTRICTS (# OF STUDENTS)		
1	Amarillo ISD	31,249
2	Canyon ISD	10,282
3	Dumas ISD	4,159

DISTRIBUTION OF REMAINING DISTRICTS	
# of Students	# of Districts
2,000-3,999	4
1,000-1,999	5
800-999	5
700-799	0
600-699	7
500-599	0
400-499	6
300-399	4
200-299	8
100-199	18
Fewer than 100	1*

LARGEST DISTRICTS (# OF STAFF)		
1	Amarillo ISD	4,205
2	Canyon ISD	1,232
3	Dumas ISD	676

DISTRIBUTION OF REMAINING DISTRICTS	
# of Staff	# of Districts
300-599	4
200-299	4
100-199	14
50-99	11
30-49	18
20-29	6
Fewer than 20	1*

*This single district is K–6 only; it served 38 students and employed 12 staff at the time of analysis.
Source(s): Region 16 Education Service Center; TIP Strategies, Inc.
Note(s): Top three districts are highlighted and are not included in the count of remaining districts. ISD = Independent school district.

ANALYSIS

The following analysis lays the groundwork for the *Regional Solutions Report* by summarizing findings from stakeholder interviews, examining national labor market trends, and compiling essential regional data insights. Findings from this analysis shaped the Regional Framework recommendations.

STAKEHOLDER ENGAGEMENT

To gain a holistic understanding of Region 16 ESC's challenges and opportunities, TIP Strategies conducted one-on-one interviews with community leaders, including members of the PPLT. TIP also worked with the PPLT to identify additional community leaders to participate in interviews. The most prominent and consistent themes heard during the stakeholder engagement process are summarized below.

STAKEHOLDER INPUT

During the engagement process, TIP Strategies conducted **18 one-on-one interviews** with members of organizations including:

- Region 16 ESC
- Workforce Solutions Panhandle
- West Texas A&M University
- Clarendon College
- Amarillo College
- Amarillo Area Foundation
- Amarillo ISD
- Wheeler Economic Development Corporation
- High Ground of Texas
- Opportunity School
- United Way
- Window on a Wider World

Resourcing for rural areas is an obstacle to improving pathways across the 26 counties.

Every stakeholder identified the sheer geographic size of Region 16 ESC as a challenge. The region's population is concentrated around Amarillo with Potter and Randall Counties accounting for 60 percent of the population and over 78 percent of job postings over the last two years. Stakeholders familiar with rural challenges acknowledged that opportunities available in the Amarillo area outnumber those in rural areas. Meanwhile, rural areas often face population loss, resulting in school consolidation which further reduces the education and workforce capacity of areas already experiencing resourcing challenges. Rural communities may be disincentivized to invest in certain training (such as computer programming) because of limited job opportunities in those occupations locally. Additional challenges relate to a lack of infrastructure, particularly transportation. Effective education and workforce solutions in the Panhandle must consider how to mitigate these interrelated barriers to building a strong talent pipeline.

Teachers are in high demand.

Industries across the nation are experiencing talent shortages, including the education and workforce system itself. Stakeholders collectively identified the importance of teachers and faculty at K–12 schools and higher education institutions to improve training capacity. Teachers in both K–12 and postsecondary career and technical education (CTE) programs deliver instruction and recruit students to their programs. Yet, quality instructors are often recruited out of either their training roles or communities themselves into the private sector for better-paying opportunities.

Building career awareness through effective advising is a challenge.

Eleven school districts in Region 16 ESC do not have a counselor. While Region 16 ESC provides direct services for those districts without counselors, there remains an opportunity to strengthen effective advising for education

and career pathways. The Panhandle Community Partnership offers an in-depth website that allows anyone to explore careers in accounting, aircraft mechanics, carpentry, education, the skilled trades, food services, healthcare, manufacturing, and computer systems. Meanwhile, Workforce Solutions Panhandle's Education Outreach Specialist is going into schools to share career awareness resources with students directly. Yet, the traditional emphasis on four-year degree attainment can overwhelm students from exploring occupations whose entry-level education requirements are satisfied with other training pathways. Stakeholders believe that workforce partners should align messaging to share information about education and workforce opportunities in the Panhandle. Advising efforts should support pathways that lead to employment opportunities in a variety of sub-regional economies and that emphasize employer-recognized certifications or degrees.

Employer engagement can better align training programs with industry needs.

Because employers are the end consumers of a talent pipeline, engaging them earlier in the training process is critical. Enhancing the value proposition of all forms of job training through industry collaborations ensures that students graduate with the right skills and knowledge to succeed in the workplace. Stakeholders suggested that employers can do more to validate the relevance of training curricula and offer work-based learning opportunities. While champion employers exist across the region, employer engagements are typically handled on an ad hoc basis, and there remains an opportunity to engage employers in sector consortiums. Overall, engaging the private sector was identified as a pivotal component to strengthening talent pipelines, especially for educational opportunities that incorporate work-based learning into curricula.

Innovative educational solutions are underway across the region.

Several successful initiatives are providing effective, partnership-based solutions to strengthening education and workforce pathways. AmTech Career Academy, a specialized career and technical education campus in Amarillo Independent School District (ISD), is one example that allows students to practice their skills using technology and machinery that can be found in the workplace. Several stakeholders identified Amarillo College's earn-and-learn Level 1 certification program to upskill ASCO Equipment employees as another example of a scalable model to enhance training accessibility. In more rural areas, communities are overcoming challenges through sub-regional partnerships. The Gateway to Health Careers program brings dual-credit health science CTE programs to Panhandle districts through distance learning. This partnership among Frank Phillips, Amarillo College, Clarendon College, and participating districts brings training for high-demand health occupations into K–12 classrooms. Likewise, the Rural Nursing Education Consortium (RNEC) enables rural jobseekers to attain licensed vocational nurse and registered nurse certifications through a regional collaboration between hospitals and community colleges. Several stakeholders identified the Rural Schools Innovation Zone model as an avenue to explore for enabling district partnerships centered on training success. This model is successful because it delivers career pathways by pooling resources across districts.

A regional, engagement-driven vision and mission can enable community collaborations.

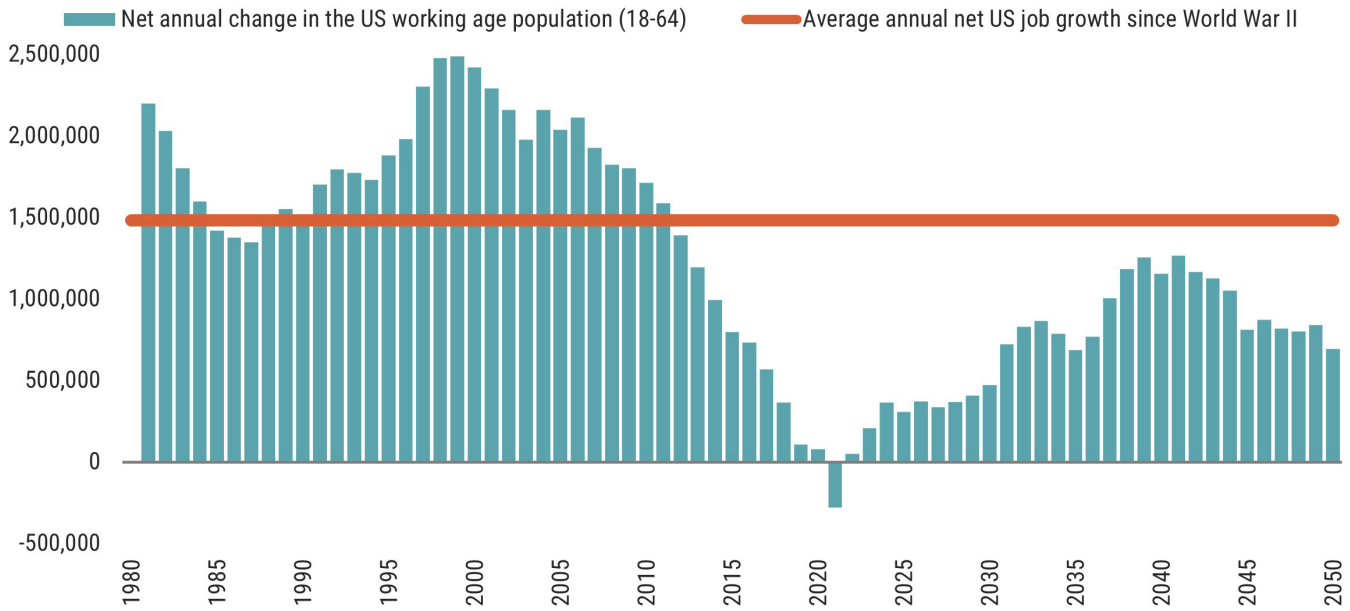
Stakeholders expressed uncertainty about the Panhandle's ability to translate a genuine vision for prosperity into an accountable program of work that survives staffing changes. There is a sense that the elements of success are present, but that reliance upon individual community leaders to deliver results makes regional initiatives vulnerable to turnover. Communication, relationship building, and trust are essential components for success and must be continuously renewed—especially when Panhandle leaders transition roles. Implementing a collaborative and sustainable vision requires a clear, unifying, and data-driven message. Crafting a message that is appealing to all sub-regions, addresses districts' capacity concerns, and enables regional workforce success will be a critical tool to unify communities and enable innovative partnership solutions.

NATIONAL LABOR MARKET TRENDS

The 26 counties that make up Region 16 ESC are not alone in facing workforce challenges and gaps. Similar issues to those identified during the planning process are seen across the US. Some of the most prominent national labor market trends that will affect Region 16 ESC's talent pipeline potential in coming years are highlighted in this section.

National demographic data suggest that the competition for workers will not end anytime soon. Comparing the net annual change in the US working age population to long-term average annual net job growth shows that labor shortages will extend over the next generation (see Figure 5). As of January 2023, nearly one quarter (24 percent) of the US employment base will be 55 years of age or older, meaning that 37 million currently employed Americans are, or will be, eligible to retire in the next 10 years.[1] At the same time, although about 4.3 million Americans will turn 65 annually over the next few years, only 4.1 to 4.2 million will turn 18.[2] The US labor market is not replenishing through natural change. The national fertility rate slipped to its lowest point on record in 2022, with 56.0 births per 1,000 women ages 15 to 44. For comparison, the fertility rate for this age group peaked in 1957 at 122.9.[3]

FIGURE 5. SUPPLY AND DEMAND OF US WORKERS

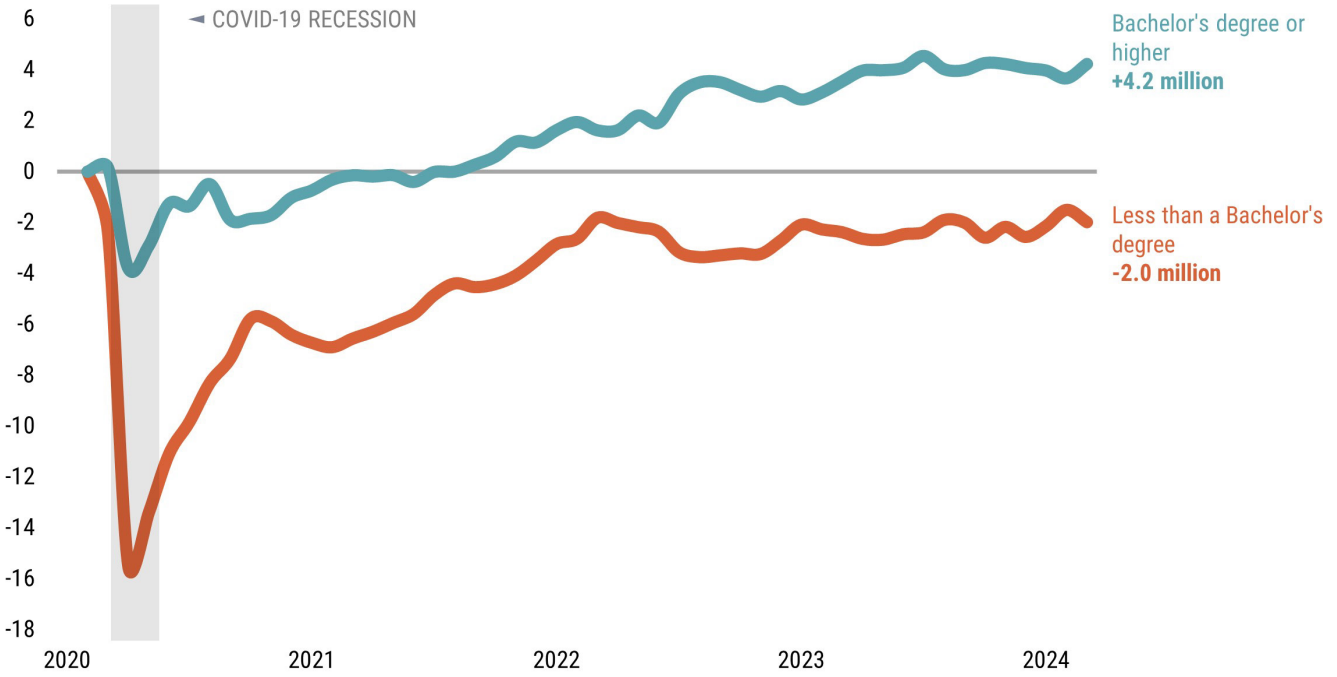


Source(s): US Census Bureau, International Database; US Bureau of Economic Analysis, Current Employment Statistics; TIP Strategies, Inc.
Note(s): Population estimates and projections are for the resident population. The US population components shown in the International Database may not match the official population components for the United States, in part, due to differences in how they are displayed (calendar year versus midyear-to-midyear estimates).

[1] US Bureau of Labor Statistics, Current Population Survey; TIP Strategies, Inc.
[2] US Census Bureau, International Database; Pew Research Center; TIP Strategies, Inc.
[3] US Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics, Natality Public Use Files (various annual reports), Vital Statistics in the United States, 1940-1960, and Vital Statistics in the United States, 1900-1940; TIP Strategies, Inc. The fertility rate is calculated as the ratio of total live births of US residents in a calendar year to the female population age 15-44. The ratio is multiplied by 1,000 and then expressed as births per 1,000 women age 15-44.

Some workers are still recovering from the economic impacts of the COVID-19 pandemic and the associated recession. At the onset of the pandemic in early 2020, the US labor market experienced significant job losses across nearly all industries and occupations. Yet, workers with more education were able to recover more quickly. By the fourth quarter of 2021, workers with a bachelor's degree or higher had already gained back virtually all lost jobs. Meanwhile, those with less than a bachelor's degree have yet to recover jobs lost (see Figure 6).

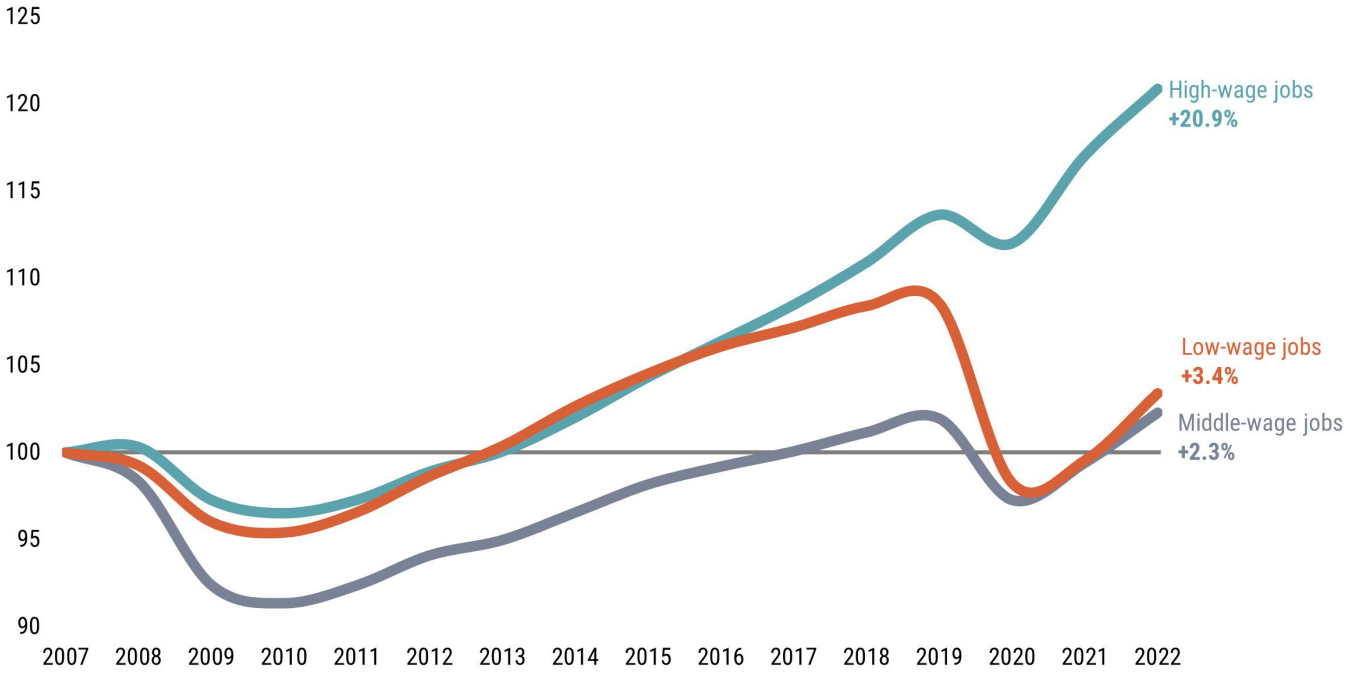
FIGURE 6. CUMULATIVE CHANGE IN EMPLOYMENT
Millions of jobs from February 2020



Source(s): US Bureau of Labor Statistics, Household Survey (Current Population Survey); National Bureau of Economic Research (NBER); TIP Strategies, Inc.
Note(s): Employment is seasonally adjusted and includes all workers age 25 and older. The recession began in February 2020 and ended (officially) in April 2020.

While there are diverse career paths to quality jobs that do not always require a four-year degree, the benefits of pursuing higher education within Region 16 ESC and beyond cannot be ignored. As highlighted in Figure 6, workers with higher educational attainment rates tend to sustain fewer job losses and recover jobs faster in the aftermath of an economic disruption. They also typically hold higher-paying jobs. This combination places educated workers at an advantage in nearly every job market. In the current market, in which the demand for high-wage jobs is growing exponentially (see Figure 7), educated workers have an extreme advantage. Employers are facing shortages of skilled talent, even as the job market languishes for low-wage and middle-wage jobs. The US is witnessing a record mismatch of supply and demand, with nearly three job openings for every two unemployed Americans. The time is right for Region 16 ESC to develop strong career pathways that match the local talent pipeline with the needs of local employers.

FIGURE 7. JOB GROWTH BY WAGE TIER
2007 employment indexed to 100



Source(s): Lightcast 2021.2—Quarterly Census of Employment and Wages (QCEW) Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): Wage tiers are defined by tertiles of total US employment in 2007. US occupations at the 5-digit SOC level were sorted by median wage rates and divided into three equal groups (tertiles) based on 2007 employment levels. The resulting three tiers of employment by wage level were then tracked consistently across the subsequent years.

REGIONAL DATA

This section provides an overview of relevant characteristics of the Region 16 ESC labor force, including population, employment, and education and training.

DEMOGRAPHICS

Between 1990 and 2022, the Texas population increased over 71 percent, with more than 29 million people calling Texas home in 2022. Over the same period, the US population increased by 33 percent and Region 16 ESC grew by just 17 percent, a figure nearly one-half that of the US. With a population of over 434,000, the pace of growth among the 26 counties has been uneven. During the period analyzed, 7 counties experienced population growth, while 19 counties saw a decline (see Figure 8, page 9). Only two counties in Region 16 ESC (Randall County and Hartley County) surpassed the national percent change in population over the same period.

Notably, Potter County and Randall County represent nearly 60 percent of Region 16 ESC's population, or roughly three out of every five residents.

Looking at the factors driving population change (see Figure 9, page 10), Region 16 ESC averaged a net gain of more than 1,800 annually since 1991. In that time, the region has only lost population year-over-year eight times, however, seven of those have occurred in the last 10 years, largely due to domestic net migration. The average year-over-year population change since 2013 is a loss of 347 people each year. This recent trend is concerning and validates the PPLT's desire to support the Panhandle's homegrown talent staying or returning to the region.

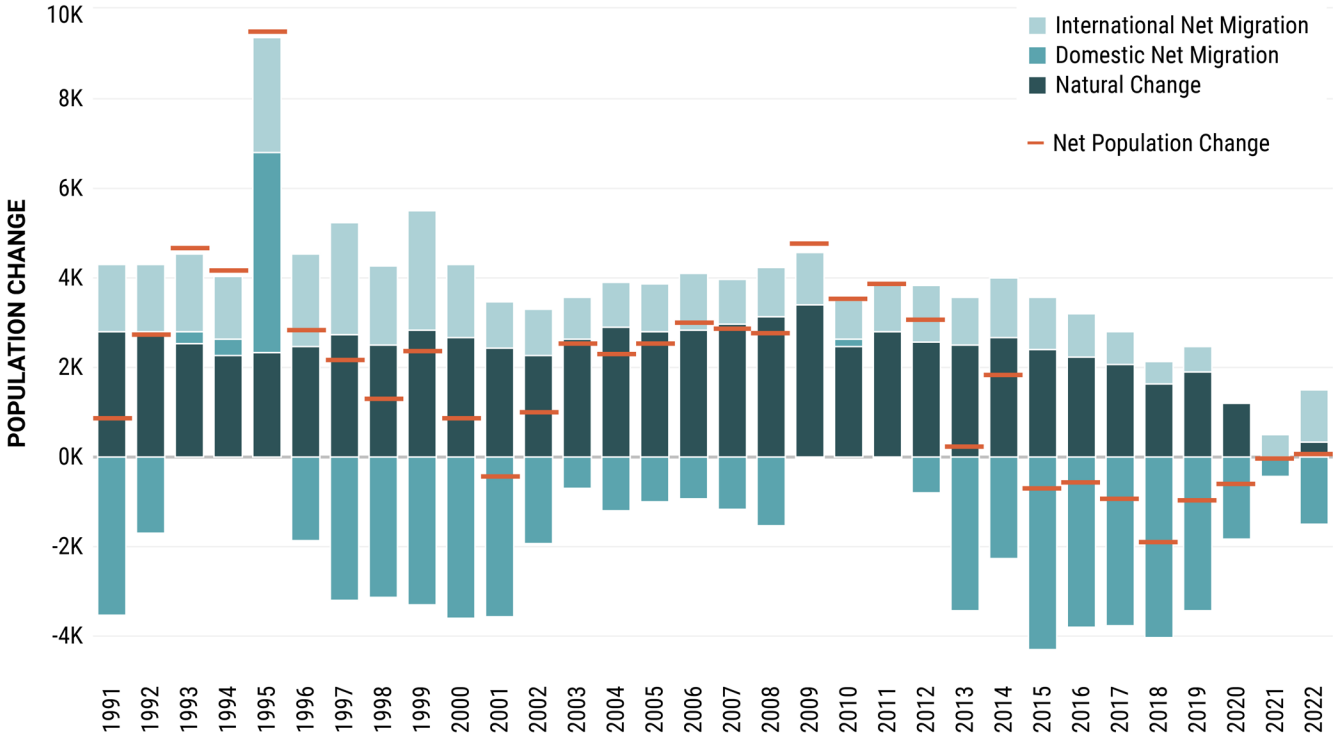
More than one-quarter (28.8 percent) of the population in Region 16 ESC is 19 years old or younger (see Figure 10, page 11). While this figure is in line with the state—28.2 percent of Texas's population falls into this cohort—Region 16 ESC has a considerably higher share of young people relative to the US (24.8 percent). At a time when the national fertility rate is declining, having young people comprise a relatively high share of the population is a competitive advantage that Region 16 ESC should lean into. But, with a higher share of young people comes an increased demand for quality career advising services and work-based learning opportunities, making it even more important to build strong career pathways.

FIGURE 8. POPULATION CHANGE FROM 1990 TO 2022

GEOGRAPHY	1990 POPULATION	2022 POPULATION	PERCENT CHANGE
Texas	**17,056,756**	**29,243,342**	**71.4%**
Randall County, TX	89,736	141,489	57.7%
Hartley County, TX	3,629	5,369	47.9%
United States	**249,670,111**	**331,097,593**	**32.6%**
Dallam County, TX	5,446	7,165	31.6%
Potter County, TX	97,908	117,905	20.4%
Moore County, TX	17,846	21,284	19.3%
Region 16 ESC	**371,340**	**434,569**	**17.0%**
Childress County, TX	5,958	6,781	13.8%
Ochiltree County, TX	9,113	9,924	8.9%
Parmer County, TX	9,871	9,809	-0.6%
Lipscomb County, TX	3,122	3,038	-2.7%
Deaf Smith County, TX	19,164	18,585	-3.0%
Oldham County, TX	2,273	2,171	-4.5%
Armstrong County, TX	2,018	1,912	-5.3%
Hemphill County, TX	3,697	3,371	-8.8%
Hansford County, TX	5,817	5,270	-9.4%
Donley County, TX	3,671	3,298	-10.2%
Gray County, TX	23,781	21,272	-10.6%
Carson County, TX	6,553	5,801	-11.5%
Swisher County, TX	8,079	6,989	-13.5%
Wheeler County, TX	5,801	4,980	-14.2%
Sherman County, TX	2,844	2,414	-15.1%
Castro County, TX	9,007	7,381	-18.1%
Collingsworth County, TX	3,553	2,865	-19.4%
Hutchinson County, TX	25,577	20,595	-19.5%
Roberts County, TX	1,039	764	-26.5%
Hall County, TX	3,891	2,847	-26.8%
Briscoe County, TX	1,946	1,290	-33.7%

Source(s): US Census Bureau, Population Estimates Program; 2022 American Community Survey (ACS) 5-year sample; TIP Strategies, Inc.

FIGURE 9. POPULATION DRIVERS OF CHANGE
Components of population changes in Region 16 ESC, 1991 to 2022



Source(s): US Census Bureau, Population Estimates Program; Moody's Analytics; TIP Strategies, Inc.
Note(s): Natural change is the difference between annual births and deaths. Total population change includes a residual (a change in population that cannot be attributed to any specific demographic component). Residual change is not shown in the chart but is included in the net population change shown by the red bars. 2010 and 2020 components are estimated based on a 12-month projection of the 2nd quarter (the period between the Census and the mid-year estimate) that is not seasonally adjusted.

Yet, school enrollment data reveals a concerning finding. Looking at the resident population under 25 years old, Region 16 ESC has the lowest share of residents in this age group enrolled in high school and the lowest share enrolled in college or graduate school. Region 16 ESC also has the highest share of people not enrolled in schooling of any kind. While this finding may mean that more residents under 25 years old are working, it also indicates an opportunity to reach young people who may be disconnected from school or work.

Overall, households in Region 16 ESC earn less than households across Texas and the US. The median household income in Region 16 ESC is $62,961, compared to $73,035 for Texas and $75,149 for the US. A similar pattern is seen in the poverty rate for the three geographies with Region 16 ESC, underperforming state figures (14.1 percent of Region 16 ESC's population fell below the federal poverty line in 2022 compared with 13.9 percent in Texas as a whole). Both the region and the state lagged the national figure (12.5 percent). Not only is there an opportunity to tap into the population under 25 not enrolled in school, but there is also an opportunity to upskill residents of Region 16 ESC to gain in-demand skills that lead to quality jobs.

FIGURE 10. SELECTED DEMOGRAPHIC CHARACTERISTICS

INDICATOR		REGION 16 ESC	TEXAS	US
Total population		**434,569**	**29,243,342**	**331,097,593**
Race & Ethnicity	White	53.6%	40.1%	58.9%
	Black or of African descent	4.8%	11.8%	12.1%
	Hispanic or Latino	36.2%	39.9%	18.7%
	Asian	2.3%	5.1%	5.7%
	Multiracial	2.4%	2.6%	3.5%
	All Other Races	0.7%	0.5%	1.1%
Age Distribution	Youth (0–19)	28.8%	28.2%	24.8%
	Young Adults (20–34)	20.4%	21.6%	20.4%
	Experienced Working Age (35–64)	36.0%	37.3%	38.2%
	Seniors (65+)	14.9%	12.9%	16.5%
Resident Population under 25		**154,017**	**10,332,394**	**104,496,601**
School Enrollment	Under school age	16.2%	14.7%	14.1%
	Enrolled in kindergarten or pre-school	7.4%	8.2%	8.3%
	Enrolled in school: grades 1-8	33.6%	32.1%	31.2%
	Enrolled in high school	16.2%	16.5%	16.5%
	Enrolled in college or graduate school	14.4%	18.3%	21.0%
	Not enrolled in school	12.2%	10.2%	8.9%

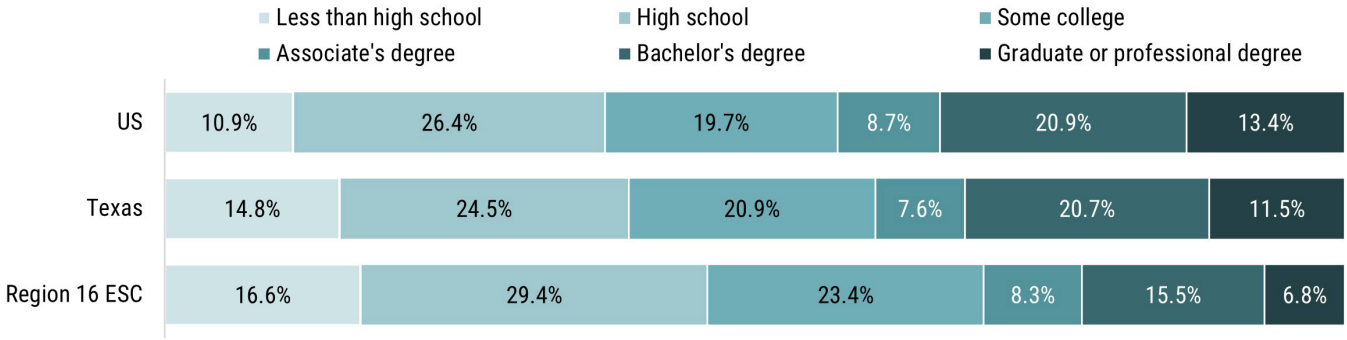
Source(s): 2022 American Community Survey (ACS) 5-year sample; TIP Strategies, Inc.
Note(s): The US Census Bureau categorizes Hispanic or Latino as an ethnic group rather than a race. The Hispanic or Latino group includes all races; the remaining racial groups excludes Hispanics or Latinos. All other races includes Native Americans, Alaska Natives, Pacific Islanders, and all other racial or ethnic identities not specified. These data are based on self-identification and reflect a social definition of race/ethnicity. The under-school age population is estimated by taking the difference between the population under 18 years old and total enrollment (excluding college).

EDUCATIONAL ATTAINMENT

Compared to Texas and the US, Region 16 ESC has lower educational attainment rates (see Figure 11). For example, only 30.6 percent of Region 16 ESC's population over the age of 25 have earned an associate's degree, a bachelor's degree, or a graduate or professional degree. In Texas, that share is over 9 percentage points higher at 39.8 percent. Across the US, the share of residents over 25 years old with some level of higher education completion is even higher at 43 percent. Notably, Region 16 ESC also has the highest share of residents who fall in the "some college" category, meaning they completed some college credits, but no degree was received. Again, the data points to an opportunity, this time to reconnect with residents who have completed some college credits to help them cross the finish line and receive a degree.

Despite having a higher share of residents with less than a high school education (see Figure 11), the region's high school graduation rates exceed the state's. Since 2016, Region 16 ESC has recorded more than 5,000 high school graduations each year. Most recently, Region 16 ESC's four-year high school graduation rate for the class of 2022 surpassed 93 percent compared to Texas' 89.7 percent.[4]

FIGURE 11. EDUCATIONAL ATTAINMENT
Resident population 25 years and over



Source(s): 2022 American Community Survey (ACS) 5-year sample; TIP Strategies, Inc.
Note(s): Educational attainment only measured for population 25 years and older. High school includes equivalency. Some college indicates no degree was received. Graduate degree includes professional degrees and doctoral programs.

EMPLOYMENT

In 2001, there were nearly 193,900 jobs in the 26 counties that make up Region 16 ESC. As of 2022, the region had gained more than 5,300 additional jobs representing a total of more than 221,400 jobs. When analyzed on a percentage basis, the region's 14.2 percent increase in jobs was on par with the percent change in jobs seen nationally during the same period. By contrast, Texas experienced an increase of 40 percent, growing from 10.7 million jobs in 2001 to over 15 million jobs in 2022.

Job growth in Region 16 ESC was fueled by large gains in agriculture, with the industry sector adding more than 5,800 jobs since 2001. Manufacturing, along with accommodation and food services, also positively impacted the region's jobs with more than 4,500 and 4,100 jobs, respectively, added in each industry. Today, manufacturing, retail trade, education, agriculture, and healthcare comprise the region's top 5 industry sectors (see Figure 12). Together, these industries account for over 50 percent of the region's employment opportunities.[5]

FIGURE 12. TOP 5 INDUSTRY SECTORS
Based on share of total Region 16 ESC jobs in 2022

INDUSTRY SECTOR	JOBS	SHARE
Manufacturing	26,844	12.1%
Retail Trade	22,748	10.3%
Education	21,649	9.8%
Agriculture	20,499	9.3%
Healthcare	20,431	9.2%

Source(s): US Bureau of Labor Statistics (BLS); Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

[4] Texas Education Agency, Four-Year Longitudinal Rates, 2012-2022; TIP Strategies, Inc.
[5] More details about Region 16 ESC's industries can be found in the Industry Sector Analysis section (beginning on page 15) along with an overview of the federal North American Industrial Classification System (NAICS). Region 16 ESC's occupations and the federal Standard Occupational Classification (SOC) system are discussed in the Occupation Analysis section (beginning on page 20).

COMMUTING PATTERNS

Understanding commuting patterns can provide insight into mismatches between where jobs are available and where workers live. It can also reveal transportation deficiencies and inform transportation investments. Figure 13 shows the results of an analysis of commuting patterns for each of the 26 Region 16 ESC counties. It includes net commuting flows for each county, along with data on three groups of workers: those who live and work in the county, those commuting into the county for work, and those commuting to jobs outside the county. In 2021 (the most recent year for which data are available), Region 16 ESC was nearly split evenly between counties where more residents commute outside of their home county for work and counties where more workers commute into the county for work.

FIGURE 13. COMMUTING PATTERNS, 2021

GEOGRAPHY	LIVE AND WORK	COMMUTE INTO	COMMUTE OUT OF	NET COMMUTERS
Randall County, TX	19,196	18,223	45,045	-26,822
Gray County, TX	4,076	2,535	4,020	-1,485
Hutchinson County, TX	4,562	2,901	3,715	-814
Castro County, TX	996	1,104	1,697	-593
Swisher County, TX	1,015	846	1,434	-588
Ochiltree County, TX	2,316	1,513	1,941	-428
Armstrong County, TX	118	191	590	-399
Hall County, TX	414	184	581	-397
Collingsworth County, TX	486	178	537	-359
Hansford County, TX	1,121	779	1,022	-243
Roberts County, TX	52	64	281	-217
Childress County, TX	967	816	984	-168
Briscoe County, TX	116	216	317	-101
Donley County, TX	433	562	594	-32
Hemphill County, TX	789	644	630	14
Sherman County, TX	349	626	537	89
Lipscomb County, TX	327	742	646	96
Oldham County, TX	229	503	366	137
Deaf Smith County, TX	4,390	3,888	3,450	438
Wheeler County, TX	912	1,269	807	462
Hartley County, TX	663	2,039	1,529	510
Dallam County, TX	1,660	2,390	1,709	681
Moore County, TX	6,099	5,002	3,840	1,162
Parmer County, TX	1,974	3,686	1,343	2,343
Carson County, TX	437	4,419	1,294	3,125
Potter County, TX	26,901	47,136	18,838	28,298

Source(s): Longitudinal Employer-Household Dynamics (LEHD), Origin-Destination Employment Statistics (LODES); TIP Strategies, Inc.
Note(s): Only includes residents and workers in Texas, Oklahoma, and New Mexico.

Randall and Potter Counties are unique outliers. Randall County has a tremendous amount of labor commuting out of the county, while Potter County has a similarly large amount of labor commuting in. In 2021, 47 percent of jobs within Randall County were held by people who lived within Randall County. Meanwhile, roughly 45,000 Randall

County residents commuted out of the county for work. Figure 14 shows the top five areas where they went for work. In Potter County, only 32 percent of jobs were held by people who lived in Potter County which means that 68 percent of jobs within Potter County limits were held by people who commuted into the county to work. Of that 68 percent, Figure 14 shows the top five areas where those workers commuted from. Interestingly, in both deep dives, the City of Lubbock is listed as a top area and is the only non-Region 16 ESC commuting destination or origin.

FIGURE 14. SELECTED COMMUTING PATTERN DETAILS FOR RANDALL AND POTTER COUNTIES, 2021

Top 5 Areas where Randall County **RESIDENTS** Worked

COMMUTED FROM RANDALL COUNTY		
TO	City of Amarillo	40,951
	City of Canyon	4,610
	Other location in Randall County	3,381
	City of Lubbock	2,460
	Other location in Carson County	2,318

Top 5 Areas where Potter County **WORKERS** Lived

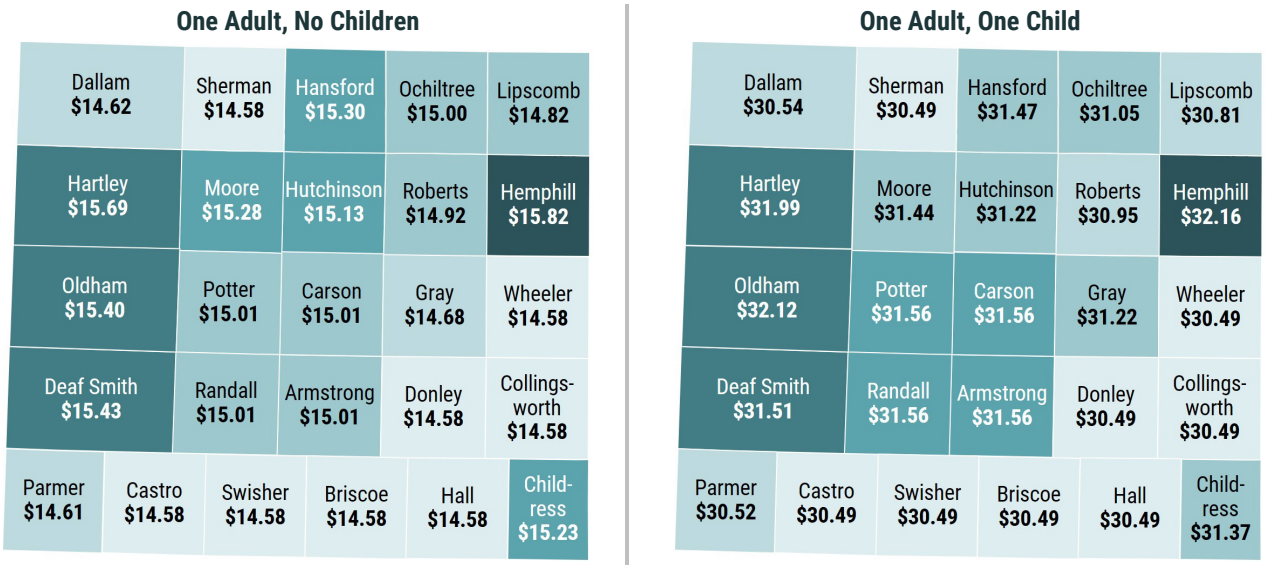
COMMUTED TO POTTER COUNTY		
	City of Amarillo	47,839
	Other location in Randall County	4,375
	Other location in Potter County	2,703
	City of Canyon	1,885
FROM	City of Lubbock	1,290

Source(s): Longitudinal Employer-Household Dynamics (LEHD), Origin-Destination Employment Statistics (LODES); TIP Strategies, Inc.
Note(s): Only includes residents and workers in Texas, Oklahoma, and New Mexico.

WAGES

The MIT Living Wage Calculator estimates the wages needed to cover basic family expenses like housing costs, food costs, childcare costs, and others for a defined geography. Living wages for a single adult within Region 16 ESC ranges between $14.58 per hour in Sherman, Wheeler, Donley, Collingsworth, Castro, Swisher, Briscoe, and Hall Counties and $15.82 per hour in Hemphill County (see Figure 15). In 2022, there were roughly 143,000 jobs in the Panhandle with median hourly earnings above the $15.82 per hour mark. However, living wages more than double when childcare has to be factored in. For a single adult with one child, living wages range between $30.49 per hour for the group of counties stated previously to $32.16 per hour in Hemphill County. Based on this analysis, only about 31,000 jobs in the region have median hourly earnings sufficient to support a single adult with a child.

FIGURE 15. LIVING HOURLY WAGE BY COUNTY FOR SELECTED HOUSEHOLD TYPES

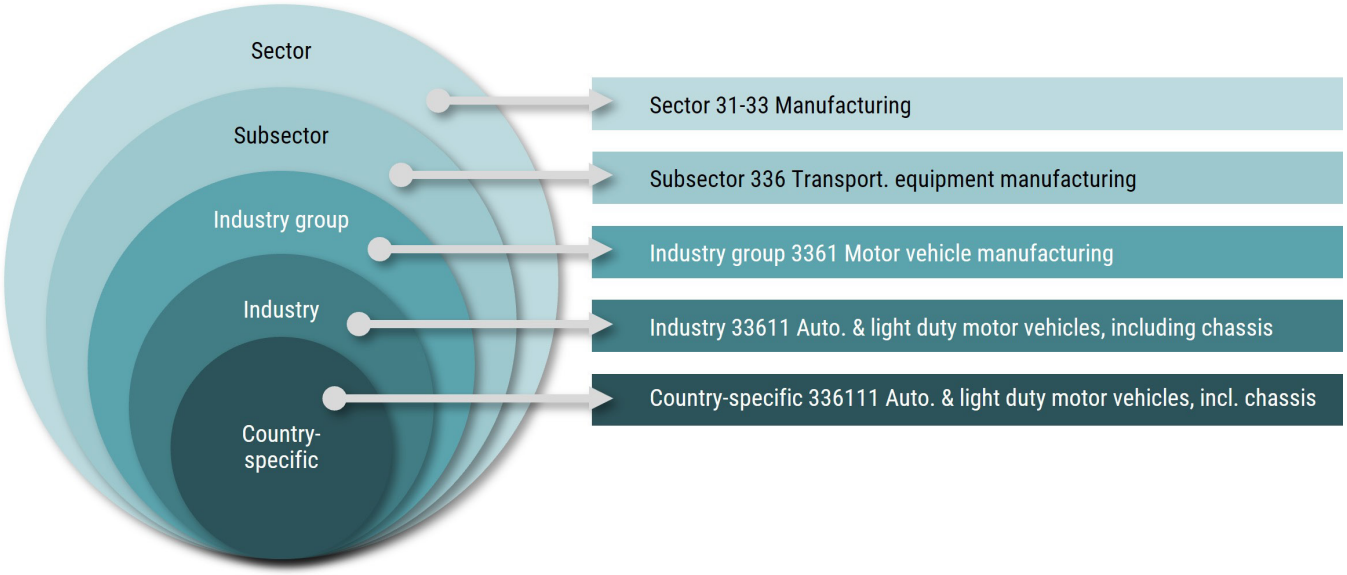


Source(s): Glasmeier, Amy K., Living Wage Calculator, 2024, Massachusetts Institute of Technology; TIP Strategies, Inc.
Note(s): Darker colors indicate higher wages.

INDUSTRY SECTOR ANALYSIS

Strengthening career pathways in Region 16 ESC can prepare young people for careers in middle skill occupations that pay a living wage. A key component of that task is a deep dive into labor market information to align career pathways to jobs in high-wage, in-demand industries. Pathways should prepare Region 16 ESC's residents for careers in industries that offer career ladders to move up within their chosen fields as they gain additional skills through postsecondary credentials and higher education. Other considerations in identifying promising career pathways include wages and strong employment growth projections. This section of the report explores possible industries for pathways development in Region 16 ESC that hold promising opportunities for residents in the 26-county region.[6]

FIGURE 16. NORTH AMERICAN INDUSTRIAL CLASSIFICATION SYSTEM (NAICS)



Source(s): US Bureau of Labor Statistics; TIP Strategies, Inc.

Data about employment can be collected by place of residence or by place of employment. For an industry sector analysis, it is best to use data captured at the workplace because it sheds light on the characteristics of the jobs that employers are adding. Using the North American Industrial Classification System (NAICS) to analyze sector data (see Figure 16), only three sectors in Region 16 ESC surpassed the US and Texas in percent change in jobs between 2001 and 2022:

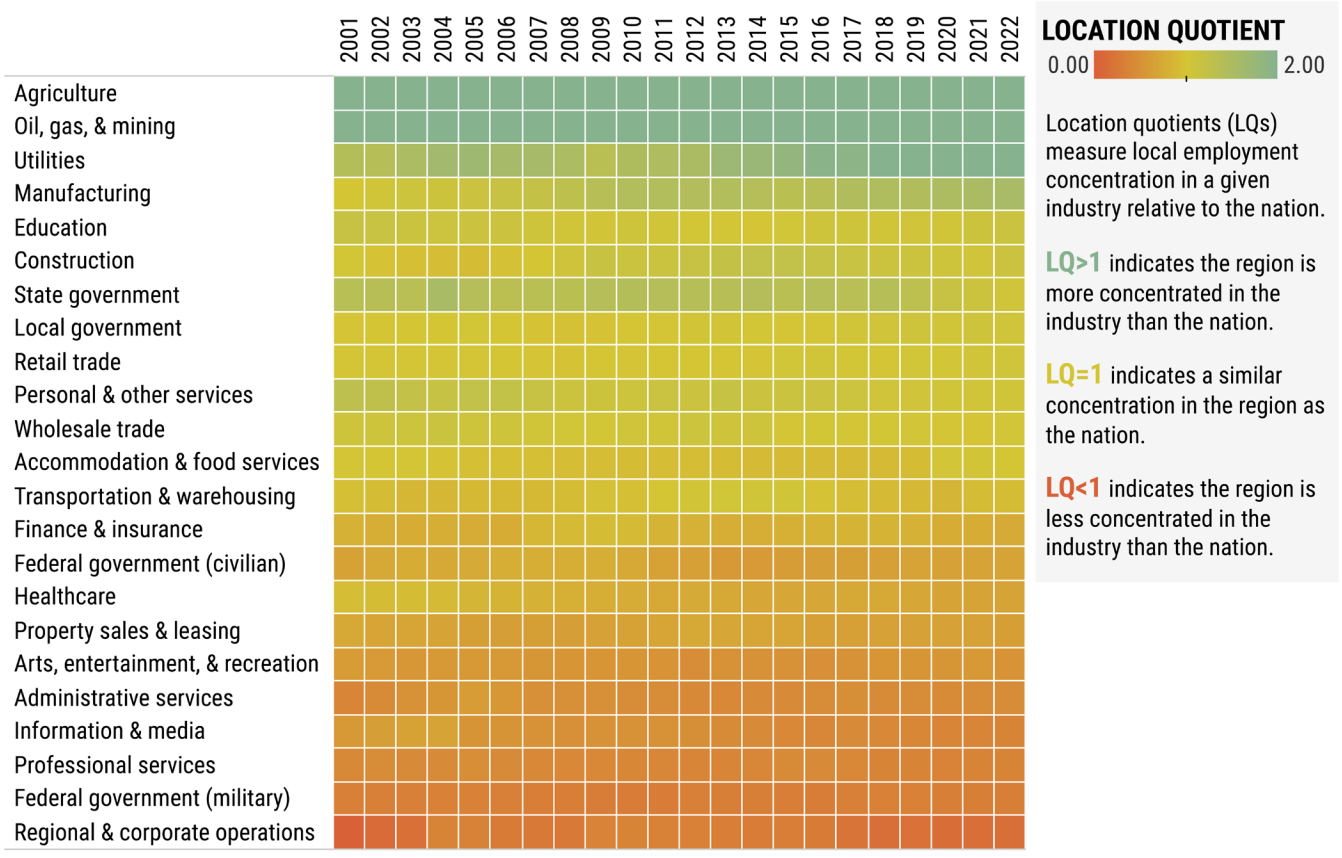
- Jobs in Agriculture (NAICS 11) increased 39.7 percent in Region 16 ESC, increasing from 14,675 jobs in 2001 to 20,499 jobs in 2022. Agriculture was the top industry for net jobs added (5,824) in Region 16 ESC between 2001 and 2022. The US lost 3.4 percent of Agriculture jobs over the same period. Texas lost 13.1 percent of Agriculture jobs between 2001 and 2021.
- Manufacturing (NAICS 31-33) jobs increased by 20.3 percent during the period analyzed, growing from 22,320 jobs in 2001 to 26,844 jobs in 2022. Manufacturing is the second industry in Region 16 ESC for most net jobs added (4,524) between 2001 and 2022. Meanwhile, Texas Manufacturing jobs decreased 12.6 percent and US Manufacturing jobs decreased 22.8 percent over the same period.

[6] Industry and occupation names used in this section and in the Occupation Analysis section (beginning on page 20) align with formal federal classification systems, with small variations to improve readability. To facilitate comparison, the occupation and industry names are capitalized, and the appropriate classification code is provided on first reference (i.e., NAICS codes for industries and SOC codes for occupations).

- Jobs in Utilities (NAICS 22) increased 83.1 percent in Region 16 ESC with 1,122 Utilities jobs in 2001 and 2,054 Utilities jobs in 2022. Utilities jobs in Texas also grew over the same period but only by 14.4 percent. In the US, Utilities jobs decreased by 6.5 percent between 2001 and 2022.

An analysis of location quotients (LQs) reveals industry sectors where a region has a high concentration of employment relative to the nation. As illustrated in Figure 17, the industry sectors with the largest LQs in 2022 in Region 16 ESC include: Agriculture (7.87 LQ); Oil, Gas, and Mining (NAICS 21, 5.38 LQ); Utilities (2.78 LQ); Manufacturing (1.56 LQ); and Education (NAICS 61, 1.13 LQ).

FIGURE 17. LOCATION QUOTIENTS FOR INDUSTRY SECTORS IN REGION 16 ESC, 2001-2022



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): Region 16 ESC includes Armstrong, Briscoe, Carson, Castro, Childress, Collingsworth, Dallam, Deaf Smith, Donley, Gray, Hall, Hansford, Hartley, Hemphill, Hutchinson, Lipscomb, Moore, Ochiltree, Oldham, Parmer, Potter, Randall, Roberts, Sherman, Swisher, Wheeler Counties.

Over the next five years, proprietary data provider, Lightcast, projects that jobs in Region 16 ESC will grow by 9 percent, increasing from over 221,000 jobs in 2022 to over 241,000 jobs in 2027. In 2022, Region 16 ESC's largest industries (shown in Figure 12, page 12) were Manufacturing, Retail Trade (NAICS 44-45), Education, Agriculture, and Healthcare(NAICS 62). Lightcast's employment projections anticipate that these will remain the region's largest industries in 2027 (see Figure 18, page 17). While some analysts look to industry wages to inform career pathway development, occupational wages provide a better measure. Average industry wages can be used as a general benchmark for comparing across industries, but median occupational wages provide a better understanding of hiring opportunities. Occupational wages are presented in the Occupation Analysis section, beginning on page 19.

FIGURE 18. INDUSTRY SECTORS IN REGION 16 ESC PROJECTIONS

INDUSTRY SECTOR	2022 JOBS	PROJECTED 2027 JOBS	5-YEAR # CHANGE	5-YEAR % CHANGE
Manufacturing	26,844	31,148	4,304	16%
Retail trade	22,748	24,473	1,725	8%
Educational services	21,649	23,278	1,629	8%
Agriculture, forestry, fishing and hunting	20,499	22,446	1,947	9%
Health care and social assistance	20,431	22,067	1,636	8%
Accommodation & food services	18,039	19,342	1,303	7%
Construction	14,314	15,591	1,277	9%
Personal & other services	11,471	11,805	334	3%
Transportation & warehousing	9,600	11,078	1,478	15%
Wholesale trade	8,307	9,251	944	11%
Local government	7,883	8,221	338	4%
Finance & insurance	6,904	7,080	176	3%
Administrative services	6,832	7,477	645	9%
Professional, scientific, and technical services	6,431	7,231	800	12%
Oil, gas, & mining	4,005	4,374	369	9%
State government	3,101	2,603	-498	-16%
Property sales & leasing	2,545	2,767	222	9%
Federal government (civilian)	2,192	2,334	142	6%
Utilities	2,054	2,525	471	23%
Arts, entertainment, & recreation	2,006	2,308	302	15%
Information & media	1,727	1,937	210	12%
Federal government (military)	929	949	20	2%
Regional & corporate operations	721	757	36	5%

Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

Looking at county-specific industry data (see Figure 19, page 18), Agriculture is the top industry employer in 11 of the 26 Region 16 ESC counties. A few counties are heavily dependent on their top industry employers for jobs: 65 percent of jobs in Carson County are in Manufacturing; 48 percent of jobs in Castro County are in Agriculture; 53 percent of jobs in Hartley County are in Agriculture; and 51 percent of jobs in Swisher County are in Agriculture. The Education sector's role in the region is also noteworthy; it is among the top three industry employers in 17 of the 26 counties.

FIGURE 19. TOP INDUSTRY EMPLOYERS IN INDIVIDUAL COUNTIES
Based on share of total 2022 jobs

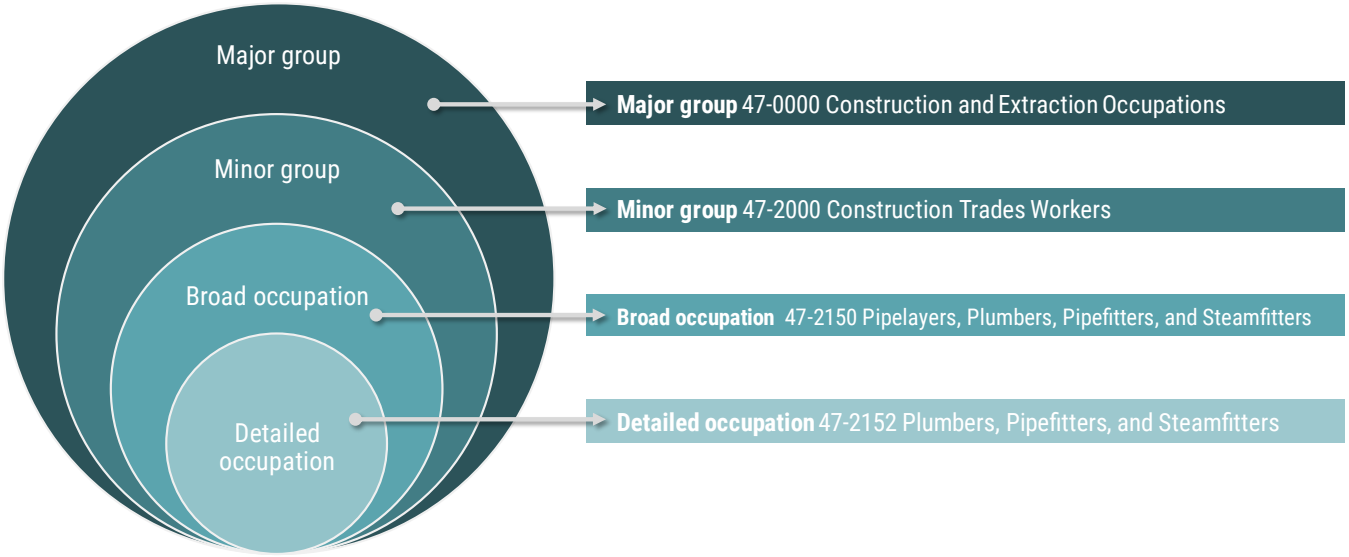
COUNTY	2022 JOBS	#1 INDUSTRY EMPLOYER			#2 INDUSTRY EMPLOYER			#3 INDUSTRY EMPLOYER		
		Industry	*Jobs*	*Share*	*Industry*	*Jobs*	*Share*	*Industry*	*Jobs*	*Share*
Armstrong	**643**	Education	145	23%	Construction	89	14%	Prof. Svcs.	66	10%
Briscoe	**471**	Agriculture	106	23%	Education	66	14%	Retail Trade	45	10%
Carson	**6,197**	Manufacturing	4,003	65%	Construction	491	8%	Agriculture	272	4%
Castro	**3,672**	Agriculture	1,754	48%	Education	456	12%	Transp./Whs.	201	5%
Childress	**3,048**	Education	512	17%	Retail Trade	404	13%	State Govt.	354	12%
Collingsworth	**981**	Healthcare	294	30%	Agriculture	120	12%	Retail Trade	93	9%
Dallam	**5,858**	Agriculture	2,272	39%	Manufacturing	796	14%	Whlse. Trade	387	7%
Deaf Smith	**10,178**	Agriculture	2,788	27%	Manufacturing	2,013	20%	Retail Trade	964	9%
Donley	**1,206**	Local Govt.	366	30%	Agriculture	150	12%	Retail Trade	120	10%
Gray	**8,414**	Manufacturing	1,190	14%	Retail Trade	1,038	12%	Education	862	10%
Hall	**997**	Agriculture	190	19%	Education	184	18%	Retail Trade	149	15%
Hansford	**2,986**	Agriculture	814	27%	Construction	430	14%	Education	333	11%
Hartley	**3,608**	Agriculture	1,911	53%	Construction	254	7%	Retail Trade	199	6%
Hemphill	**2,036**	Oil, Gas, Mining	321	16%	Healthcare	239	12%	Pers./Other Svcs.	192	9%
Hutchinson	**8,662**	Oil, Gas, Mining	1,169	13%	Construction	1,082	12%	Retail Trade	954	11%
Lipscomb	**1,498**	Manufacturing	338	23%	Education	273	18%	Agriculture	233	16%
Moore	**13,563**	Manufacturing	4,239	31%	Agriculture	2,349	17%	Education	1,211	9%
Ochiltree	**5,121**	Oil, Gas, Mining	995	19%	Agriculture	952	19%	Education	615	12%
Oldham	**1,118**	Education	252	23%	Agriculture	225	20%	Pers./Other Svcs.	156	14%
Parmer	**7,813**	Agriculture	2,656	34%	Manufacturing	2,169	28%	Construction	686	9%
Potter	**84,404**	Healthcare	12,727	15%	Manufacturing	8,697	10%	Education	8,645	10%
Randall	**42,496**	Retail Trade	6,993	16%	Accomm./Food	5,003	12%	Education	4,209	10%
Roberts	**377**	Agriculture	92	24%	Education	70	19%	Local Govt.	38	10%
Sherman	**1,587**	Agriculture	809	51%	Education	176	11%	Retail Trade	128	8%
Swisher	**2,433**	Agriculture	607	25%	Education	502	21%	Pers./Other Svcs.	160	7%
Wheeler	**2,061**	Education	531	26%	Retail Trade	291	14%	Accomm./Food	270	13%

Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

OCCUPATION ANALYSIS

The Standard Occupational Classification (SOC) system is used by federal agencies to count and classify workers into occupational categories for statistical purposes (see Figure 20). The following section provides a deep dive into the occupations that hold promising opportunities for residents in the 26-county region.

FIGURE 20. STANDARD OCCUPATIONAL CLASSIFICATION (SOC) SYSTEM



Source(s): US Bureau of Labor Statistics; TIP Strategies, Inc.

MAJOR GROUPS

Of the major occupational groups, only one within Region 16 ESC surpassed the US and Texas in percent change in jobs between 2001 and 2022. Jobs in Farming, Fishing, and Forestry Occupations (SOC 45-0000) rose by 43.5, increasing from more than 6,300 jobs in 2001 to more than 9,100 jobs in 2022. In comparison, the US and Texas experienced declines, losing 2.5 percent and 6.6 percent of jobs in this occupational group over the same period.

As mentioned previously, data from Lightcast project that Region 16 ESC will experience job growth over the next five years rising to over 241,000 jobs in 2027. Figure 21 presents Region 16 ESC's largest major occupational groups in 2022: Office and Administrative Support Occupations (SOC 43-0000); Management Occupations (SOC 11-0000); Transportation and Material Moving Occupations (SOC 53-0000); Sales and Related Occupations (SOC 41-0000); and Food Preparation and Serving Related Occupations (SOC35-0000).

FIGURE 21. TOP 5 OCCUPATIONAL GROUPS
Region 16 ESC by Jobs in 2022

OCCUPATIONAL GROUP	JOBS	SHARE
Office and Admin. Support	25,145	11.4%
Management	21,877	9.9%
Transportation and Material Moving	21,614	9.8%
Sales and Related Occupations	18,069	8.2%
Food Prep. and Serving Related Occupations	17,911	8.1%

Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

Projections show that Transportation and Material Moving Occupations will surpass Management Occupations by job count in 2027, but the top five occupational groups in Region 16 ESC will remain the same (see Figure 22).

FIGURE 22. PROJECTIONS BY OCCUPATIONAL GROUP, REGION 16 ESC

SOC MAJOR GROUP	2022 JOBS	PROJECTED 2027 JOBS	5-YR # CHANGE	5-YR % CHANGE
43-0000 Office and Administrative Support	25,145	26,169	1,024	4.1%
11-0000 Management	21,877	24,230	2,353	10.8%
53-0000 Transportation and Material Moving	21,614	24,483	2,869	13.3%
41-0000 Sales and Related Occupations	18,069	19,544	1,475	8.2%
35-0000 Food Preparation & Serving Related	17,911	19,270	1,359	7.6%
51-0000 Production	15,625	17,932	2,307	14.8%
25-0000 Educational Instruction and Library	13,699	14,714	1,015	7.4%
49-0000 Installation, Maintenance, and Repair	11,837	13,227	1,390	11.7%
29-0000 Healthcare Practitioners & Technical	11,032	12,085	1,053	9.5%
47-0000 Construction and Extraction	10,894	11,933	1,039	9.5%
45-0000 Farming, Fishing, and Forestry	9,140	9,931	791	8.7%
37-0000 Building & Grounds Cleaning, Maintenance	8,904	9,289	385	4.3%
13-0000 Business and Financial Operations	7,823	8,707	884	11.3%
31-0000 Healthcare Support	6,064	6,437	373	6.2%
39-0000 Personal Care and Service	4,713	4,911	198	4.2%
33-0000 Protective Service	4,402	4,412	10	0.2%
21-0000 Community and Social Service	3,088	3,301	213	6.9%
15-000 Computer and Mathematical	2,425	2,786	361	14.9%
27-0000 Arts, Design, Entertainment, Sports, and Media	2,229	2,509	280	12.6%
17-0000 Architecture and Engineering	2,063	2,351	288	14.0%
19-0000 Life, Physical, and Social Science	1,436	1,604	168	11.7%
23-0000 Legal	947	1,025	78	8.2%
55-0000 Military Only	489	499	10	2.0%

Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): Redder shading indicates lower values, while more teal shading indicates higher values.

DETAILED OCCUPATIONS

Digging into the specific roles within the SOC system helps shine light on occupations prime for developing strong career pathways. Of all jobs in Region 16 ESC in 2022, the largest share (40 percent) typically requires only a high school diploma or equivalent. The next largest share (28 percent) typically requires no formal education credential, and the third largest share (18 percent) typically require a bachelor's degree. Just 1 percent of jobs in the region typically require a master's degree or higher. The remaining roughly 13 percent of jobs fall elsewhere on the education pipeline. The top 25 occupations in Region 16 ESC by 2022 jobs exemplify this fact (see Figure 23).

○○○○○ No Formal Educational Credential
●○○○○ High School Diploma or Equivalent
●●○○○ Postsecondary Nondegree Award
●●●○○ Some College
●●●●○ Associate's Degree
●●●●● Bachelor's Degree
●●●●●● Graduate or Professional Degree

FIGURE 23. TOP 25 DETAILED OCCUPATIONS IN REGION 16 ESC BY 2022 JOBS
With a comparison of the occupation's median hourly earnings to the median hourly earnings for all occupations in the region

SOC	DESCRIPTION	2022 Jobs	Median Hourly Earnings	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
11-9013	Farmers, Ranchers, & Other Agricultural Managers	8,339	$16.50	●○○○○	5 years +	None
11-1021	General & Operations Managers	5,973	$35.83	●●●●●○	5 years +	None
35-3023	Fast Food & Counter Workers	5,233	$10.43	○○○○○	None	Short
41-2011	Cashiers	5,165	$11.08	○○○○○	None	Short
53-3032	Heavy & Tractor-Trailer Truck Drivers	5,025	$21.52	●●○○○	None	Short
45-2092	Farmworkers & Laborers, Crop, Nursery, & Greenhouse	4,863	$12.80	○○○○○	None	Short
37-2011	Janitors & Cleaners, Except Maids & Housekeeping Cleaners	4,709	$16.44	○○○○○	None	Short
41-2031	Retail Salespersons	4,608	$13.02	○○○○○	None	Short
53-7065	Stockers & Order Fillers	4,173	$14.86	●○○○○	None	Short
43-9061	Office Clerks, General	4,006	$14.50	●○○○○	None	Short
53-7062	Laborers & Freight, Stock, & Material Movers, Hand	3,691	$16.31	○○○○○	None	Short
29-1141	Registered Nurses	3,530	$36.80	●●●●○	None	None
35-3031	Waiters & Waitresses	3,038	$9.82	○○○○○	None	Short
43-6014	Secretaries & Admin. Assists., Except Legal, Medical, & Exec.	3,021	$16.32	●○○○○	None	Short
43-4051	Customer Service Representatives	2,816	$15.08	●○○○○	None	Short
49-9071	Maintenance & Repair Workers, General	2,770	$17.60	●○○○○	None	Moderate
25-2021	Elementary School Teachers, Except Special Education	2,698	$27.58	●●●●○	None	None
43-3031	Bookkeeping, Accounting, & Auditing Clerks	2,495	$18.92	●●●○○	None	Moderate
31-1128	Home Health & Personal Care Aides	2,406	$10.76	●○○○○	None	Short
47-2061	Construction Laborers	2,286	$16.28	○○○○○	None	Short
41-1011	First-Line Supervisors of Retail Sales Workers	2,260	$17.31	●○○○○	< 5 years	None
43-1011	First-Line Supervisors of Office & Admin. Support Workers	2,155	$24.40	●○○○○	< 5 years	None
25-9045	Teaching Assistants, Except Postsecondary	2,095	$12.91	●●●○○	None	None
51-3022	Meat, Poultry, & Fish Cutters & Trimmers	2,041	$17.24	○○○○○	None	Short
37-2012	Maids & Housekeeping Cleaners	1,895	$11.06	○○○○○	None	Short

Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): Redder shading indicates lower median hourly wages, while more teal shading indicates higher median hourly earnings.

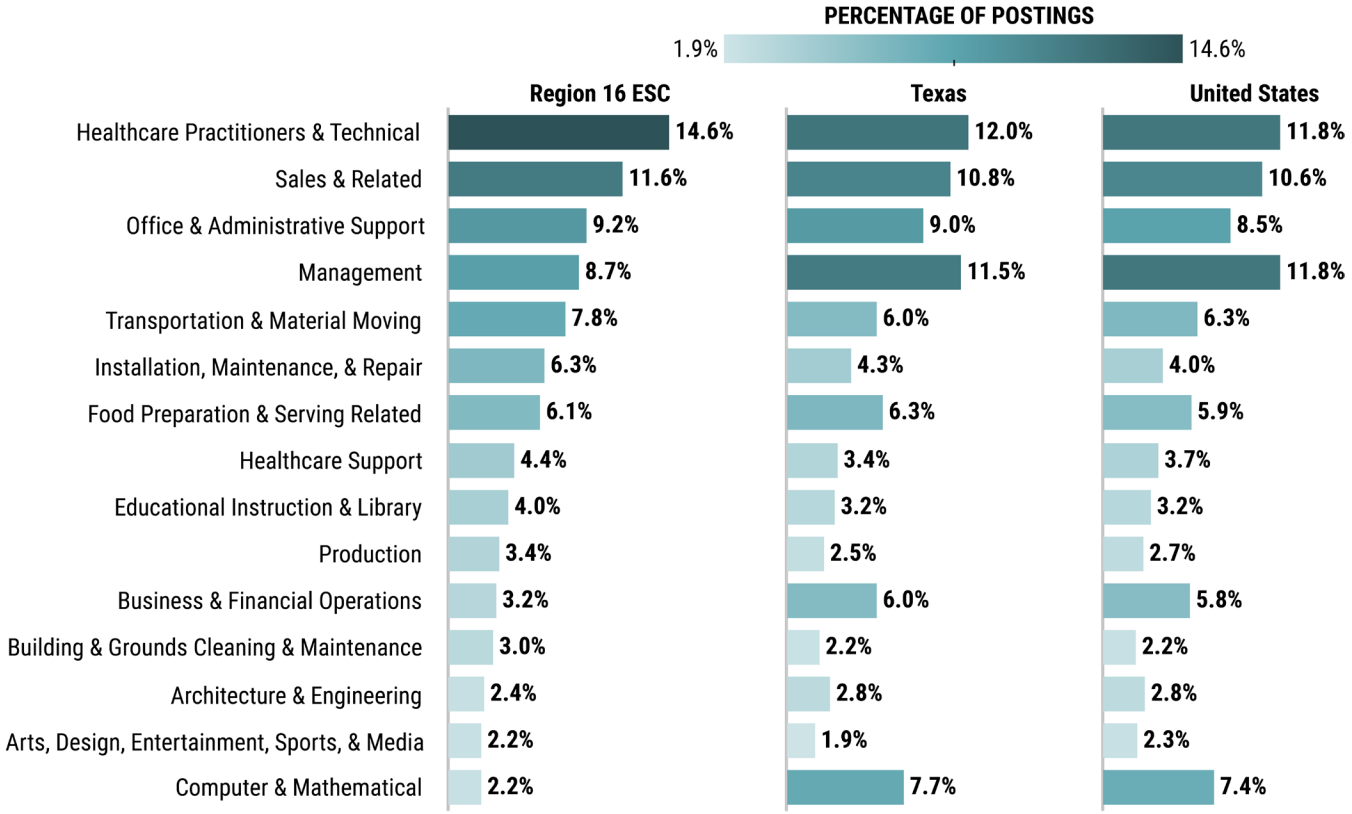
JOB POSTING ANALYSIS

Based on an analysis of two years of job postings, Healthcare Practitioners and Technical Occupations (SOC 29-0000) are the most in-demand occupations in Region 16 ESC (see Figure 24). As shown in Figure 25 (page 23), registered nurses were among the job titles sought by employers, with 589 job postings representing 0.7 percent of the total. Caregivers (569 job postings) and licensed vocational nurses (394 job postings) were also in demand, accounting for 0.6 percent and 0.4 percent, respectively, of total postings during the period.

Skilled trades occupations fall under a variety of SOC major occupational groups, with a good amount appearing within Installation, Maintenance, and Repair Occupations (SOC 49-0000). The share of job postings in that major occupation group within Region 16 ESC outweighs the share seen in Texas and across the US.

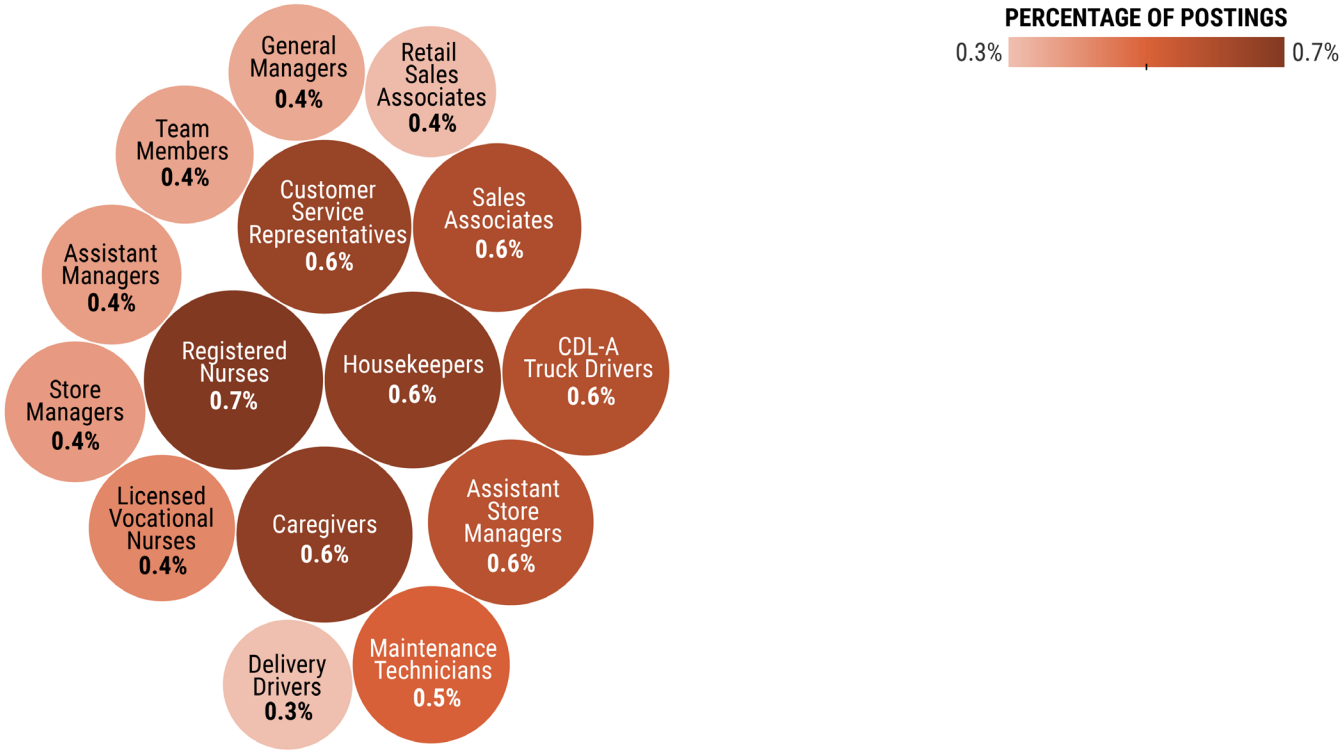
Notably, Computer and Mathematical Occupations (SOC 15-0000), which make up most of the IT field, had one of the lowest shares of job postings by major occupational group. That share is much higher in Texas, which suggests that developing career pathways in IT may result in Region 16 ESC students moving to other parts of the state for employment in the field.

FIGURE 24. JOB POSTING ANALYSIS—DEMAND BY MAJOR OCCUPATION GROUP



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): Bars show percentage share of unique job postings in each reach by major occupation groups. Job postings include non-staffing, unique, active job postings for full-time, part-time, and flexible positions, excluding internships, between December 2021-December 2023.

FIGURE 25. REAL-TIME DEMAND BY JOB TITLE
Region 16 ESC, Top Job Posting Titles



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): Circles show percentage share of unique job postings in Region 16 ESC by job titles. Larger, darker circles indicate higher shares. Job postings include non-staffing, unique, active job postings for full-time, part-time, and flexible positions, excluding internships, between December 2021-December 2023.

EDUCATION ANALYSIS

Figure 26 identifies the top CTE programs of study in Region 16 ESC. The abundance of medical CTE offerings in the region is a major advantage to developing strong career pathways in healthcare. Notably, some programs of study, particularly related to the skilled trades and IT, are either underrepresented or not offered in Region 16 ESC. These include HVAC and sheet metal; electrical; plumbing and pipefitting; aviation maintenance; diesel and heavy equipment; distribution and logistics; nursing science; and information technology support; and cybersecurity.

Region 16 ESC is home to four colleges and universities awarding over 4,900 degrees and certificates each year since 2018 (see Figure 27). The primary university serving the region is West Texas A&M University (WTAMU). WTAMU is the largest degree provider with over 2,300 for-credit awards (completions) reported in 2022. Of the total awards by WTAMU in 2022, the top program of study was business

FIGURE 26. TOP CAREER AND TECHNICAL EDUCATION PROGRAMS OF STUDY IN REGION 16 ESC

PROGRAM OF STUDY	# OF DISTRICTS
Applied Agriculture Engineering	29
Family and Community Services	26
Animal Science	20
Healthcare Diagnostics	19
Healthcare Therapeutic	19
Medical Therapy	16
Accounting and Financial Services	14
Teaching and Training	14
Early Learning	13

Source(s): Texas Education Agency (TEA); TIP Strategies, Inc.

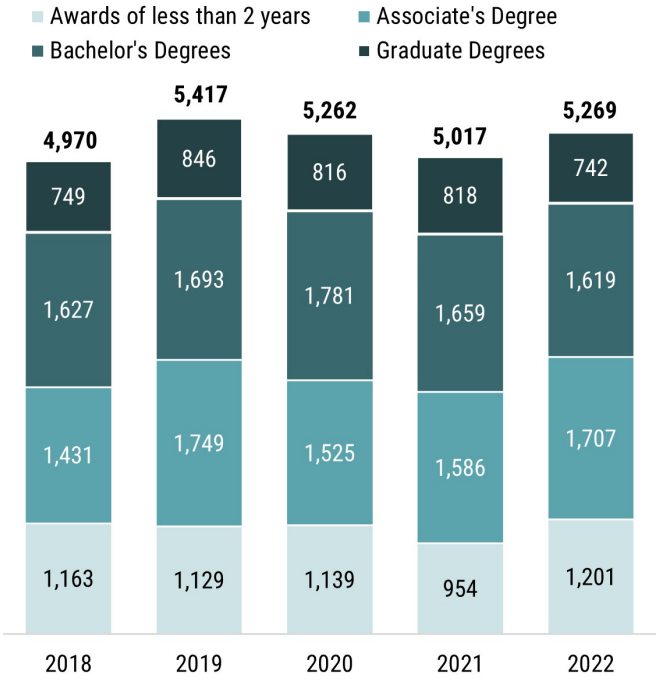
administration and management with 13.9 percent of awarded degrees. The other popular programs of study at WTAMU in 2022 included: general studies (7.2 percent), multi-/interdisciplinary studies (6.4 percent), finance (6.4 percent), and registered nursing (5.6 percent). WTAMU awarded all of the graduate degrees in the region in 2022.

Texas Tech University also has a presence in the region with the Texas Tech University Health Science Center (TTUHSC) Amarillo campus. However, program and completion data for the TTUHSC Amarillo campus is aggregated with other campuses within the Texas Tech University System. In data sourced from the National Center for Education Statistics focused on completions within Region 16 ESC, the TTUHSC Amarillo campus is not included.

The community colleges serving the region include Amarillo College, Clarendon College, and Frank Phillips College, awarding a combined total of over 2,900 completions in 2022. Amarillo College, alone, awarded over 955 awards of less than 2 years and over 1,390 associate's degrees in 2022. Amarillo College's most popular programs of study include general studies (16.5 percent of awards in 2022), business administration and management (10.9 percent), registered nursing (8.6 percent), truck and bus driving (6.8 percent), and electromechanical engineering technology (6.4 percent).

Meanwhile, Clarendon College awarded 290 completions in 2022 largely in general studies (38.6 percent). Hair styling (23.1 percent), registered nursing (15.2 percent), farm and ranch management (6.9 percent), and licensed vocational nurse training (6.2 percent) are among the other popular programs of study at Clarendon College.

FIGURE 27. GENERAL PROGRAM COMPLETIONS
All completions by Region 16 ESC institutions, 2018–2022

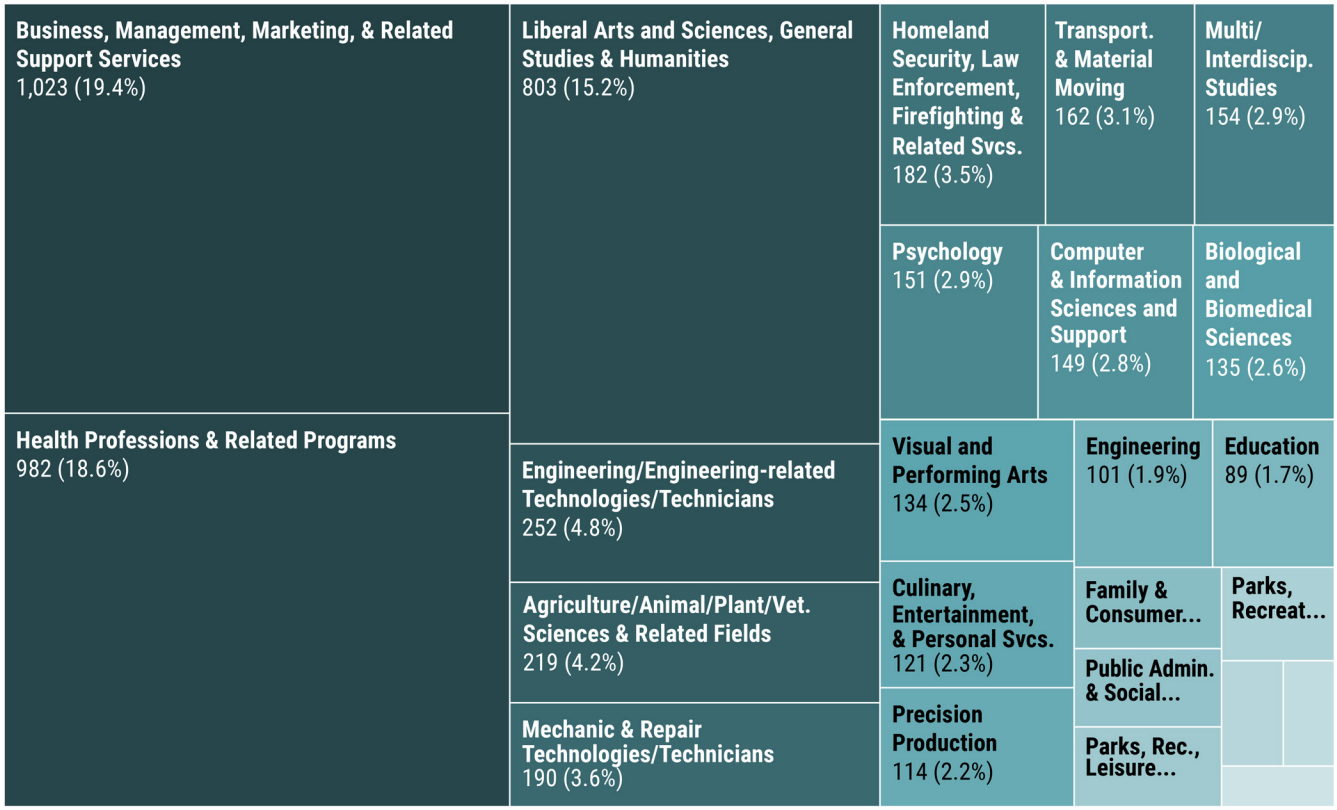


Source(s): National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS); TIP Strategies, Inc.
Note(s): Associate's degrees include certificates earned in more than two years and less than four years. Graduate degrees include master's and doctoral degrees. Includes only general programs with at least 25 average annual completions between 2018 and 2022.

Frank Phillips College awarded 271 completions in 2022. Its top five programs of study include: general studies (42.8 percent), instrumentation technology (15.5 percent), cosmetology (14.8 percent), licensed vocational nurse training (10.7 percent), and industrial technology (6.6 percent).

Of the 5,017 degrees and certificates completed in 2022, roughly one in five (1,023 awards representing 19.4 percent) were awarded for areas of study related to business, management, marketing, and related support services (see Figure 28). Other top programs in Region 16 ESC include health professions (982 awards in 2022); liberal arts and sciences, general studies and humanities (803 awards); engineering technologies (252 awards); and agriculture, animal, plant, veterinary science (219 awards).

FIGURE 28. GENERAL PROGRAM COMPLETIONS | DISTRIBUTION
Region 16 ESC Institutions, 2022

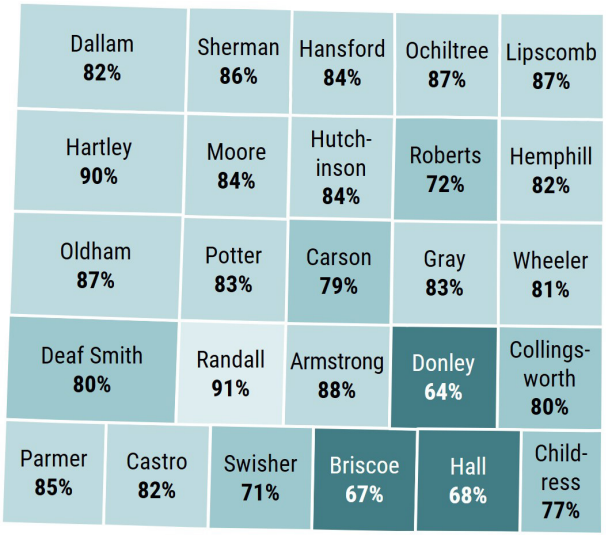


Source(s): National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS); TIP Strategies, Inc.
Note(s): Includes only general programs with at least 25 average annual completions in 2022.

BROADBAND ANALYSIS

Households in Region 16 ESC have slightly less access to broadband compared to the state and national averages. While 85 percent of Region 16 ESC households have broadband access, both the Texas and US averages are higher at 88 percent. Notably, more than 30 percent of households in Donley, Briscoe, and Hall Counties lack access to broadband. Randall County has the highest percentage of households with broadband access at 91 percent. Broadband access impacts the region's capacity for remote work and learning across all fields, but particularly IT.

FIGURE 29. BROADBAND ACCESS BY COUNTY, REGION 16 ESC
Percentage of households with broadband access



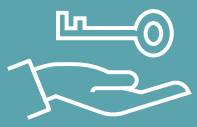
Source(s): 2022 American Community Survey (ACS) 5-year sample; TIP Strategies, Inc.
Note(s): Darker colors indicate lower percentages of households with broadband access.

REGIONAL FRAMEWORK

The Regional Framework aims to elevate the Panhandle's educational attainment and is organized by three major goal areas: access, building blocks, and curriculum. Primarily, the Regional Framework serves as a roadmap for collaboration and data sharing between and beyond the PPLT.

As a partnership between multiple organizations, the PPLT's structure and its role as a TRPN regional convener are core considerations behind the recommendations. The Regional Framework is also designed to support the in-demand career pathways identified through the TRPN work as the strategic planning process continues.

FIGURE 30. COLLABORATION AND DATA SHARING RECOMMENDATIONS



GOAL 1. ACCESS

1.1 Expand access to the continuum of work-based learning opportunities in each target career pathway (healthcare, skilled trades, and IT).

1.2 Enhance college and career advising capacity across Panhandle school districts.



GOAL 2. BUILDING BLOCKS

2.1 Engage employers through the Next Generation Sector Partnership model to strengthen each target career pathway, while acknowledging existing employer gatherings to limit employer fatigue.

2.2 Raise student and family awareness of target career pathways.



GOAL 3. CURRICULUM

3.1 Strengthen the capacity of existing training programs for target career pathways.

3.2 Tap into existing models and tools to sustain the education and training building blocks needed to meet employer talent demand.

GOAL 1. ACCESS

Support students by increasing access to effective advising and to work-based learning in high demand careers in the Panhandle.

STRATEGIES AND ACTIONS

1.1. Expand access to the continuum of work-based learning opportunities in each target career pathway (healthcare, skilled trades, and IT).

1.1.1. Scale career exploration opportunities that expose students to the diverse healthcare careers in high demand in the Panhandle.

- Create live or recorded virtual engagement opportunities for students and families to learn about healthcare pathways.
- Facilitate opportunities for students and families to hear from young professionals in the field who can articulate their academic and career journey within the pathway.

1.1.2. Promote youth pre-apprenticeship opportunities in the skilled trades.

1.1.3. Establish a program to connect students to IT internships at government or education entities, including ISDs.

1.2. Enhance college and career advising capacity across Panhandle school districts.

1.2.1. Create an informational toolkit for K–12 advisors which provides resources and suggested programmatic timelines. Update annually, and leverage Region 16 ESC's access to superintendents and principals to distribute.

1.2.2. Invest in software solutions that enhance advising effectiveness by enabling districts to track student-level college and career data and communicate with students and families.

1.2.3. Conduct a Region 16 ESC-wide student career interest survey to understand educational and career goals and tailor advising engagements to results.

1.2.4. Partner with Workforce Solutions Panhandle to engage the K–12 Outreach Specialist in districts with high need of advising support.

1.2.5. Expand professional development opportunities for educators which emphasize building college and career readiness.

- Establish mentoring programs for new staff.
- Scale externships to expose educators to career pathways in the region.

BEST PRACTICE: GO BUILD ALABAMA

Go Build Alabama is a dynamic campaign aiming to inform and empower residents of Alabama about the numerous job prospects available in the construction industry. Despite a growing demand for skilled workers, many of these roles remain unfilled. The Go Build Alabama campaign seeks to bust the misperception that a college degree is the only path to a successful career. Mike Rowe, the creator and host of Discovery Channel's Dirty Jobs series, spearheaded the campaign as its spokesperson. At the launch of Go Build Alabama on Labor Day 2010, Rowe emphasized, "there are opportunities in Alabama right now that most people don't even know about in construction. These opportunities aren't alternatives to viable careers—they are viable careers."

Source(s): Budd McLaughlin, "Mike Rowe helps launch Go Build campaign for Alabama," The Huntsville Times, August 22, 2010.

GOAL 2. BUILDING BLOCKS

Support employers by raising awareness of local career opportunities and convening partners to ensure a strong foundation of sustainable building blocks for career pathways in the Panhandle.

Strategies and Actions

2.1. Engage employers through the Next Generation Sector Partnership model to strengthen each target career pathway, while acknowledging existing employer gatherings (like those led by community colleges for Perkins funding) to limit employer fatigue.

- **2.1.1.** Leverage the employers engaged in the Rural Nursing Education Consortium and Gateways to Health Careers as a starting point for healthcare sector partnership employer champions.
- **2.1.2.** Build on the momentum around the potential for a 1-800 Plumber mobile learning unit to engage other skilled trades employers in a sector partnership to develop skilled trades curricula and training assets.
- **2.1.3.** Tap into IT-related industry advisory councils to understand workforce challenges for local roles in IT functions.

2.2. Raise student and family awareness of target career pathways.

- **2.2.1.** Partner with the Panhandle Community Partnership at the Amarillo Area Foundation to launch a career awareness outreach strategy aimed at students and families.
  - Promote information about target career pathways, including job opportunities, expected wages, and pathway entry points in alignment with Workforce Solutions Panhandle and postsecondary education training providers. Include employee testimonials or other data supporting employment success stories in the Panhandle.
  - Leverage media and community organizations across the Panhandle to ensure students and families hear the message from multiple sources with established community credibility.
- **2.2.2.** Continue the EPIC Success Career Fair and explore opportunities to expand its accessibility, such as providing bussing or other transportation solutions for more students to participate.

RESOURCE: THE INSTITUTE OF NETWORKED COMMUNITIES' (INC) NEXT GENERATION SECTOR PARTNERSHIP

The Next Generation Sector Partnership model is an industry-driven, community-supported partnership of companies from the same industry. Focused on issues related to an industry's competitiveness, primarily focused on education and training needs, these sector partnerships are led by employer champions that define priorities and drive solutions with broad-based support from education, workforce development, and economic development leaders. The six-step process to build Next Gen Sector Partnerships is as follows:
1. Build your regional support team and make the case for a new approach.
2. Define the scope and industry focus.
3. Prepare to launch.
4. Launch.
5. Move to action: organize the aftermath and begin implementation.
6. Sustain and evolve.

Source(s): Institute for Networked Communities, "Next Generation Sector Partnerships Training Manual."

GOAL 3. CURRICULUM

Support education and training providers in teaching curriculum aligned with industry needs and increasing capacity to serve more students.

Strategies and Actions

3.1. Strengthen the capacity of existing training programs for target career pathways.

3.1.1. Expand rural healthcare training programs like the Rural Nursing Education Consortium and Gateways to Health Careers partnership.

- Use the Rural Nursing Education Consortium to offer additional in-demand healthcare certifications, including certified nursing assistants, medical assistants, and pharmacy technicians (see Figure 36 and Figure 37).
- Increase the number of school districts offering health science programs by leveraging the Gateways to Health Careers partnership.

3.1.2. Identify opportunities to engage retired, part-time, or remote skilled trades professionals as career and technical educators in school districts.

3.1.3. Deploy K–12 IT and cybersecurity curricula with remote delivery options, like Coherent Cyber Education.

3.2. Tap into existing models and tools to sustain the education and training building blocks needed to meet employer talent demand.

3.2.1. Support districts in the pursuit of Pathways in Technology (P-TECH) designations, which require an institution of higher education partner and an industry partner.

- Spotlight Region 16 ESC superintendents and principals overseeing P-TECHs to share transformative best practices, including the role of cross-sector partnerships in rural education.

3.2.2. Support the efforts of regional community colleges (Amarillo College, Clarendon College, and Frank Phillips College) to recruit local high school students to their dual credit and enrollment programs.

- Educate superintendents on the Financial Aid for Swift Transfer program, which qualifies low-income high school students for free participation in dual credit via state funding.
- On a college-by-college regional basis, convene local K–12 superintendents to improve dual credit and enrollment offerings in target career pathways. Under the HB 8

BEST PRACTICE: IMPERIAL VALLEY COLLEGE, CALIFORNIA

Imperial Valley College (IVC) committed to improving rural high school students' access to community college by promoting a college-going culture. IVC's goal is for 90 percent of high school seniors to apply before graduation. Partnered now with 9 high schools, IVC staff advisors work on-site at local K–12 campuses to recruit students for dual enrollment and provide college planning support. IVC aims for each dual enrollment student to earn at least 15 hours of credit prior to graduation. Workshops for parents dispel myths about the cost of community college and presentations for students encourage on-the-spot application. IVC now enrolls over 60 percent of area high school graduates, and more than half of students transferring from IVC earn a bachelor's degree within 6 years.

Source(s): Michael Burke, "How Imperial Valley's effort to create a 'college-going culture' garnered national recognition." *Ed Source* (June 2023).

funding model,[7] community colleges are rewarded for every high school student who completes at least 15 hours of dual credit.

3.2.3. Encourage innovative multi-district partnerships based on the Rural School Innovation Zone (RSIZ) model. The RSIZ model combines school district resources to enable rural CTE through employer and postsecondary education partnerships.

- Educate school district superintendents on the model and provide governance templates, including for memoranda of understanding.
- Support districts in leveraging College, Career, or Military Readiness Outcomes Bonus and Teacher Incentive Allotment funding as sustaining factors of the model.

[7] In 2023, the 88th Texas Legislature passed HB 8, an overhaul of state funding models for community colleges based on credentials of value. HB 8 revised previously static models to align state funding with performance-based metrics and outcomes. High school students who earn at least 15 credit hours at a given institution are one among several metrics. Additional information on HB8 is available from the Texas Higher Education Coordinating Board website.

APPENDIX: PATHWAY PROFILES

The Panhandle Pathways Leadership Team (PPLT) is focusing its efforts on career pathways in healthcare, the skilled trades, and IT occupations. Support for targeting healthcare and skilled trades emerged from the labor market data analysis and stakeholder engagement, which show clear demand for occupations in these industries. Interest in creating IT pathways is based on Region 16 ESC's identification of these occupations and skillsets as a target. However, the demand for IT jobs and the associated educational infrastructure within Region 16 ESC is limited (see Job Posting Analysis, page 22, and Education Analysis, page 23). Despite limited demand, Region 16 ESC may still have an IT talent gap given the low number of residents being trained in this field.

RECOMMENDATIONS

Recommendations specific to Region 16 ESC's target career pathways are one component of the Regional Framework, providing focus to the PPLT's efforts to support diverse quality job opportunities. These recommendations work in tandem with other strategies focused on collaboration and data sharing within the PPLT. Ultimately, strong career pathways cannot be achieved at the scale of the Texas Panhandle without a robust partnership network and a nuanced understanding of the needs and opportunities across Region 16 ESC.

FIGURE 31. CAREER PATHWAY RECOMMENDATIONS
A Snapshot of the Target Career Pathway Recommendations from the Regional Framework

	ACCESS	BUILDING BLOCKS	CURRICULUM
Healthcare	Scale career exploration opportunities that expose students to the diverse healthcare careers in high demand in the Panhandle.	Leverage the employers engaged in the Rural Nursing Education Consortium and Gateways to Health Careers as a starting point for healthcare sector partnership employer champions.	Expand rural healthcare training programs like the Rural Nursing Education Consortium and Gateways to Health Careers partnership.
Skilled Trades	Promote youth pre-apprenticeship opportunities in the skilled trades.	Build on the momentum around the potential for a 1-800 Plumber mobile learning unit to engage other skilled trades employers in a sector partnership to develop skilled trades curricula and training assets.	Identify opportunities to engage retired, part-time, or remote skilled trades professionals as career and technical educators in school districts.
Information Technology	Establish a program to connect students to IT internships at government or education entities, including ISDs.	Tap into IT-related industry advisory councils to understand workforce challenges for local roles in IT functions.	Deploy K–12 IT and cybersecurity curricula with remote delivery options, like Coherent Cyber Education.

Source(s): TIP Strategies, Inc.

ABOUT THE PATHWAY PROFILES

To provide a common foundation, TIP prepared a brief profile of each of the three targeted career pathways. The profiles provide information on relevant Region 16 ESC employment trends, educational offerings, and employers, along with a suggested career ladder.

This pathway "spotlight" illustrates potential progressions from entry level occupations to high-wage, high-skill occupations arrayed across multiple tiers of education and training. Each tier is customized to the education and training requirements of the targeted career pathway as shown in Figure 32. Each occupation presented in the spotlight includes regional data on the number of jobs (2022) and median wages, as well as national data on typical education requirements and automation risk. Given the robust career pathways in the healthcare field, the healthcare spotlight focuses on nursing.

FIGURE 32. EDUCATION AND TRAINING LEVELS FOR PATHWAY SPOTLIGHT

LEVEL
Low
High

HEALTHCARE

- **Entry-Level.** Requires a high school diploma or equivalency.
- **Non-Degree.** A non-degree postsecondary award (less than 2 years) or certification is needed.
- **Degree.** Requires an associate's or bachelor's degree.
- **Advanced.** Training beyond a 4-year degree is needed.

SKILLED TRADES

- **Entry-Level.** Little or no formal education is required.
- **Non-Degree.** A non-degree postsecondary award (less than 2 years) or certification is needed.
- **Apprenticeships.** Combination of paid on-the-job training and classroom instruction over a defined period (typically three to five years).
- **Degree.** A formal degree of 2 years or more is required.

INFORMATION TECHNOLOGY

- **Middle-Skill.** Requires training beyond high school, but less than a four-year degree. Includes some college, post-secondary non-degree awards, and associate's degrees.
- **Bachelor's.** Four-year degree is needed.
- **Advanced.** Training beyond 4-year degree is needed.

Source(s): TIP Strategies, Inc.

Along with these data points, the spotlight indicates where each identified occupation falls in terms of job quality and job access based on TIP's custom analysis. As part of the preparation of the *Region 16 Education Service Center Workforce & Labor Market Analysis*, TIP examined the factors affecting job quality (such as earnings, job stability, and workplace conditions) and accessibility (as measured by barriers to entry and demographic composition of the occupation) for more than 700 detailed occupations. Based on this in-depth analysis, each occupation is assigned to one of four quadrants, shown in Figure 33. This analytical tool can be used by Region 16 ESC and its partners to promote equitable job growth and opportunities.

FIGURE 33. ILLUSTRATION OF TIP'S JOB QUALITY AND JOB ACCESSIBILITY ANALYSIS

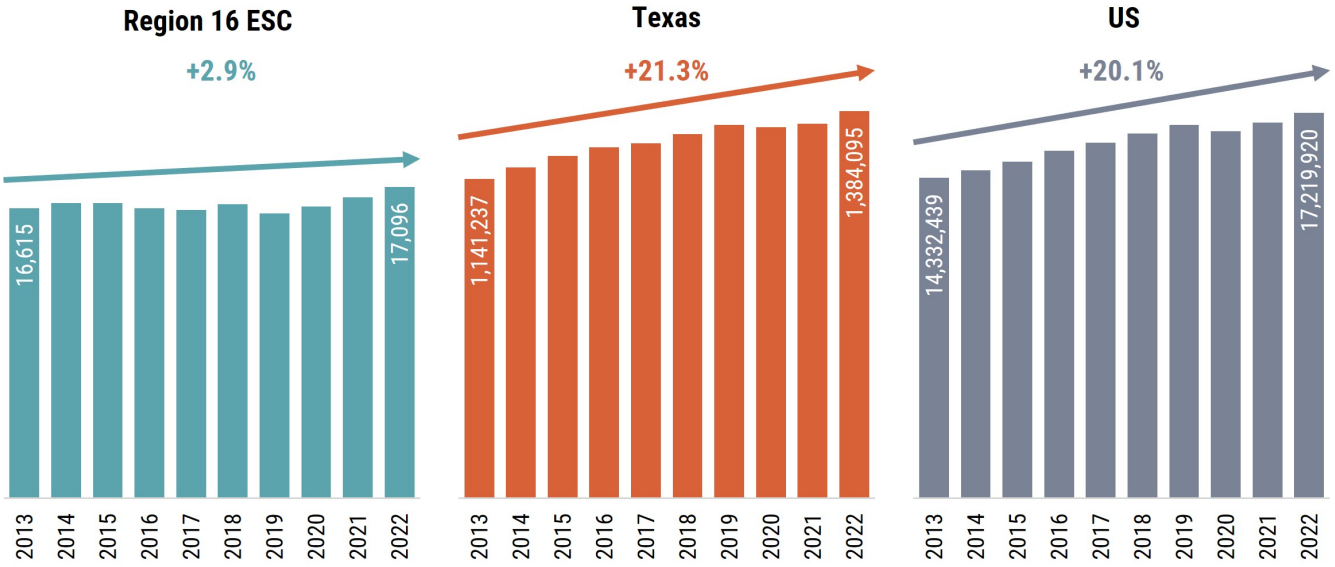


Source(s): TIP Strategies, Inc.

HEALTHCARE

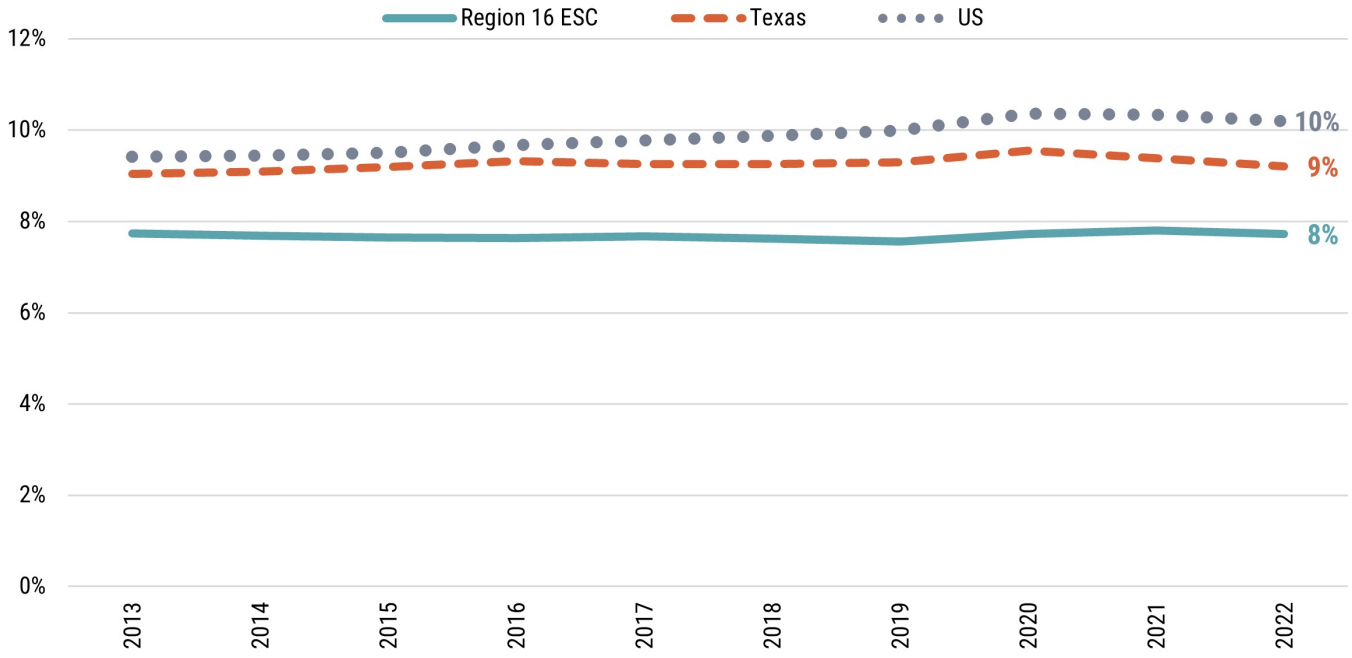
WORKFORCE

FIGURE 34. HEALTHCARE WORKFORCE TRENDS
Healthcare Practitioners & Technical Occupations and Healthcare Support Occupations, 2013-2022



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): To improve readability, employment levels in this exhibit are scaled to each geography (i.e., Region 16 ESC, Texas, and US).

FIGURE 35. HEALTHCARE WORKFORCE SHARE
Healthcare Practitioners & Technical Occupations and Healthcare Support Occupations, 2013-2022



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

OCCUPATIONS

FIGURE 36. TOP 15 HEALTHCARE PRACTITIONERS & TECHNICAL OCCUPATIONS AND HEALTHCARE SUPPORT OCCUPATIONS
Region 16 ESC, 2022 Jobs, Average Annual Openings 2022-2027, Median Hourly Earnings, Typical Education Required, and Typical On-The-Job Training

EDUCATION INDICATORS

- ○○○○○○ No Formal Educational Credential
- ●○○○○○ High School Diploma or Equivalent
- ●●○○○○ Postsecondary Nondegree Award
- ●●●○○○ Some College
- ●●●●○○ Associate's Degree
- ●●●●●○ Bachelor's Degree
- ●●●●●● Graduate or Professional Degree

ON-THE-JOB TRAINING INDICATORS

- ○○○○○ None
- ●○○○○ Short-term
- ●●○○○ Moderate-term
- ●●●○○ Long-term
- ●●●●○ Apprenticeship
- ●●●●● Residency

OCCUPATION	JOBS 2022	OPENINGS	EARNINGS	EDUCATION	TRAINING
Registered Nurses	3,530	+238	$36.80	●●●●●○	○○○○○
Home Health & Personal Care Aides	2,406	+388	$10.76	●○○○○○	●○○○○
Nursing Assistants	1,511	+236	$14.05	●●○○○○	○○○○○
Licensed Practical & Licensed Vocational Nurses	1,178	+104	$23.08	●●○○○○	○○○○○
Medical Assistants	696	+120	$15.56	●●○○○○	○○○○○
Pharmacy Technicians	554	+65	$17.57	●○○○○○	●●○○○
Dental Assistants	390	+60	$17.42	●●○○○○	○○○○○
Pharmacists	353	+20	$61.70	●●●●●●	○○○○○
Nurse Practitioners	348	+39	$50.49	●●●●●●	○○○○○
Radiologic Technologists & Technicians	326	+23	$29.18	●●●●○○	○○○○○
Emergency Medical Technicians	297	+40	$14.96	●●○○○○	○○○○○
Clinical Laboratory Technologists & Technicians	295	+25	$26.15	●●●●●○	○○○○○
Physicians, All Other	264	+13	$116.23	●●●●●●	●●●●●
Medical Records Specialists	248	+22	$17.86	●●○○○○	○○○○○
Physical Therapists	244	+14	$46.92	●●●●●●	○○○○○

Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

SUPPLY & DEMAND

FIGURE 37. HEALTH PROFESSIONS AND RELATED PROGRAM COMPLETIONS BY REGION 16 ESC INSTITUTIONS, 2022

AWARDS	
Healthcare-related awards	982
Total awards	5,442
Share	18.0%

AWARDS BY LEVEL	
Awards of less than 2 years	20.9%
Associate's degrees	42.0%
Bachelor's degrees	25.9%
Graduate degrees	11.3%

AWARDS BY CONFERRING INSTITUTION	
Amarillo College	53.6%
West Texas A&M University	37.2%
Clarendon College	6.3%
Frank Phillips College	3.0%

AWARDS BY GENDER	
Female	85.9%
Male	14.1%

LARGEST FIVE DETAILED PROGRAMS	
Registered Nursing/Registered Nurse	39.0%
Health Services/Allied Health/Health Sciences, General	11.1%
Licensed Practical/Vocational Nurse Training	10.0%
Health/Health Care Administration Management	5.6%
Medical/Clinical Assistant	5.5%

AWARDS BY RACE/ETHNICITY	
White	44.0%
Hispanic or Latino	41.3%
Black	6.1%
Asian	4.6%
Multiracial	2.2%
Other race/ethnicity	1.9%

Source(s): National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS); TIP Strategies, Inc.

FIGURE 38. TOP K–12 HEALTHCARE PATHWAYS

By Number of Region 16 ESC Districts, With TEA CTE Programs of Study

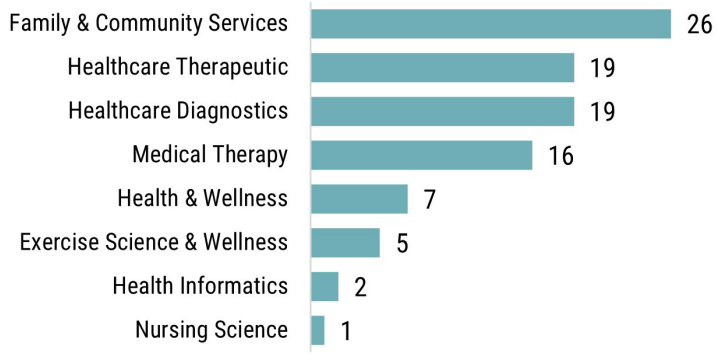


FIGURE 39. TOP HIRING EMPLOYERS

1. BSA Health System
2. Northwest Texas Healthcare System
3. Universal Health Services
4. Ardent Health Services
5. AccentCare Personal Care
6. United States Department of Veteran Affairs
7. Aveanna Healthcare
8. Prime Healthcare Services

Source(s): Texas Education Agency (TEA); Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

PATHWAY SPOTLIGHT: NURSING[8]

○○○○○○ No Formal Educational Credential
●○○○○○ High School Diploma or Equivalent
●●○○○○ Postsecondary Nondegree Award
●●●○○○ Some College
●●●●○○ Associate's Degree
●●●●●○ Bachelor's Degree
●●●●●● Graduate or Professional Degree

ADVANCED

NURSE ANESTHETIST

2022 Jobs: <10
Median Wage: $59.99
Range: $16.50–$31.35
Education: ●●●●●●
Automation Index: Low Risk

⬆ QUALITY, ⬇ ACCESS

NURSE PRACTITIONERS

2022 Jobs: 348
Median Wage: $50.49
Range: $40.08–$75.45
Education: ●●●●●●
Automation Index: Very Low Risk

⬆ QUALITY, ⬇ ACCESS

NURSE MIDWIVES

2022 Jobs: <10
Median Wage: $31.35
Range: $16.50–$59.99
Education: ●●●●●●
Automation Index: Low Risk

⬆ QUALITY, ⬇ ACCESS

DEGREE

REGISTERED NURSE

2022 Jobs: 3,530
Median Wage: $36.80
Range: $28.84–$47.37
Education: ●●●●●○
Automation Index: Low Risk

⬆ QUALITY, ⬇ ACCESS

MEDICAL & HEALTH SERVICES MANAGERS

2022 Jobs: 561
Median Wage: $45.56
Range: $28.05–$76.54
Education: ●●●●●○
Automation Index: Very Low Risk

⬆ QUALITY, ⬇ ACCESS

OCCUPATIONAL THERAPY ASSISTANTS

2022 Jobs: 71
Median Wage: $32.65
Range: $23.08–$39.86
Education: ●●●●○○
Automation Index: Low Risk

⬇ QUALITY, ⬆ ACCESS

NONDEGREE

LICENSED PRACTICAL & LICENSED VOCATIONAL NURSES

2022 Jobs: 1,178
Median Wage: $23.08
Range: $18.52–$28.92
Education: ●●○○○○
Automation Index: Low Risk

⬆ QUALITY, ⬆ ACCESS

NURSING ASSISTANTS

2022 Jobs: 1,511
Median Wage: $14.05
Range: $11.35–$18.12
Education: ●●○○○○
Automation Index: Low Risk

⬇ QUALITY, ⬆ ACCESS

MEDICAL ASSISTANTS

2022 Jobs: 696
Median Wage: $15.56
Range: $12.79–$20.65
Education: ●●○○○○
Automation Index: Low Risk

⬇ QUALITY, ⬆ ACCESS

ENTRY-LEVEL

HOME HEALTH & PERSONAL CARE AIDES

2022 Jobs: 2,406
Median Wage: $10.76
Range: $8.13–$14.45
Education: ●○○○○○
Automation Index: Low Risk

⬇ QUALITY, ⬆ ACCESS

PHYSICAL THERAPIST AIDES

2022 Jobs: 65
Median Wage: $12.73
Range: $9.60–$17.20
Education: ●○○○○○
Automation Index: Low Risk

⬇ QUALITY, ⬆ ACCESS

PSYCHIATRIC AIDES

2022 Jobs: <10
Median Wage: $13.54
Range: $9.62–$20.99
Education: ●○○○○○
Automation Index: Low Risk

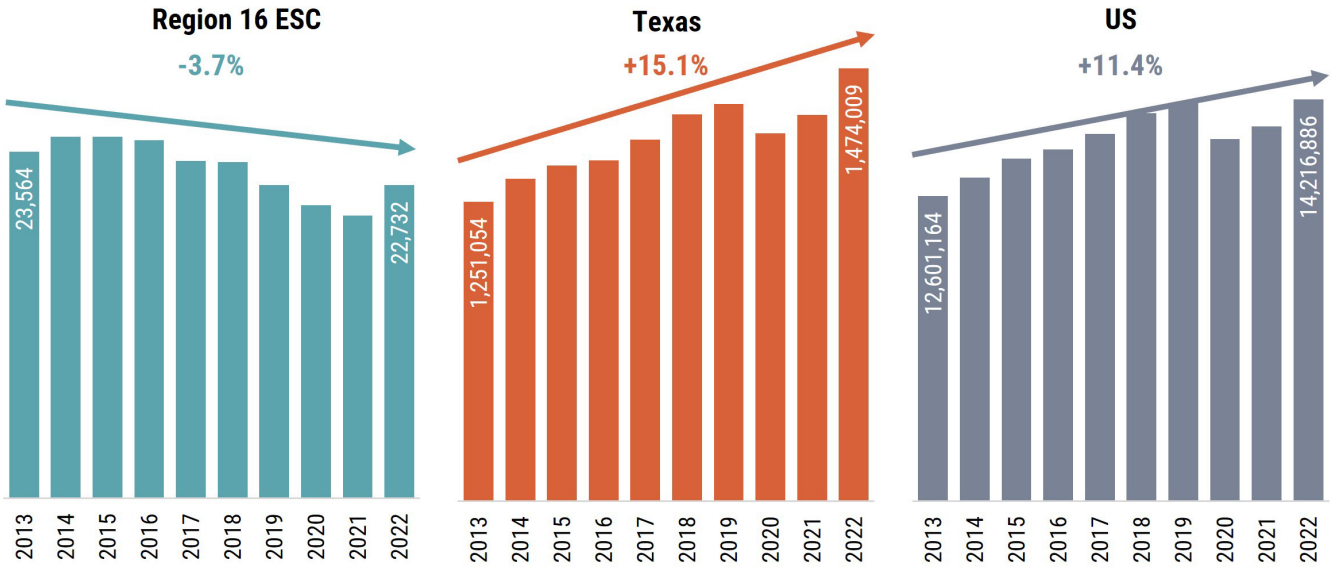
⬇ QUALITY, ⬆ ACCESS

[8] This career pathway focuses on a specific job title, nursing, because of its importance to the healthcare industry in Region 16 ESC.

SKILLED TRADES

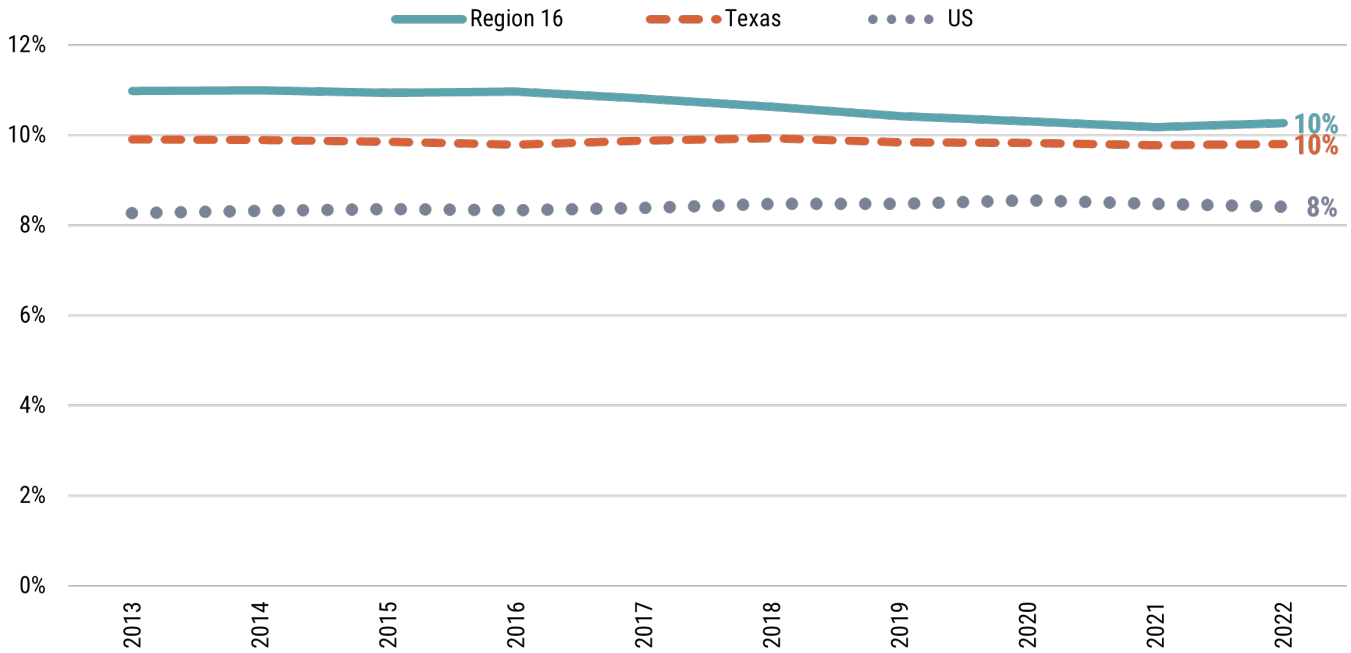
WORKFORCE

FIGURE 40. SKILLED TRADES WORKFORCE TRENDS
Construction, Extraction, Installation, Maintenance, and Repair Occupations, 2013-2022



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): To improve readability, employment levels in this exhibit are scaled to each geography (i.e., Region 16 ESC, Texas, and US).

FIGURE 41. SKILLED TRADES WORKFORCE SHARE
Construction, Extraction, Installation, Maintenance, and Repair Occupations, 2013-2022



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

OCCUPATIONS

FIGURE 42. TOP 15 CONSTRUCTION, EXTRACTION, INSTALLATION, MAINTENANCE, AND REPAIR OCCUPATIONS
Region 16 ESC, 2022 Jobs, Average Annual Openings 2022-2027, Median Hourly Earnings, Typical Education Required, and Typical On-The-Job Training

EDUCATION INDICATORS

- ○○○○○○ No Formal Educational Credential
- ●○○○○○ High School Diploma or Equivalent
- ●●○○○○ Postsecondary Nondegree Award
- ●●●○○○ Some College
- ●●●●○○ Associate's Degree
- ●●●●●○ Bachelor's Degree
- ●●●●●● Graduate or Professional Degree

ON-THE-JOB TRAINING INDICATORS

- ○○○○○ None
- ●○○○○ Short-term
- ●●○○○ Moderate-term
- ●●●○○ Long-term
- ●●●●○ Apprenticeship
- ●●●●● Residency

OCCUPATION	JOBS 2022	OPENINGS	EARNINGS	EDUCATION	TRAINING
Maintenance & Repair Workers, General	2,770	+308	$17.60	●○○○○○	●●○○○
Construction Laborers	2,286	+267	$16.28	○○○○○○	●○○○○
Automotive Service Technicians & Mechanics	1,519	+159	$18.63	●●○○○○	●○○○○
First-Line Supvs. of Construction Trades & Extract. Workers	1,321	+139	$28.51	●○○○○○	○○○○○
First-Line Supvs. of Mechanics, Installers, & Repairers	1,123	+125	$30.56	●○○○○○	○○○○○
Electricians	1,077	+128	$24.05	●○○○○○	●●●●●
Industrial Machinery Mechanics	874	+117	$26.65	●○○○○○	●●●●○
Carpenters	836	+87	$20.48	●○○○○○	●●●●●
Operating Engineers & Other Construction Equipment Ops.	804	+101	$21.08	●○○○○○	●●○○○
Plumbers, Pipefitters, & Steamfitters	689	+68	$22.31	●○○○○○	●●●●●
Bus & Truck Mechanics & Diesel Engine Specialists	601	+66	$22.19	●○○○○○	●●●●○
Roustabouts, Oil & Gas	535	+64	$17.42	○○○○○○	●●○○○
Heating, A/C, & Refrigeration Mechanics & Installers	472	+45	$22.19	●●○○○○	●●●●○
Painters, Construction & Maintenance	436	+37	$17.85	○○○○○○	●●○○○
Electrical Power-Line Installers & Repairers	408	+49	$32.12	●○○○○○	●●●●○

Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

SUPPLY & DEMAND

FIGURE 43. MECHANIC AND REPAIR TECHNOLOGIES/TECHNICIANS COMPLETIONS BY REGION 16 ESC INSTITUTIONS, 2022

AWARDS	
Skilled trade-related awards	190
Total awards	5,442
Share	3.5%

AWARDS BY CONFERRING INSTITUTION	
Amarillo College	100.0%

LARGEST FIVE DETAILED PROGRAMS	
Automobile/Automotive Mechanics Technology/Technician	44.2%
Diesel Mechanics Technology/Technician	30.0%
Airframe Mechanics & Aircraft Maintenance Tech./Technician	13.7%
Aircraft Powerplant Technology/Technician	6.3%
Autobody/Collison and Repair Technology/Technician	5.8%

AWARDS BY LEVEL	
Awards of less than 2 years	81.6%
Associate's degrees	18.4%
Bachelor's degrees	0.0%
Graduate degrees	0.0%

AWARDS BY GENDER	
Female	7.9%
Male	92.1%

AWARDS BY RACE/ETHNICITY	
White	48.9%
Hispanic or Latino	36.3%
Black	5.3%
Asian	4.2%
Multiracial	4.2%
Other race/ethnicity	1.1%

Source(s): National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS); TIP Strategies, Inc.

FIGURE 44. TOP K–12 SKILLED TRADES PATHWAYS

By Number of Region 16 ESC Districts, with TEA CTE Programs of Study

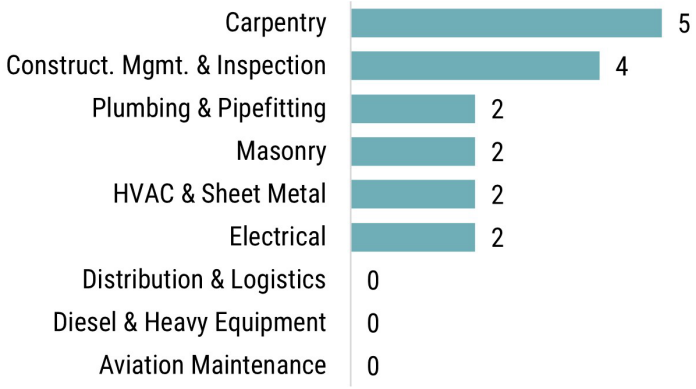


FIGURE 45. TOP HIRING EMPLOYERS

1. City of Amarillo
2. State of Texas
3. Austin Industrial
4. Love's
5. Western Equipment
6. JBS Foods
7. NextEra Energy
8. DISH
9. Walmart
10. Pantex Plant

Source(s): Texas Education Agency (TEA); Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

PATHWAY SPOTLIGHT: SKILLED TRADES

○○○○○ No Formal Educational Credential
●○○○○ High School Diploma or Equivalent
●●○○○ Postsecondary Nondegree Award
●●●○○ Some College
●●●●○ Associate's Degree
●●●●● Bachelor's Degree
●●●●● Graduate or Professional Degree

DEGREE

CONSTRUCTION MANAGERS

2022 Jobs: 717
Median Wage: $32.76
Range: $12.18–$103.40
Education: ●●●●●○
OTJ Training: Moderate-term
Automation Index: Low Risk

↑ QUALITY, ↓ ACCESS

CIVIL ENGINEERS

2022 Jobs: 210
Median Wage: $31.20
Range: $23.58–$58.79
Education: ●●●●●○
OTJ Training: None
Automation Index: Very Low Risk

↑ QUALITY, ↓ ACCESS

ARCHITECTS

2022 Jobs: 69
Median Wage: $35.86
Range: $17.57–$68.75
Education: ●●●●●○
OTJ Training: Internship
Automation Index: Very Low Risk

↑ QUALITY, ↓ ACCESS

APPRENTICESHIP

ELECTRICIANS

2022 Jobs: 1,077
Median Wage: $24.05
Range: $15.47–$35.23
Education: ●○○○○○
OTJ Training: Apprenticeship
Automation Index: High Risk

↑ QUALITY, ↑ ACCESS

CARPENTERS

2022 Jobs: 836
Median Wage: $20.48
Range: $8.95–$38.79
Education: ●○○○○○
OTJ Training: Apprenticeship
Automation Index: Very High Risk

↓ QUALITY, ↓ ACCESS

PLUMBERS, PIPEFITTERS, AND STEAMFITTERS

2022 Jobs: 689
Median Wage: $22.31
Range: $14.35–$31.55
Education: ●○○○○○
OTJ Training: Apprenticeship
Automation Index: Very High Risk

↓ QUALITY, ↑ ACCESS

NONDEGREE

AUTOMOTIVE SERVICE TECHNICIANS AND MECHANICS

2022 Jobs: 1,519
Median Wage: $18.63
Range: $10.45–$32.08
Education: ●●○○○○
OTJ Training: Short-term
Automation Index: High Risk

↓ QUALITY, ↑ ACCESS

HEATING, AC, AND REFRIGERATION MECHANICS AND INSTALLERS

2022 Jobs: 472
Median Wage: $22.19
Range: $15.05–$32.23
Education: ●●○○○○
OTJ Training: Long-term
Automation Index: High Risk

↓ QUALITY, ↓ ACCESS

AIRCRAFT MECHANICS AND SERVICE TECHNICIANS

2022 Jobs: 153
Median Wage: $28.96
Range: $18.47–$37.74
Education: ●●○○○○
OTJ Training: None
Automation Index: High Risk

↑ QUALITY, ↑ ACCESS

ENTRY-LEVEL

MAINTENANCE AND REPAIR WORKERS

2022 Jobs: 2,770
Median Wage: $17.60
Range: $11.40–$27.19
Education: ●●○○○○
OTJ Training: Moderate-term
Automation Index: High Risk

↑ QUALITY, ↓ ACCESS

CONSTRUCTION LABORERS

2022 Jobs: 2,286
Median Wage: $16.28
Range: $11.78–$25.05
Education: ○○○○○○
OTJ Training: Short-term
Automation Index: Very High Risk

↓ QUALITY, ↑ ACCESS

INDUSTRIAL MACHINERY MECHANICS

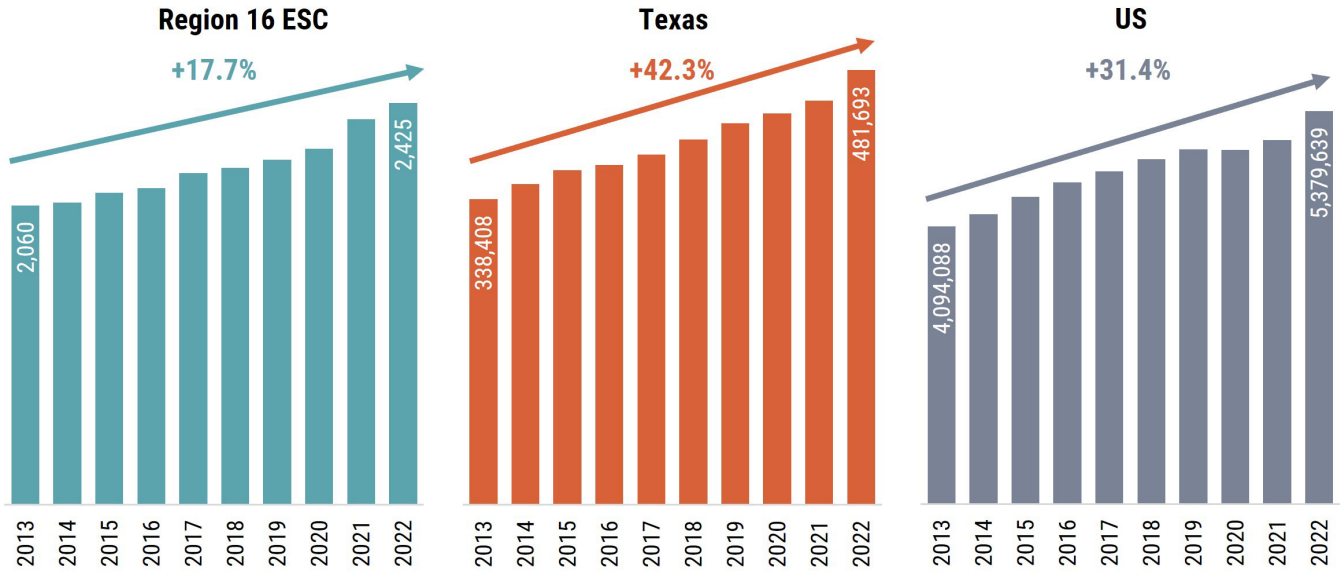
2022 Jobs: 874
Median Wage: $26.65
Range: $16.34–$41.57
Education: ●●○○○○
OTJ Training: Long-term
Automation Index: High Risk

↓ QUALITY, ↑ ACCESS

INFORMATION TECHNOLOGY

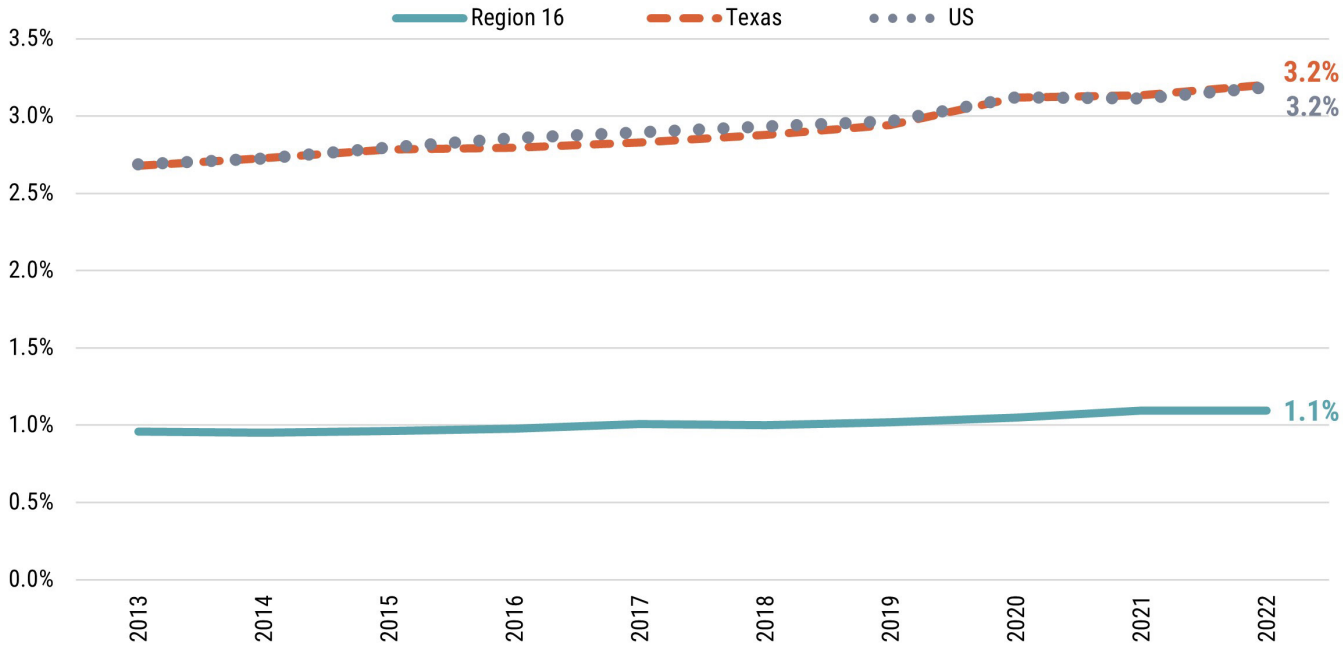
WORKFORCE

FIGURE 46. INFORMATION TECHNOLOGY WORKFORCE TRENDS
Computer and Mathematical Occupations, 2013-2022



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.
Note(s): To improve readability, employment levels in this exhibit are scaled to each geography (i.e., Region 16 ESC, Texas, and US).

FIGURE 47. INFORMATION TECHNOLOGY WORKFORCE SHARE
Computer and Mathematical Occupations, 2013-2022



Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

OCCUPATIONS

FIGURE 48. TOP 15 COMPUTER AND MATHEMATICAL OCCUPATIONS
Region 16 ESC, 2022 Jobs, Average Annual Openings 2022-2027, Median Hourly Earnings, Typical Education Required, and Typical On-The-Job Training

EDUCATION INDICATORS

- ○○○○○○ No Formal Educational Credential
- ●○○○○○ High School Diploma or Equivalent
- ●●○○○○ Postsecondary Nondegree Award
- ●●●○○○ Some College
- ●●●●○○ Associate's Degree
- ●●●●●○ Bachelor's Degree
- ●●●●●● Graduate or Professional Degree

ON-THE-JOB TRAINING INDICATORS

- ○○○○○ None
- ●○○○○ Short-term
- ●●○○○ Moderate-term
- ●●●○○ Long-term
- ●●●●○ Apprenticeship
- ●●●●● Residency

	JOBS 2022	OPENINGS	EARNINGS	EDUCATION	TRAINING
Computer User Support Specialists	572	+49	$23.15	●●●○○○	○○○○○
Software Developers	429	+48	$49.08	●●●●●○	○○○○○
Network & Computer Systems Administrators	260	+19	$38.17	●●●●●○	○○○○○
Computer Occupations, All Other	237	+23	$36.59	●●●●●○	○○○○○
Computer Systems Analysts	225	+20	$42.56	●●●●●○	○○○○○
Information Security Analysts	94	+10	$47.76	●●●●●○	○○○○○
Computer Network Support Specialists	87	+9	$26.10	●●●●○○	○○○○○
Software Quality Assurance Analysts & Testers	84	+8	$21.43	●●●●●○	○○○○○
Computer Network Architects	66	+6	$56.42	●●●●●○	○○○○○
Operations Research Analysts	65	+7	$33.63	●●●●●○	○○○○○
Computer Programmers	61	+5	$38.62	●●●●●○	○○○○○
Data Scientists	55	+7	$43.44	●●●●●○	○○○○○
Database Architects	47	+4	$78.68	●●●●●○	○○○○○
Database Administrators	46	+3	$43.13	●●●●●○	○○○○○
Computer & Information Research Scientists	29	+3	$68.28	●●●●●●	○○○○○

Source(s): BLS; Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

SUPPLY & DEMAND

FIGURE 49. COMPUTER AND INFORMATION SCIENCES AND SUPPORT SERVICES COMPLETIONS BY REGION 16 ESC INSTITUTIONS, 2022

AWARDS	
IT-Related Awards	149
Total Awards	5,442
Share	2.7%

AWARDS BY CONFERRING INSTITUTION	
Amarillo College	69.8%
West Texas A&M University	30.2%

LARGEST FIVE DETAILED PROGRAMS	
Computer Programming/Programmer, General	69.8%
Computer & Information Systems Security/Auditing/Info. Assurance	19.5%
Computer Science	10.7%
--	--
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AWARDS BY LEVEL	
Awards of less than 2 years	59.1%
Associate's degrees	10.7%
Bachelor's degrees	10.7%
Graduate degrees	19.5%

AWARDS BY GENDER	
Female	24.8%
Male	75.2%

AWARDS BY RACE/ETHNICITY	
White	58.4%
Hispanic or Latino	28.9%
Black	4.7%
Asian	3.4%
Multiracial	2.7%
Other race/ethnicity	2.0%

Source(s): National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS); TIP Strategies, Inc.

FIGURE 50. TOP K–12 INFORMATION TECHNOLOGY PATHWAYS

By Number of Region 16 ESC Districts, with TEA CTE Programs of Study

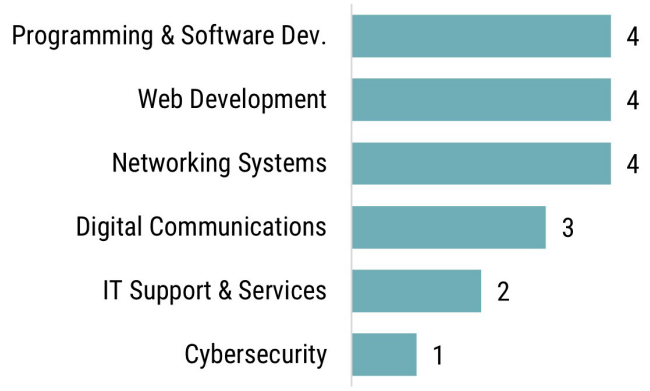


FIGURE 51. TOP HIRING EMPLOYERS

1. Pantex Plant
2. Computer Services Inc. (CSI)
3. Texas A&M University System
4. Xcel Energy
5. Danaher
6. Patterson
7. City of Amarillo
8. Cognizant Technology Solutions
9. Amarillo College
10. BSA Health System

Source(s): Texas Education Agency (TEA); Lightcast 2023.4—QCEW Employees, Non-QCEW Employees, and Self-Employed; TIP Strategies, Inc.

PATHWAY SPOTLIGHT: INFORMATION TECHNOLOGY

○○○○○○ No Formal Educational Credential
●○○○○○ High School Diploma or Equivalent
●●○○○○ Postsecondary Nondegree Award
●●●○○○ Some College
●●●●○○ Associate's Degree
●●●●●○ Bachelor's Degree
●●●●●● Graduate or Professional Degree

ADVANCED

COMPUTER AND INFORMATION RESEARCH SCIENTISTS

2022 Jobs: 29
Median Wage: $68.28
Range: $42.84–$115.44
Education: ●●●●●●
OTJ Training: None
Automation Index: Very Low Risk

▲ QUALITY, ▼ ACCESS

MATHEMATICIANS

2022 Jobs: <10
Median Wage: $36.09
Range: $18.80–$21.92
Education: ●●●●●●
OTJ Training: None
Automation Index: Low Risk

▲ QUALITY, ▼ ACCESS

STATISTICIANS

2022 Jobs: <10
Median Wage: $36.09
Range: $18.80–$65.70
Education: ●●●●●●
OTJ Training: None
Automation Index: Low Risk

▲ QUALITY, ▼ ACCESS

BACHELORS

SOFTWARE DEVELOPERS

2022 Jobs: 429
Median Wage: $49.08
Range: $28.55–$77.27
Education: ●●●●●○
OTJ Training: None
Automation Index: Very Low Risk

▲ QUALITY, ▼ ACCESS

NETWORK AND COMPUTER SYSTEMS ADMINISTRATORS

2022 Jobs: 260
Median Wage: $38.17
Range: $25.17–$58.03
Education: ●●●●●○
OTJ Training: None
Automation Index: Low Risk

▲ QUALITY, ▼ ACCESS

COMPUTER SYSTEMS ANALYSTS

2022 Jobs: 225
Median Wage: $42.56
Range: $26.69–$61.70
Education: ●●●●●○
OTJ Training: None
Automation Index: Very Low Risk

▲ QUALITY, ▼ ACCESS

MIDDLE SKILL

COMPUTER USER SUPPORT SPECIALISTS

2022 Jobs: 572
Median Wage: $23.15
Range: $13.84–$34.90
Education: ●●●○○○
OTJ Training: None
Automation Index: Very Low Risk

▲ QUALITY, ▼ ACCESS

COMPUTER NETWORK SUPPORT SPECIALISTS

2022 Jobs: 87
Median Wage: $26.10
Range: $16.86–$38.13
Education: ●●●●○○
OTJ Training: None
Automation Index: Low Risk

▲ QUALITY, ▼ ACCESS

COMPUTER NUMERICALLY CONTROLLED TOOL PROGRAMMERS

2022 Jobs: 21
Median Wage: $30.94
Range: $19.48–$51.94
Education: ●●○○○○
OTJ Training: Moderate-term
Automation Index: High Risk

▲ QUALITY, ▼ ACCESS



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