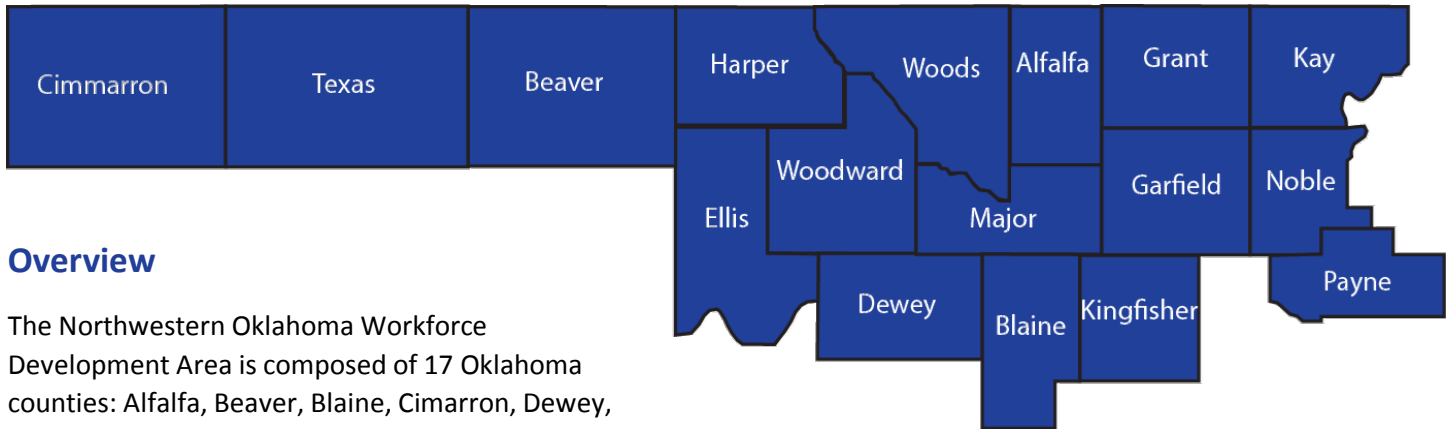


Northwestern Oklahoma Workforce Development Area Briefing

May 2017



Overview

The Northwestern Oklahoma Workforce Development Area is composed of 17 Oklahoma counties: Alfalfa, Beaver, Blaine, Cimarron, Dewey, Ellis, Garfield, Grant, Harper, Kay, Kingfisher, Major, Noble, Payne, Texas, Woods, and Woodward.

According to the U.S. Census Bureau, this combined region of Oklahoma covers 19,657 square miles, making it the largest of the state's workforce areas in geographical size. In 2016, an estimated 319,536 Oklahoma citizens live in the seventeen-county area – 8.1% of the state's total population. Five cities in the area boast populations of over 10,000 residents, including Enid, Guymon, Ponca City, Stillwater, and Woodward.

Note that for simplicity, the Northwestern Oklahoma Workforce Development Area will generally be referenced throughout this report as the "Area." Sources for all data are cited. The most common data source utilized is EMSI, data release 2017.1.

Population Breakdown by County

This section of the report examines the geographical distribution of the population of the Area. A chart titled "2016 Area Percentage of Population by County" follows the analysis summary.

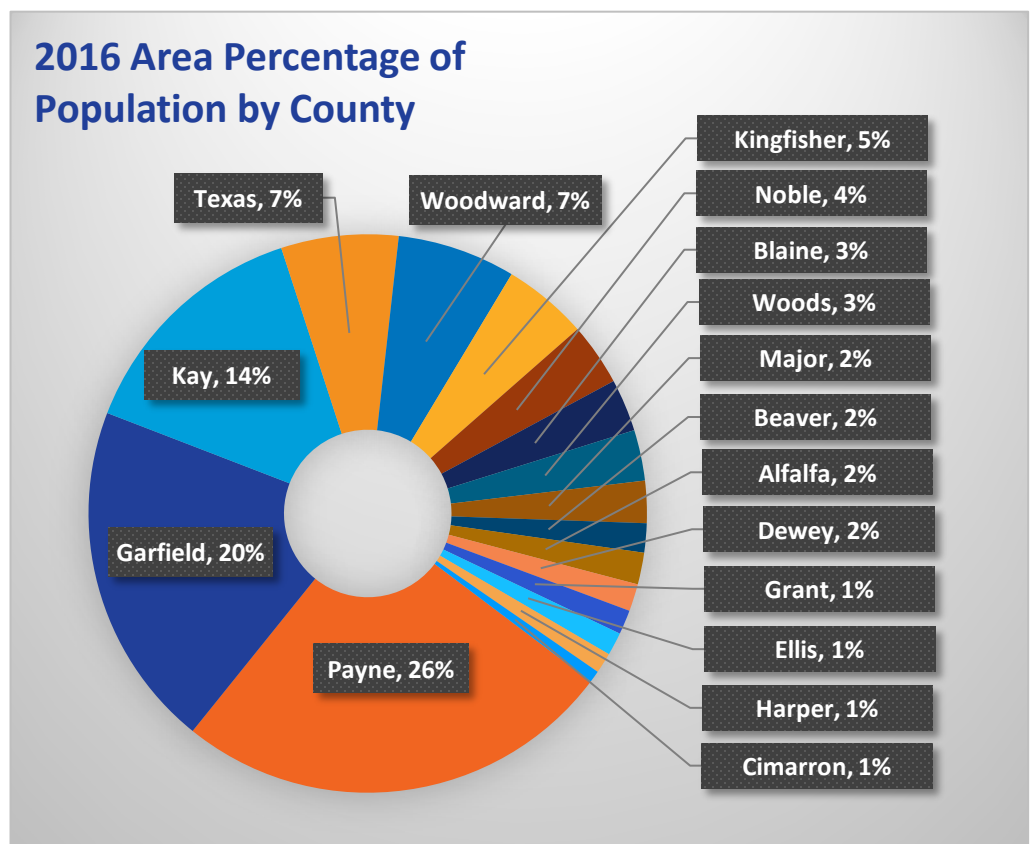
- Payne County is the most populous county in the Area and home to 81,500 individuals, over one-quarter of the Area population.
- The city of Enid, the county seat of Garfield County, is the largest city in the Area with an estimated population of 50,685. Garfield County is the second most populous county in the Area, home to approximately 64,120 individuals – 20% of the Area population.
- Cimarron County is the least populous county in the Area with an estimated total population in 2016 of 2,164.
- Between 2010 and 2016, the Area experienced a growth rate of 3.3%, a net increase of 10,285 residents. The majority of Area counties – 11 total – experienced population growth. Woodward County exhibited the largest growth rate at 9.4%, an increase of 1,883 citizens. Payne County, though experiencing a lower growth rate of 5.3%, added 4,069 residents. The Garfield County population grew by 5.5% or 3,361 individuals. These three counties

accounted for a total population increase of 9,313 Area residents – 90% of the overall Area population growth. The remaining eight counties in which the population increased experienced growth rates between 2.1% and 5.8%.

In contrast, between 2010 and 2016, six Area counties decreased in population, albeit by minimal amounts. Kay County is estimated to have lost the most residents at 1,265, a decrease of 2.7% of that county’s population. The population of Cimarron County fell by 293 – 11.9% of the 2010 population. Noble County exhibited the lowest population loss of 15 citizens (-0.13%).

- In addition to overall population representation, it is helpful to examine population density, measured in the number of persons living in a one-square-mile area. The Northwestern Oklahoma Workforce Development Area is predominantly rural, with no major metropolitan areas and five cities with a population over 10,000. Sixteen of the seventeen counties in the Area exhibit extremely low population density rates, below 60 persons per square mile.

Cimarron County is most notable as the county possessing the lowest population density in the Area at fewer than 2 residents per square mile. Payne County, the smallest county in geographical area at 697 square miles, with a population of 81,500, exhibits the highest population density at 117 persons per square mile. As a point of comparison, the two counties in the state of Oklahoma experiencing the highest population density, Oklahoma and Tulsa, each display county-wide population densities of over 1,000 individuals per square mile.



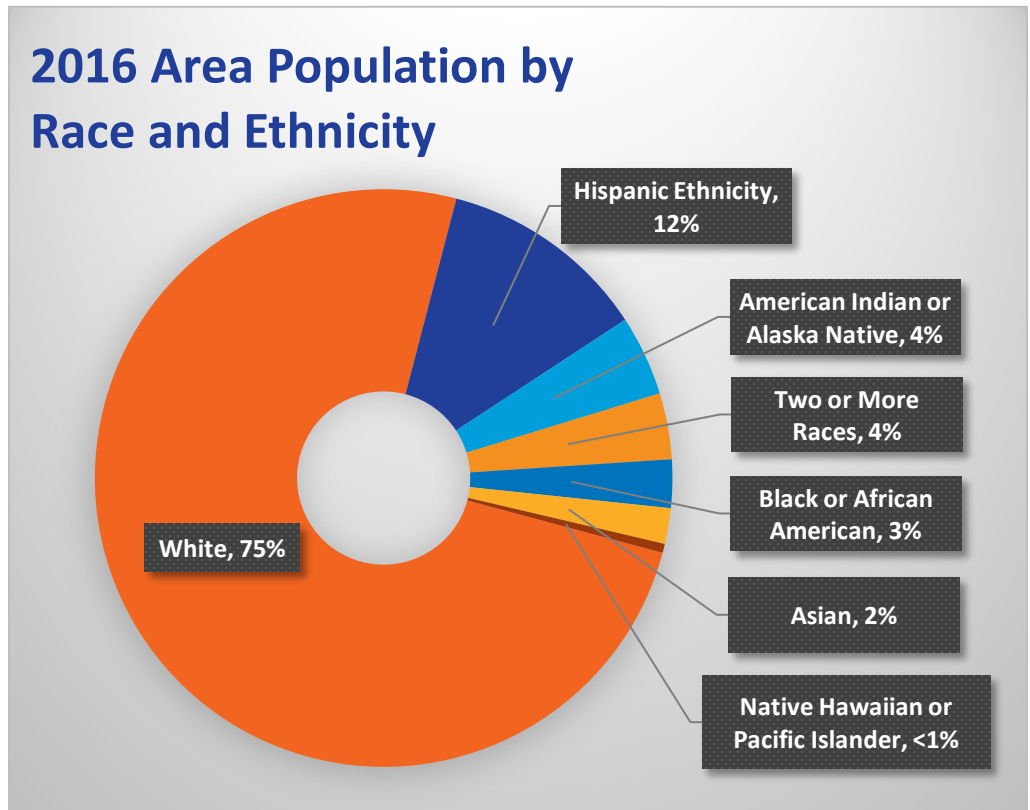
Source: EMSI 2017.1

Population Breakdown by Race and Ethnicity

The chart included in this report section, titled “2016 Area Population by Race and Ethnicity,” illustrates the racial and ethnic diversity of residents living in the Northwestern Oklahoma Workforce Development Area. The racial categories designated by the U.S. Census Bureau are utilized. It should be noted that the Census Bureau categorizes “Hispanic,” not as a race, but as an ethnicity. As such, Hispanic is always reported in conjunction with another racial designator, i.e. “Black or African American, Hispanic.” Individual races included in the chart were reported as Non-Hispanic.

- Over 239,000 Area residents identify themselves as “White.” This equates to 74.9% of the total Area population, 6.2 percentage points greater than the statewide representation of that race, 68.7%.
- At 0.5% (1,671 total Area residents), “Native Hawaiians or Pacific Islanders, Non-Hispanic,” represent the smallest racial classification.

- Individuals of native descent are categorized by the Census Bureau as “American Indian or Alaska Native.” This racial group is significantly under-represented in the Northwestern Oklahoma Workforce Development Area compared with the Oklahoma statewide population. American Indian or Alaska Natives, Non-Hispanic, represent only 4.5% of the population in the Area, less than one half of the statewide representation of 9.2%. Individuals self-identifying as “Black or African American, Non-Hispanic” are also significantly under-represented in the Area at 2.7% compared to a statewide population of 7.3%.



Source: EMSI 2017.1

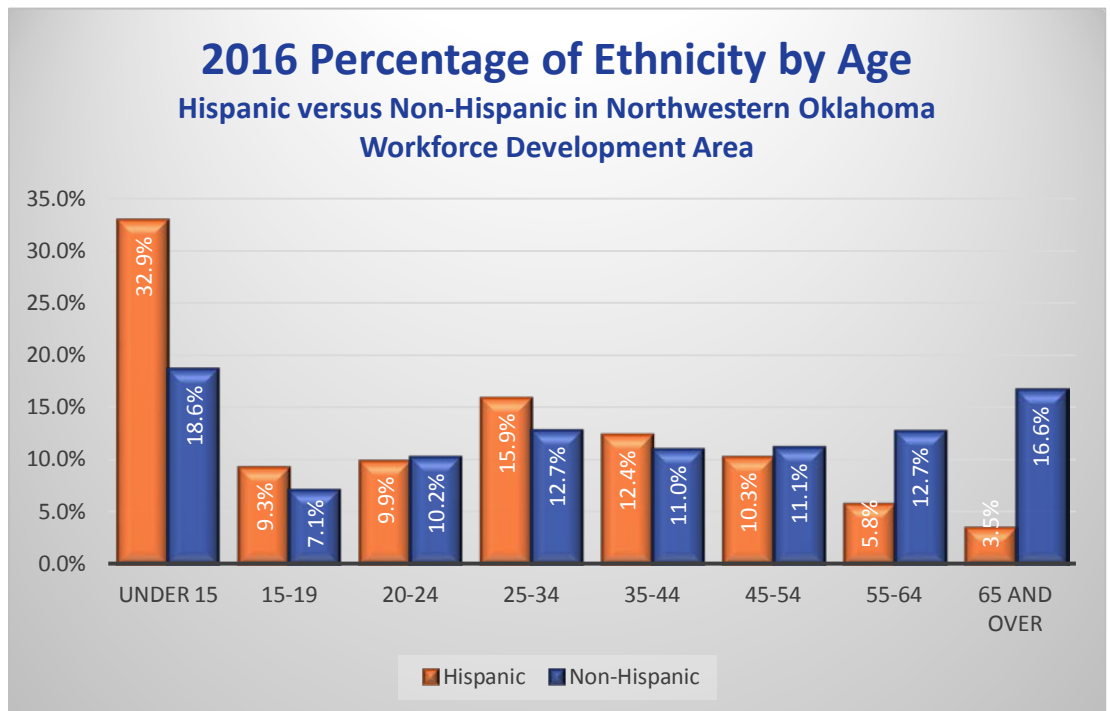
- Individuals who self-identify as being of Hispanic ethnicity account for only 11.7% of the Area population. As noted previously, Hispanic ethnicity is always reported in conjunction with a racial designator. This figure includes everyone of Hispanic ethnicity, regardless of race. Between 2010 and 2016, the Hispanic population representation in the Area increased by 26.1%, 3.4 percentage points greater than the statewide growth rate for Hispanics of 22.7%. This percentage translates into a net increase of 7,754 Hispanic individuals residing in the Area.
- Between 2010 and 2016, the growth rate for the Non-Hispanic population, regardless of race, was 0.91%, resulting in an increase in population in that category of an estimated 2,534 individuals. During this same time period, “White, Non-Hispanic” was the only race/ethnicity category to decline in population with a net loss of -1.7% or -4,143 residents.

Hispanic Population

Based upon the significant growth rate of the Hispanic ethnicity in the Area, this group was selected for further analysis. The chart below titled “2016 Percentage of Ethnicity by Age” illustrates the Hispanic population by age as compared to aggregated populations of residents who identify as Non-Hispanic, regardless of race.

- As noted previously, the Hispanic population accounts for 11.7% of the Area population – 37,465 individuals. Individuals self-reporting as Non-Hispanic represent 88.3% of the population or 282,071 residents.
- The lowest percentages of the Hispanic population are found in the “55-64” and “65 and Over” age ranges, at 5.8% and 3.5% respectively. For individuals who are Non-Hispanic, the lowest percentage of population is found in the “15-19” years of age range, at 7.1%.

- The majority of the Hispanic population is 24 years of age or younger (52.1%) while the majority of those identified as Non-Hispanic are over the age of 34 (51.4%). Over 16% of Non-Hispanics have surpassed the presumed retirement age of 65; only 3.5% of Hispanics have reached that milestone. These data hold significant implication for the ethnic diversity of the future workforce in the Area. Many of those individuals self-identifying as Non-Hispanic have already begun to “age out” and will continue to age and exit the workforce at a higher rate, to be replaced by a greater representation of younger Hispanic employees.



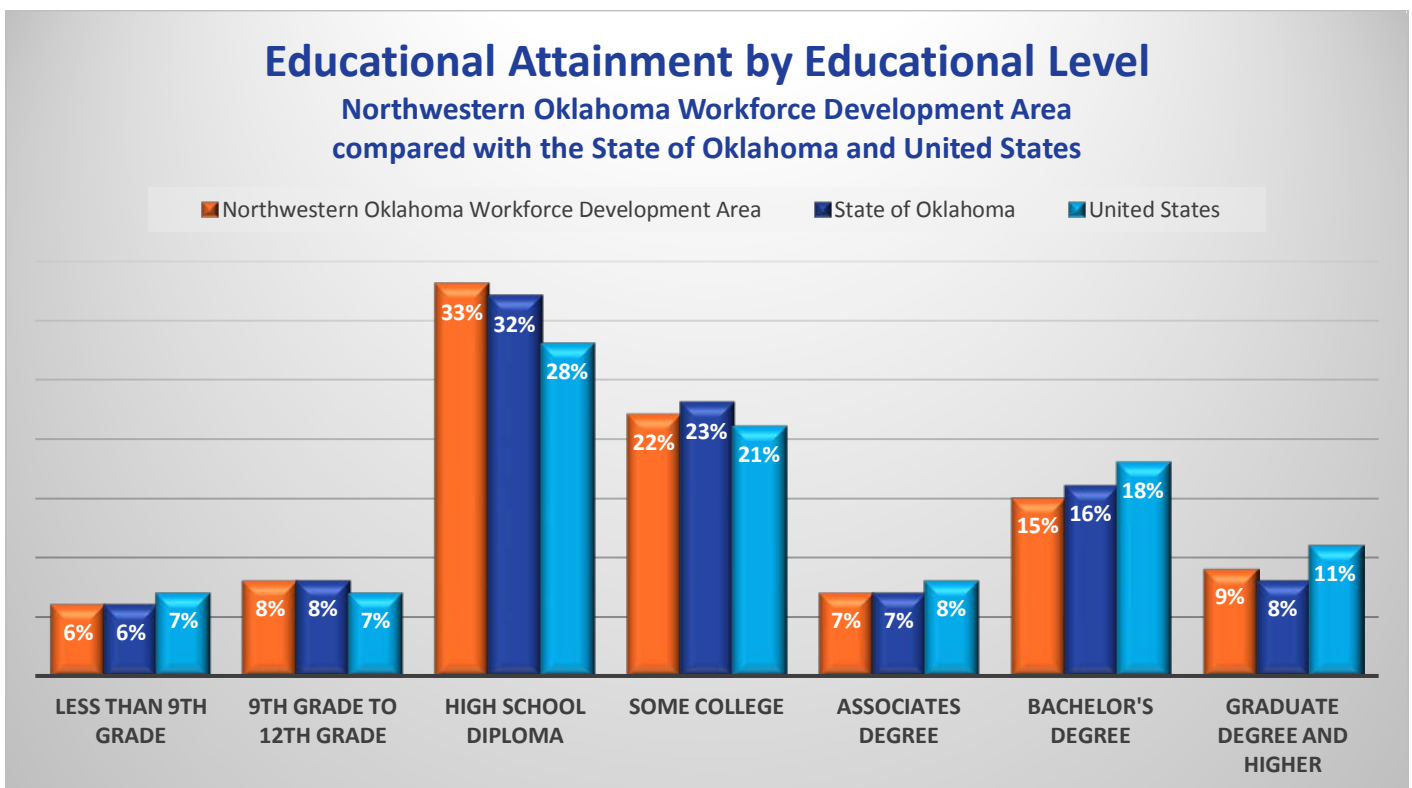
Source: EMSI 2017.1

- Another significant finding revealed through the age analysis pertains to Hispanic youth. Nearly 33% of all Hispanics residing in the Area are under the age of 15 and over 42.2% of Hispanics are 19 years of age or less. In comparison, only 25.7% of Non-Hispanics are 19 years of age or less. These are ages at which youth are presumably either preparing to enter, or are currently in, the K-12 education system. This differential will significantly alter the ethnic representation of academic cohorts. An examination of educational attainment data, provided later in this report, indicates that individuals who self-identify as Hispanic generally exhibit lower levels of educational attainment than those who indicate they are Non-Hispanic. Based upon these data, educators must be prepared to engage, mentor, and motivate an increased population of youths of Hispanic ethnicity to enhance educational outcomes, student success, and workforce preparation.

Educational Attainment

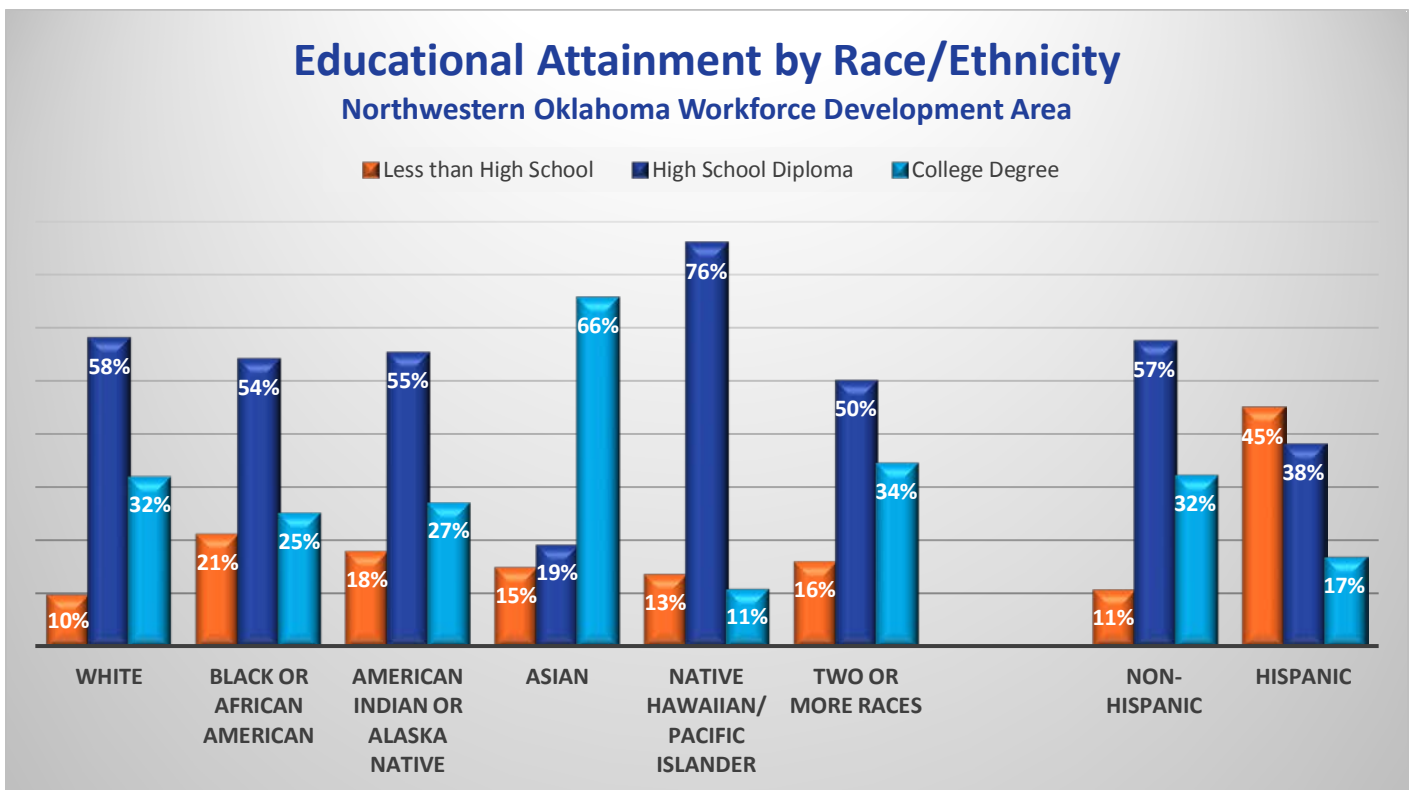
Data regarding educational attainment are gathered by the U.S. Census Bureau utilizing a variety of surveys. Census Bureau staff aggregate the data into seven educational attainment categories ranging from the completion of “Less than 9th Grade” up to the attainment of a “Graduate Degree or Higher.” Unfortunately, the scale currently in use fails to quantify those individuals who have achieved an educational award above the level of a high school diploma but below the attainment of an Associates Degree. This missing category is generally characterized by the completion of a career-specific vocationally associated certificate or an industry-recognized credential. The educational attainment levels, categorized utilizing the Census Bureau classifications, are discussed below and followed by two charts, “Educational Attainment by Education Level” and “Educational Attainment by Race/Ethnicity.”

- Educational attainment in the Northwestern Oklahoma Workforce Development Area is heavily centered in the areas of “High school diploma” and “Some College” with approximately 55% of all residents in the Area included in these two groups. Thirty-three percent of residents have earned a high school diploma while an additional 22% have attended some college without completing a degree.
- Eighty-six percent of Northwestern Oklahoma Workforce Development Area residents have attained a secondary or postsecondary credential – a high school diploma or higher. This level of educational attainment is equal to the the state and national averages.
- Over one half (53%) have participated in postsecondary education and 31% have completed a degree. This degree completion rate is equal to the state average, but substantially lower than the national average of 37%.



Source: EMSI 2017.1

- Race and ethnicity figure prominently in educational achievement. With reference to race, regardless of ethnicity, 31.8% of Area residents self-identifying as “White” report attaining a college degree; for individuals who report being “Black or African American” or “American Indian or Alaska Native,” the percentages drop to 25.2% and 27% respectively. The highest college degree completion rates are those of individuals who self-identify as Asian (65.6%), though it should be noted this racial category is extremely small, representing only 2% of the Area population.
- “Native Hawaiian or Pacific Islanders” exhibit the highest percentage of high school graduates at 75.9%. The “White” racial category ranks second at 58%.
- Only 9.6% of “White” Area residents did not complete high school while 21.1% of “Black or African American” residents reported the same educational level. This is a differential of 110%.
- The most significant educational attainment gap is revealed by an examination of data associated with ethnicity, particularly at the lower educational levels. Hispanics in the Area have failed to complete a high school diploma at a rate over four times that of Non-Hispanics. Nearly 45% of Area Hispanics possess an educational level of less than a high school diploma as compared with 10% for individuals of Non-Hispanic ethnicity; a 35 percentage point gap. At the high school graduate level, 57% of Non-Hispanics have received a diploma versus 38% of Hispanics. With regards to college completion, the percentage of Non-Hispanics who have attained a degree is nearly twice that of Hispanics, 32% versus 16.7%.

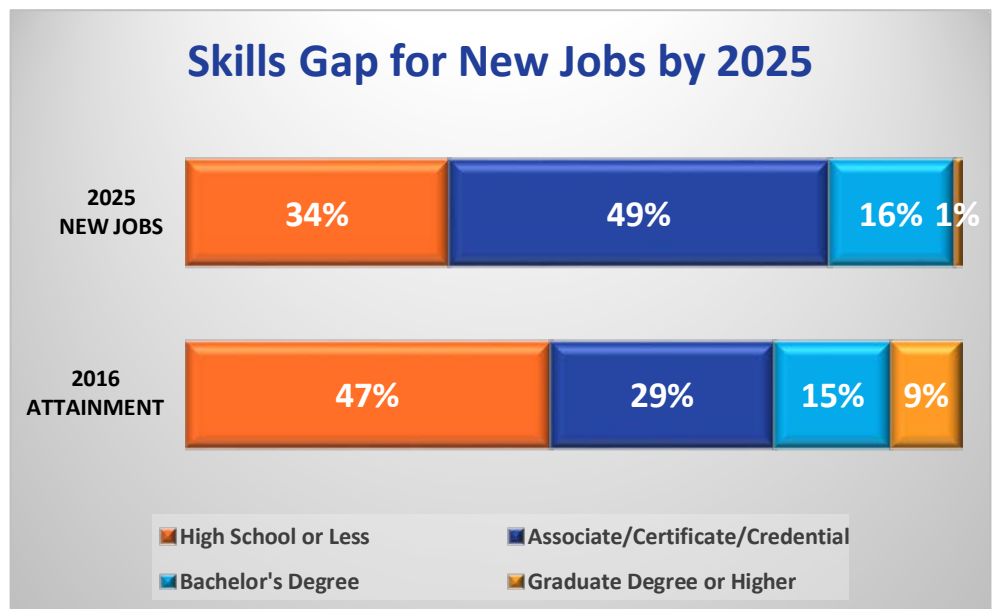


Source: EMSI 2017.1

Skills Gap

Building upon the educational attainment data presented previously, a skills gap analysis was completed. To achieve this analysis, the current level of educational achievement of Area residents was directly compared to the typical entry level of education required by newly created jobs projected to develop between 2016 and 2025. The included chart, “Skills Gap for New Jobs by 2025,” illustrates the educational gap(s) identified.

- By 2025, 49% of all newly created jobs in the Area will require the completion of postsecondary training (certificate or some college) or an Associates Degree. Currently only 29% of individuals in the Area have achieved this educational level. Conversely, only 34% of newly created jobs will require a high school diploma or less while 47% of Area residents have achieved this level. In short, there is an excess supply of individuals with a high school diploma or less and a shortage of individuals to meet the needs of employers at the postsecondary and Associates Degree level – a 20 percentage point skills gap. Based upon projected population growth rates for 2025 and applying current graduation rates, an estimated minimum of 38,700 additional Area residents must obtain some level of postsecondary credential to meet employer needs. This estimate is compounded when factoring in the anticipated need for individuals with even higher educational levels discussed below.
- Only one percent of newly created jobs by 2025 will require a Graduate Degree or Higher (Masters, Doctoral or Professional Degree). With 9% of the Area population currently holding a degree at one of those levels, the Area should be well positioned to meet any employer needs that may arise by 2025.
- Sixteen percent of new jobs created by 2025 will require the attainment of a Bachelor’s Degree. Currently, 15% of the population of the Northwestern Oklahoma Workforce Development Area possess this level of education. While it appears these data illustrate a minor skills gap of only one percentage point, this surface analysis may significantly underestimate the continued need for the attainment of a Bachelor’s Degree. Two key factors directly impact the analysis. The first is variability. The projected need for positions in the future is by definition an estimate which will certainly change as workforce demand evolves over a 9-year time frame. Any margin of error in the prediction model would most probably necessitate a greater need for Bachelor’s Degrees than the current, calculated one percentage point deficit. The second factor important to any analysis of the need for this level of educational attainment is the possibility of a misalignment between degree specialties and employer need. The existence of a sufficient number of individuals with Bachelor’s Degrees fails to meet the needs of employers if those degrees do not provide the appropriate training necessary to fulfill job requirements. As a result of these two factors, it must be considered that the need for individuals who have attained a Bachelor’s Degree by 2025 should be greater than the current one percentage point estimated increase.



Source: EMSI, 2017.1

Educational Assets

Colleges, Universities, and CareerTechs are instrumental in developing the workforce of the Northwestern Oklahoma Workforce Development Area. The Area is home to several institutions which help supply local businesses and organizations with a workforce that has the necessary labor and skills to be competitive in today's economy.

CareerTechs.

Northwestern Oklahoma Workforce Development Area is home to seven CareerTech institutions with a total of 10 locations:

- **Autry Technology Center** (Three Enid campuses: Willow Run, Woodring, and Willow)
- **Central Technology Center** (Drumright)
- **Chisholm Trail Technology Center** (Omega)
- **High Plains Technology Center** (Woodward)
- **Meridian Technology Center** (Stillwater)
- **Northwest Technology Center** (Alva and Fairview)
- **Pioneer Technology Center** (Ponca City)

Source: CareerTech.org

Colleges and Universities.

There are five colleges and universities in the Area with nine campus locations:

- **Northern Oklahoma College** (3 campuses: Enid, Stillwater, and Tonkawa)
- **Northwestern Oklahoma State University** (3 campuses: Alva, Enid, and Woodward)
- **Oklahoma Panhandle State University** (Goodwell)
- **Oklahoma State University** (Stillwater)
- **University Center at Ponca City** (Ponca City)

Source: Oklahoma State Regents of Higher Education

Commuter Data

The U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD) program uses data from a variety of sources including the unemployment insurance program, Quarterly Census of Employment and Wages (QCEW), and administrative data from censuses and surveys to create models estimating worker commutes for employment.

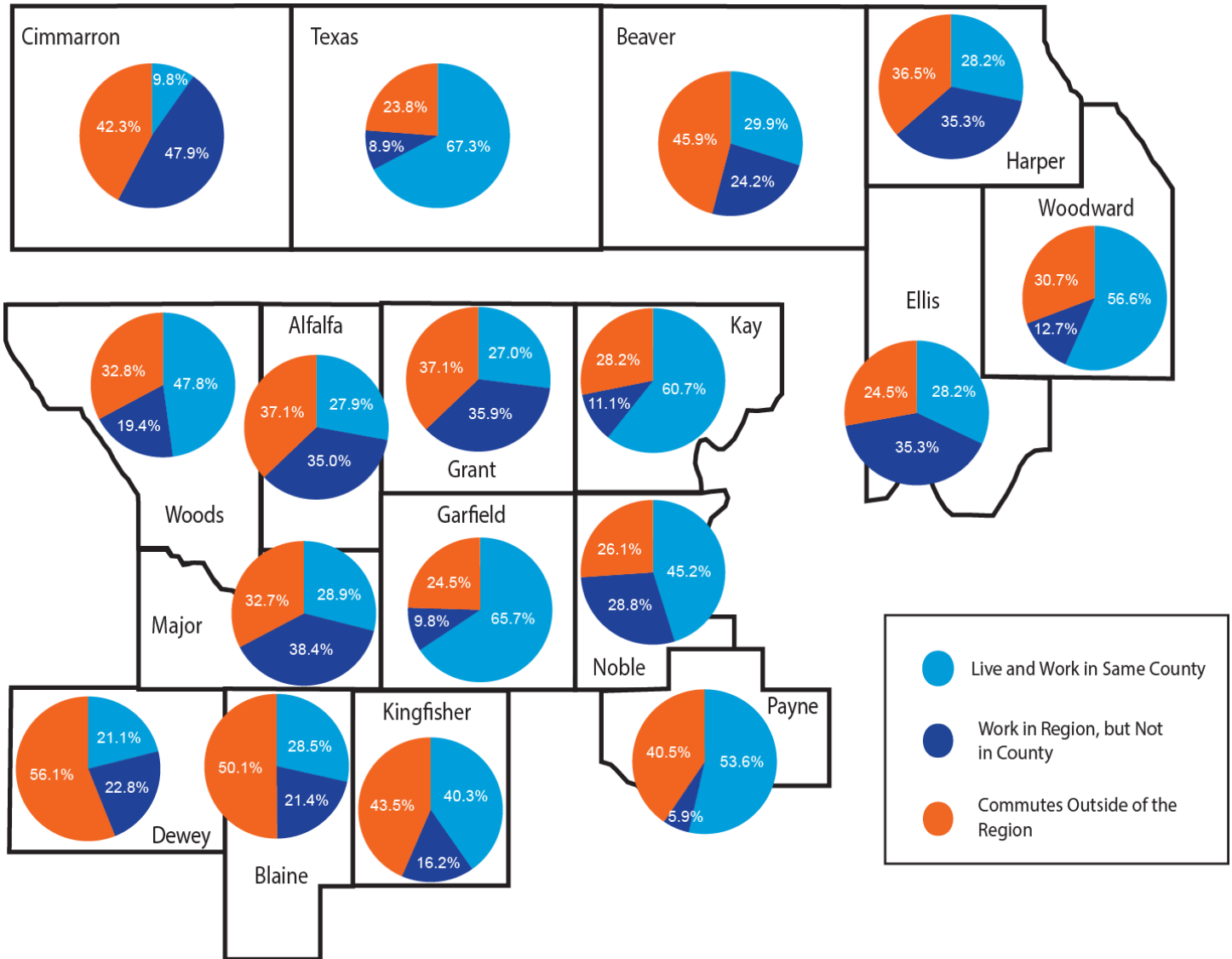
According to these models:

- Over 66% of Northwestern Oklahoma Workforce Development Area residents remain in the Area for employment; 33.6% commute outside the Area. The most common destinations for those who work outside the Area are Liberal, Kansas, and Oklahoma City.
- Five of the 17 counties in the Area retain the majority of their residents for local employment. Predictably, these five counties are home to the five largest cities in the region, providing the density of job opportunities needed to deter inter-county commuting. A summary of employment in each of these counties is included below.

- Texas County: Sixty-seven percent of Texas County residents live and work in the county; over half of those work in the county seat of Guymon. Significant employers in Texas County include Seaboard, Hitch, and Oklahoma Panhandle State University, as well as local healthcare and education providers.
- Garfield County retains 65.7% of its residents, most employed in Enid, the home of Vance Air Force Base. Examples of large employers in Garfield County include medical/nursing facilities (Integris, St Mary's Hospital and the Methodist Home of Enid), Marsau Enterprises, Koch Fertilizer, and Walmart.
- Kay County retains 60.7% of its employed residents. Ponca City is the largest source of jobs in the county with large employers such as Phillips 66, Dorada Foods, and Schlumberger. Though smaller, the cities of Tonkawa and Newkirk also offer many opportunities for employment to county residents, including Northern Oklahoma College in Tonkawa and two gaming casinos in Newkirk.
- Over 56% of Woodward County residents remain in that county for employment; 44% work in the city of Woodward. Large employers in Woodward include Alliance Health, Walmart, and Patterson UTI. Additional employment opportunities within the county are centered in Fort Supply at the state correctional facility and the Northwest Center medical facility.
- Payne County retains 53.55% of its residents for employment, predominantly in the county seat of Stillwater. Major employers offering opportunities to county residents include Oklahoma State University, Stillwater Medical Center, the Environmental Quality Department (state government), and Walmart. Additional significant employment opportunities are available in the city of Cushing, including Walmart, Cimarron Correctional Facility, Hillcrest Hospital, and Ambers Pipeline.
- Cimarron County, located in Oklahoma's "Panhandle" region, retains the smallest percentage of residents working in the county at 9.8%. As noted previously, Cimarron possesses the lowest population of any county in the Area at 2,164 residents as well as the lowest population density at only 2 persons per square mile of Area. Boise City, population approximately 1,100, offers the greatest opportunity for employment in the county, though businesses located in that town are considered small (less than 50 workers) to medium (50-250 workers) in size.

Over 20% of Cimarron County residents commute to neighboring Texas County for employment in the city of Guymon. Another 9.2% cross the state border for broader employment opportunities in Liberal/Seward County, Kansas. A comparison of average annual wages in the three counties reveals additional incentive for Cimarron County residents to commute for employment. While the average annual wage for a Cimarron County worker is \$38,352, Seward County, Kansas reports average wages of \$43,983, a 14.6% increase. Texas County average annual wages are slightly higher at \$44,163 – 15.2% above the average wage available in Cimarron County.

- Over one half of workers in Blaine (50.1%) and Dewey (56.1%) Counties commute outside the Northwestern Oklahoma Workforce Area for employment. The most common destination outside the Area for workers of these two counties is Oklahoma City.
- For fourteen of the seventeen Area counties, residents who work outside the Area are most commonly employed in Oklahoma City. Given the extreme distances between some of these counties and the Oklahoma City metropolitan area, it must be acknowledged that the term "commuting" can no longer be strictly defined as physical relocation for employment. Rather, this data more likely demonstrates the growing trend of telework for individuals living in remote, rural locations.



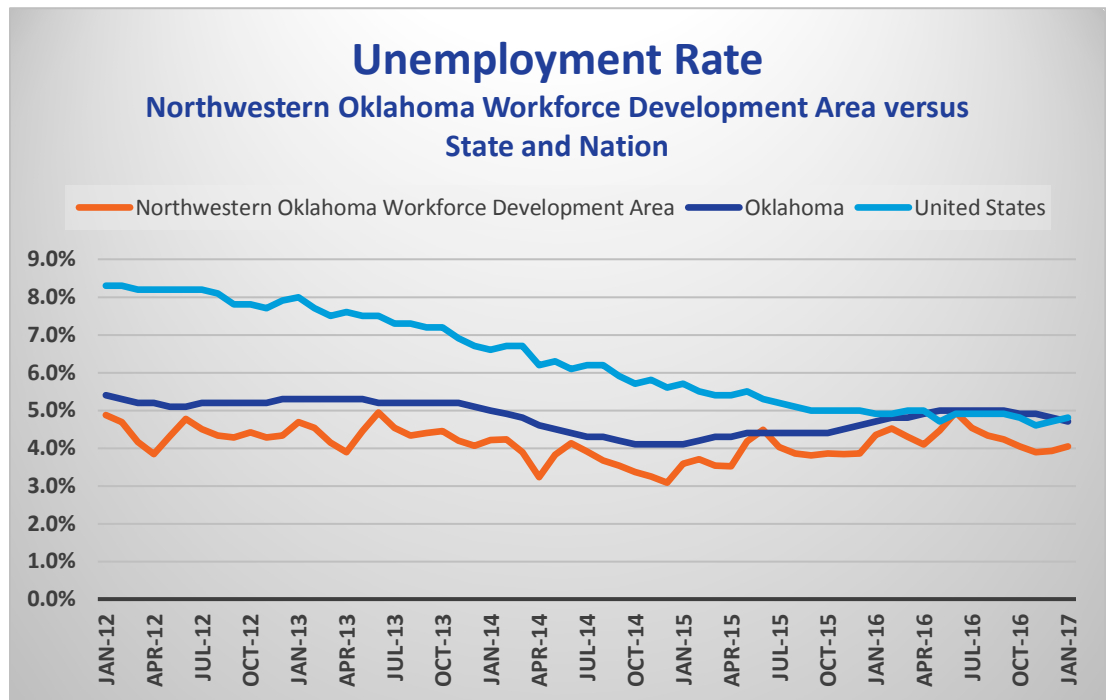
Source: U.S. Census Bureau Longitudinal Employer-Household Dynamics (LEHD)

Unemployment Rate

The term “unemployment” refers to individuals who are counted as participating in the labor force, but are not employed. This eliminates consideration of individuals who do not participate in the labor force such as individuals who are unable to work due to a disability, retirees, and individuals who may consciously *choose* not to work such as students. As a result, the unemployment rate cited focuses on individuals seeking, but not attaining, employment.

For this analysis, the average unemployment rates of individuals living in Northwestern Oklahoma Workforce Development Area were compared to the average unemployment rates of the state of Oklahoma as a whole, and the nation, over a span of 5 years from January 2012 to January 2017.

- Between January 2012 and January 2017, the unemployment rate in the Area consistently trended below the statewide average. During this time period, the state and national rates varied only minutely – by no more than 0.5% in the short term – resulting in a relatively smooth trend line. Conversely, the unemployment rates for the Area experienced significant variation in short time periods, producing sharp peaks and valleys in the trend line.



Source: Bureau of Labor Statistics, Local Area Unemployment Statistics (BLS LAUS)

As an example, between April 2012 and June 2012, the rate increased from 3.8% to 4.8% -- a 1.0 percentage point variance across three months – then dropped back to 4.3% in August of the same year.

- In June 2016, the unemployment rates of the Area, the state, and the nation all converged at approximately 5.0%. Between April 2016 and January 2017, the state and national rates remained steady while the Area rate continued to decline.
- During the five-year span examined, the unemployment rate for the Area peaked at 4.9% in January 2012, and again in June 2013 and June 2016. It reached its lowest level of 3.1% in December 2014. Between October 2016 and January 2017, the Area unemployment rate has stabilized at approximately 4%. Projections for February and March 2017 indicate a further decline in the unemployment rate, possibly as low as 3.6%.

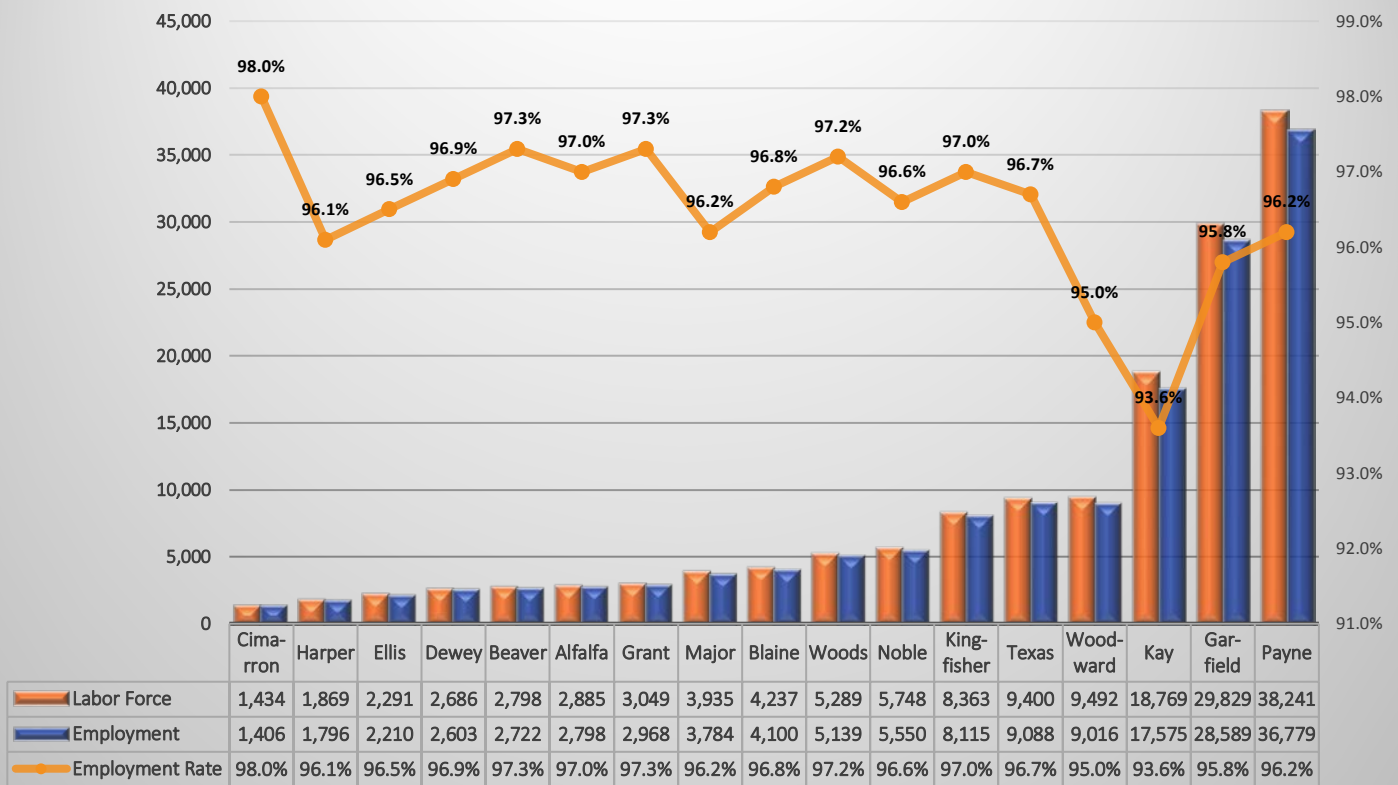
Total Employment by County

In contrast to the unemployment rates discussed previously, this report section focuses on the number and percentage of individuals in the Northwestern Oklahoma Workforce Development Area who were *employed*. Employment data are cited for January 2017.

- In January 2017, 150,315 Area residents participated in the labor force with 144,238 reporting employment, resulting in an Area-wide employment rate of 95.96%. This employment rate is higher than that of both the state (95.3%) and the nation (95.2%).

- The employment rates for the majority of Area counties cluster between 96% and 97.2%. Cimarron County exhibits the highest employment rate in the Area of 98.0%, despite being the smallest county in population, the least densely populated county, and the county with the greatest percentage of commuters traveling outside the county for employment. This is not a unique characteristic limited only to the January 2017 data. Rather, Cimarron County has consistently trended the highest employment rates in the Area over the past five years, averaging 97.22%.
- In contrast to Cimarron County, Kay County, with the third largest labor force, experienced the lowest employment rate at 93.6% in January 2017. Further examination of the trending of employment rates for the counties in the Area reveals that Kay County traditionally trends approximately 2 percentage points below the remaining Area counties. Over the five-year span between January 2012 and January 2017, Kay County averaged 93.65% employment versus the Area employment rate for the same time period of 95.89%.

Total Employment in Northeast Oklahoma Workforce Development Area by County, January 2017



Source: Bureau of Labor Statistics Local Area Unemployment Statistics

Top Employment Sectors

The following list outlines the top 10 sectors in the Area in number of jobs reported in 2016. *Government* is the top sector, offering approximately 35,700 job for Area residents, while *Retail Trade* ranks second. It is interesting to note the significant gap between the first- and second-ranked sectors. *Retail Trade* employment opportunities represent less than one-half as many as the *Government* sector, accounting for a total of 15,005 jobs. The tenth-ranked sector in the region is *Wholesale Trade*, with a total of 4,118 jobs; only 11.5% as many as offered by the top-ranking *Government* sector. Overall, the top 10 employment sectors represent 113,351 jobs, 77.1% of all jobs reported in Northwest Oklahoma Workforce Development Area in 2016.

NAICS Sector Group	Sector	2016 Jobs
90	Government	35,699
44	Retail Trade	15,005
62	Health Care and Social Assistance	11,734
72	Accommodation and Food Services	11,394
31	Manufacturing	9,703
21	Mining, Quarrying, and Oil and Gas Extraction	7,563
23	Construction	7,291
11	Crop and Animal Production	5,972
81	Other Services (except Public Administration)	4,872
42	Wholesale Trade	4,118

Source: EMSI 2017.1

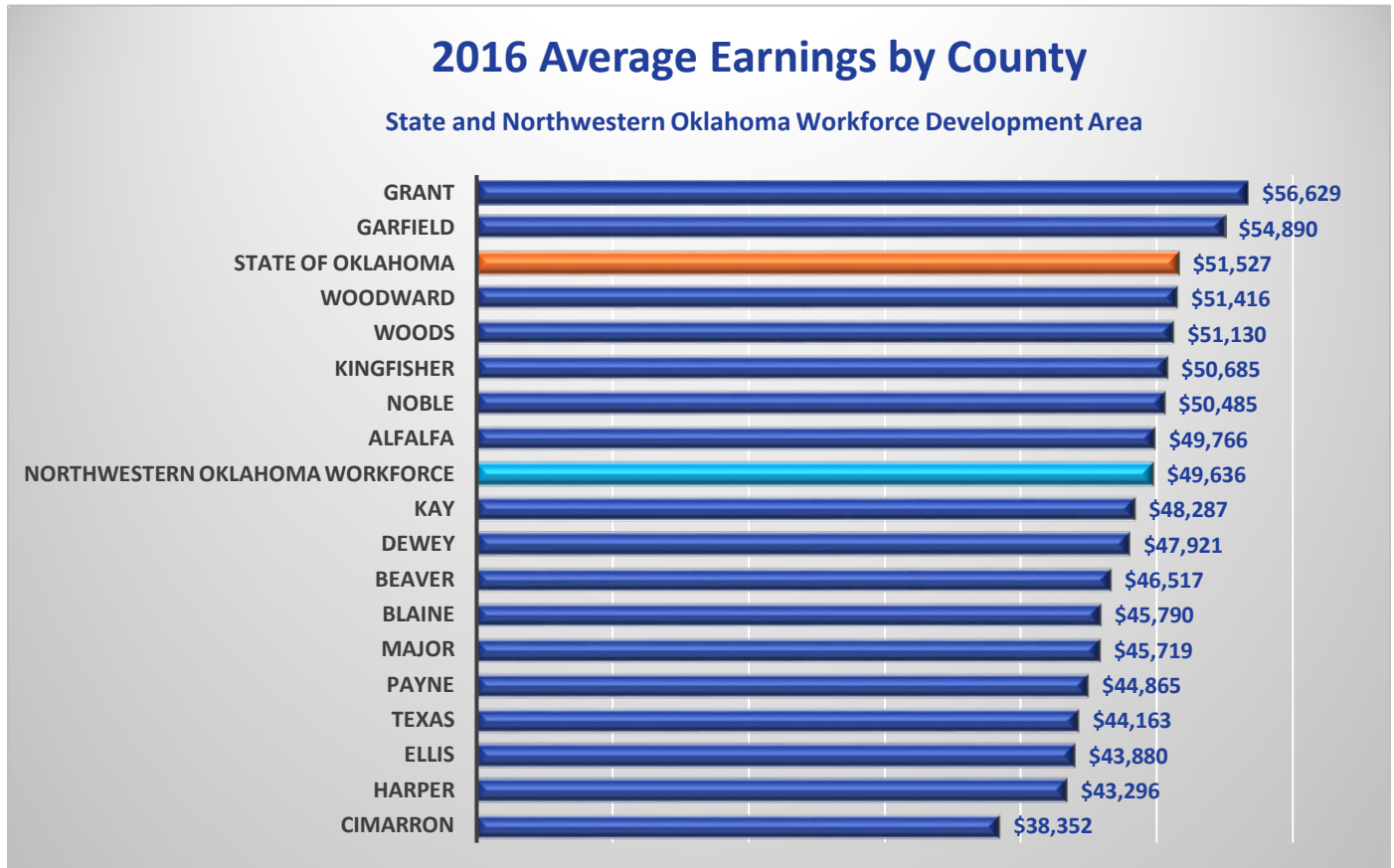
Average Earnings by County

The chart titled “2016 Average Earnings by County,” located immediately following this analysis, illustrates average annual earnings for the 17 Area counties as well as the Area average and Oklahoma statewide average. A comparison of these data reveal the following:

- The average annual earnings for the Area as a whole are \$49,636. In comparison, the state of Oklahoma average earnings were reported at \$51,527, a 3.8% differential.
- Two Area counties exceed the state average: Grant and Garfield. Grant County ranks highest in annual earnings at \$56,629. Garfield ranks second with \$54,890 average annual earnings. The earnings for seven counties exceed the Area average. No single county disproportionately impacts the Area average, a circumstance which is often experienced by regions containing large, high-wage metropolitan areas.
- Despite being the largest county in both population and labor force, Payne County ranks thirteenth in earnings, falling well below both the Area and state averages. At \$44,865 annually, Payne County earnings are 9.6% below the Area average and 12.9% below the state average. Contributing to this circumstance is a large number of jobs in economic sectors with low to moderate salaries. Approximately one out of every three jobs in Payne County are

associated with sectors such as *Accommodation and Food Services, Retail Trade, Educational Services or Other Services (except Public Administration)* with average wages ranging from \$16,000 to \$28,000 annually.

- Cimarron County reports the lowest annual earnings at \$38,352. This wage is 22.7% below the Area average and 25.6% below the state average. When a direct comparison is made between Cimarron County and Grant County, the differential is 47.7%; workers in Grant County average nearly 1.5 times the salary earned by Cimarron County workers each year.



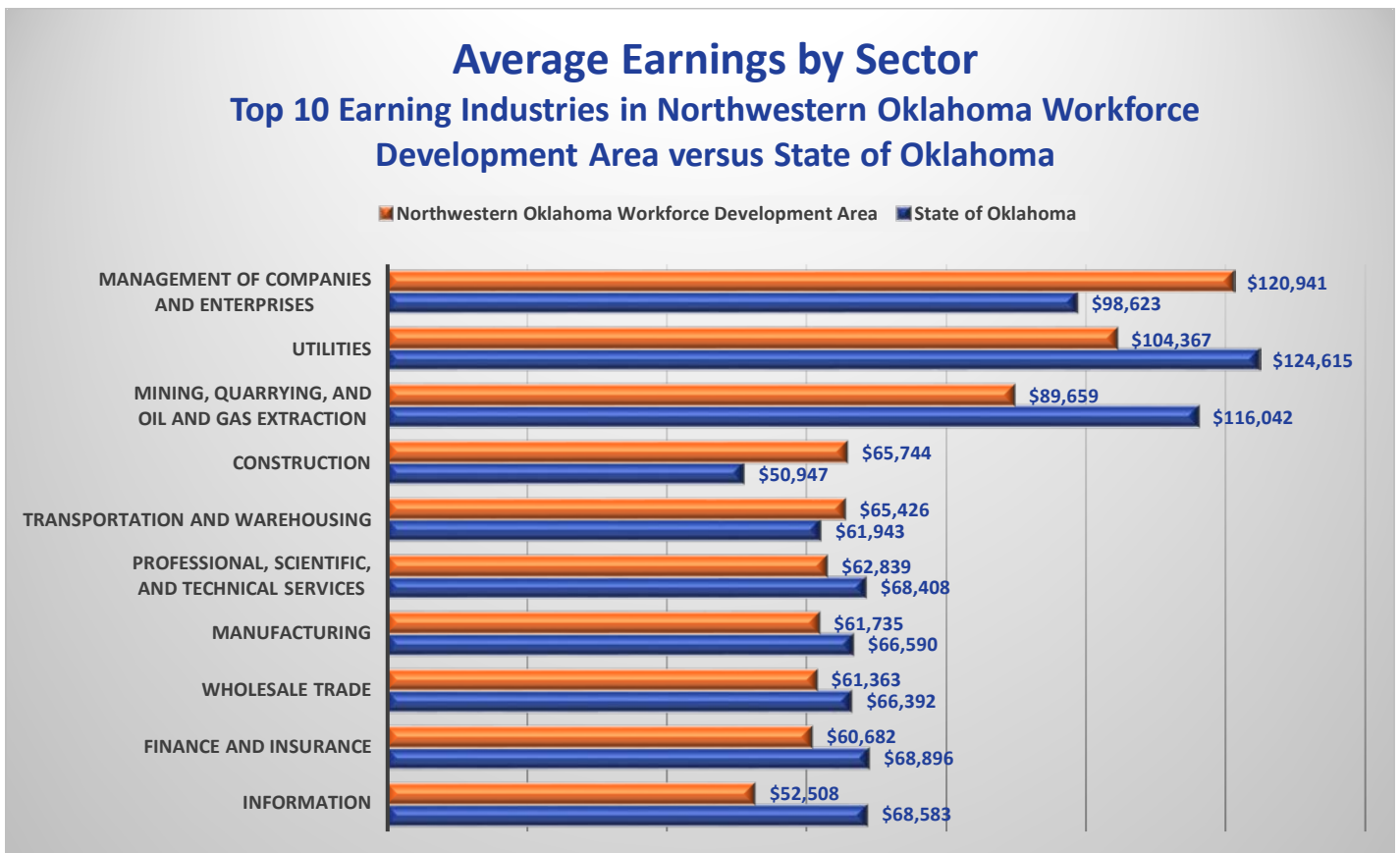
Source: EMSI 2017.1

Average Earnings by Sector

Annual employee earnings, averaged by employment sector, are examined in this section of the report. A chart, titled “Average Earnings by Sector, Top 10 Industries in Northwestern Oklahoma Workforce Development Area versus State of Oklahoma,” follows the analysis.

- The average earnings for seven of the top 10 sectors in the Northwestern Oklahoma Workforce Development Area are below the average earnings for the same sector statewide. The greatest disparity in earnings is found in the *Mining, Quarrying, and Oil and Gas Extraction* sector which exhibits a 29.4% gap between earnings in the Area and the statewide average. The smallest differential in earnings is found in the *Professional, Scientific, and Technical Services* sector, a difference of 8.8%.

- Three of the top 10 Area sectors report average earnings greater than the state average. These include *Management of Companies and Enterprises*; *Construction*; and *Transportation and Warehousing*.
- The *Management of Companies and Enterprises* sector reports higher average earnings than any other sector in the Area at \$120,941. This is 22.6% above the statewide average for the same sector of \$98,623.
- Despite ranking highest in overall numbers of individuals employed, *Government* fails to rank in the top 10 earnings for the Area. Earnings for this sector rank eleventh at \$49,345 annually. Likewise, the *Retail Trade* sector ranks second in employment, providing 15,005 jobs in the Area, but fails to appear on the top 10 earnings list. Average annual earnings for the *Retail Trade* sector are only \$29,985. Overall, six of the sectors included on the list of top 10 based upon the number of jobs available fail to appear on the list of the top 10 earning sectors. These six industries, employing residents at low to moderate wages, represent over 62% of the jobs available in the Area.
- *Direct Life Insurance Carriers*, an industry included in the *Finance and Insurance* sector, reports the highest average earnings in the Area at \$164,052 annually. *Securities Brokerage*, also included in the *Finance and Insurance* sector, ranks second with an average wage of \$162,736 annually. It should be noted that the *Direct Life Insurance Carriers* industry provides limited opportunities for employment, with only 15 jobs in the Area in 2016. The *Securities Brokerage* industry reports broader opportunities for employment with 105 jobs in the Area in 2016.



Source: EMSI, 2017.1

Top Occupations by Number of Jobs

This analysis examines the prevalence of job classifications in the Northwestern Oklahoma Workforce Development Area. A table summarizing the top 10 occupations by number of jobs follows the analysis.

- The top 10 occupations represent 31,531 jobs; 23.4% of the total jobs reported in the Area.
- The most prevalent job in the Area is *Cashier*. In 2016, 4,110 jobs existed in this classification with a median hourly wage of \$9.22. *Retail Salespersons* is the second-ranked occupation with 3,482 reported jobs and median hourly earnings of \$9.72.
- With regard to educational requirements, seven of the top 10 occupations require the completion of a high school diploma or less, generally in combination with some level of on-the-job training. The classification of *Heavy and Tractor-Trailer Truck Drivers* requires a postsecondary nondegree award and *General and Operations Managers* requires the completion of a Bachelor's degree. A Doctoral or professional degree is necessary to obtain the position of *Postsecondary Teacher*.
- The most new jobs created in the Area by 2025 will be in the *Combined Food Preparation and Serving Workers, Including Fast Food* category which is expected to increase by 651, a growth rate of 18.9%. *Postsecondary Teachers* is the only job classification in the top 10 to decrease in employment, with an anticipated loss of -396 jobs.

Occupation	2016 Jobs	2025 Jobs	Change	Median Hourly Earnings	Education or Experience Level
Cashier	4,110	4,434	324	\$9.22	Short-term on-the-job training
Retail Salespersons	3,482	4,037	555	\$9.72	Short-term on-the-job training
Combined Food Preparation and Serving Workers, Including Fast Food	3,445	4,096	651	\$9.23	Short-term on-the-job training
Heavy and Tractor-Trailer Truck Drivers	3,269	3,899	630	\$20.38	Postsecondary nondegree award
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	3,218	3,224	6	\$13.64	Short-term on-the-job training
Office Clerks, General	3,107	3,130	23	\$11.73	Short-term on-the-job training
Postsecondary Teachers	3,040	2,644	-396	\$28.49	Doctoral or professional degree
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	2,951	3,545	594	\$16.17	Short-term on-the-job training
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,591	2,971	380	\$9.80	Short-term on-the-job training
General and Operations Managers	2,318	2,634	316	\$35.25	Bachelor's degree

Source: EMSI, 2017.1

Top Paying Occupational Groups

For this analysis, individual occupations are aggregated and reported by Standard Occupational Classification (SOC) major group. The table that follows highlights the top paying occupational groups by median hourly earnings.

- The top ten occupational groups include 49,236 individual jobs; 36.5% of the total jobs reported in the Northwestern Oklahoma Workforce Development Area.
- *Architecture and Engineering Occupations* earn the highest median hourly wage in the Area at \$34.55. This wage is 4.7% below the Oklahoma statewide median hourly earnings for the same occupational group. While the wages are high for these positions, the number of jobs are limited with only 2,054 reported in 2016. When the occupational groups are examined by the number of jobs represented, Architecture and Engineering ranks 19th out of 24.
- The third-ranked *Legal Occupations* provides high regional median hourly earnings of \$30.94 but again, employment opportunities are limited with 597 total positions available in the Area in this occupational category.
- *Construction and Extraction Occupations* are ranked 10th in the Area with median hourly earnings of \$18.76. This salary is 2.7% below the state average and 45.7% below the top-ranked *Architecture and Engineering Occupations* salaries.
- The top three occupational groups in the Area, ordered by the number of jobs represented, are *Office and Administrative Support Occupations* (19,793 jobs), *Food Preparation and Serving Related Occupations* (12,301 jobs), and *Sales and Related Occupations* (11,991 jobs). While these three major occupational groups represent 44,085 jobs or 32.7% of the total jobs in the Area, none are on the top paying group list due to low median salaries ranging from \$9.50 to \$13.90 per hour.

SOC Code Group	Occupation Group	2016 Jobs	Regional Median Hourly Earnings	State Median Hourly Earnings
17-0000	Architecture and Engineering Occupations	2,054	\$34.55	\$36.27
11-000	Management Occupations	7,248	\$34.44	\$38.34
23-000	Legal Occupations	597	\$30.94	\$34.89
29-0000	Healthcare Practitioners and Technical Occupations	5,648	\$25.91	\$30.46
15-0000	Computer and Mathematical Occupations	1,660	\$25.60	\$29.70
13-0000	Business and Financial Operations Occupations	3,793	\$24.00	\$27.26
19-0000	Life, Physical, and Social Science Occupations	1,744	\$21.68	\$28.02
25-0000	Education, Training, and Library Occupations	10,120	\$19.94	\$18.53
49-0000	Installation, Maintenance, and Repair Occupations	6,474	\$18.86	\$19.53
47-0000	Construction and Extraction Occupations	9,898	\$18.76	\$19.29

Source: EMSI, 2017.1

Ecosystems Impact on Occupations and Salaries

Oklahoma has identified five key, in demand, industry clusters known as “ecosystems” which provide the state with a competitive advantage in a global economy. They exhibit significant potential for employment growth and provide wealth generating employment opportunities. The five key ecosystems’ demand industries produce or provide similar goods and services and therefore have similar needs in workforce, infrastructure, and economic development policy. These ecosystems include Aerospace and Defense, Agriculture and Biosciences, Energy, Information and Finance, and Transportation and Distribution.

In addition to the five statewide ecosystems, four localized complimentary ecosystems important to regional economies have been identified, including Construction, Education, Health Care, and Manufacturing. A summary table of ecosystem data pertinent to the Area is provided for ease of ecosystem comparison, followed by an analysis of each individual key and complimentary ecosystem.

Ecosystem Comparison Northwestern Oklahoma Workforce Development Area				
Ecosystem	Estimated Net Job Growth (2016-2025)	Ecosystem Growth Rate (2016-2015)	Average Annual Earnings	Comments
Aerospace and Defense	324	6.4%	\$59,637	
Agriculture and Bioscience	2,238	18.6%	\$53,628	Second highest number of new jobs created.
Energy	1,960	17.0%	\$69,824	Highest salary.
Information and Financial Services	680	11.9%	\$64,726	Second highest salary.
Transportation and Distribution	1,417	20.2%	\$62,386	Second highest growth rate.
Construction	3,115	21.1%	\$50,522	Highest rate of growth. Most new jobs created.
Education	-1,330	-6.9%	\$49,062	Largest employing ecosystem.
Health Care	1,386	9.7%	\$47,172	
Manufacturing	225	4.7%	\$61,735	

Aerospace and Defense.

In 2016, there were approximately 5,000 jobs in the Aerospace and Defense Ecosystem in the Area with average annual earnings per job of \$59,637. By 2025, employment within this ecosystem is projected to grow to nearly 5,300. While projections indicate that 430 new jobs will be created, 18 occupational categories are expected to experience a decrease in demand resulting in a loss of 106 positions. Overall, employment within the ecosystem will increase by a net 324 jobs, a growth rate of 6.4%.

The list below, ordered alphabetically by occupation, highlights a few of the occupations employed by industries within the Aerospace and Defense Ecosystem in the Area. It should be noted that these positions are not limited to employment within the Aerospace and Defense Ecosystem, but rather, may be in demand by many other sectors, industries, and ecosystems across the state.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
17-2051	Civil Engineers	\$35.89	Bachelor's degree
15-1151	Computer User Support Specialists	\$17.80	Some college, no degree
17-3023	Electrical and Electronics Engineering Technicians	\$21.56	Associates degree
51-1011	First-Line Supervisors of Production and Operating Workers	\$28.03	Less than 5 years experience
11-1021	General and Operations Managers	\$35.25	Bachelor's degree
49-9041	Industrial Machinery Mechanics	\$23.96	Long-term on-the-job training
51-4041	Machinists	\$16.74	Long-term on-the-job training
17-2141	Mechanical Engineers	\$36.46	Bachelor's degree
51-2092	Team Assemblers	\$14.17	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	\$17.91	Moderate-term on-the-job training

Source: EMSI, 2017.1

Agriculture and Bioscience.

In 2016, there were 12,055 jobs in the Agriculture and Bioscience Ecosystem in Northwestern Oklahoma Workforce Development Area with average annual earnings per job of \$53,628. By 2025, employment within this ecosystem is projected to grow to approximately 14,300 jobs. Thirteen job classifications are projected to lose 15 total positions while 2,253 new positions are created. As a result, employment within the ecosystem will increase by a net 2,238 jobs, a growth rate of 18.6%.

The list below, ordered alphabetically by occupation, highlights some of the occupations employed by industries within the Agriculture and Bioscience Ecosystem in the Area. These positions are not limited to employment within this particular ecosystem, but rather, may be in demand by many other sectors, industries, and ecosystems across the state.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
45-2091	Agricultural Equipment Operators	\$16.55	Short-term on-the-job training
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$14.25	Some college
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$25.55	5 years or more experience
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	\$16.17	Short-term on-the-job training
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$35.79	Less than 5 years experience
51-1011	First-Line Supervisors of Production and Operating Workers	\$28.03	Less than 5 years experience
11-1021	General and Operations Managers	\$35.25	Bachelor's degree
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$20.38	Postsecondary nondegree award
51-3023	Slaughters and Meat Packers	\$10.45	Short-term on-the-job training
29-1131	Veterinarians	\$33.90	Doctoral or professional degree

Source: EMSI, 2017.1

Energy.

In 2016, there were over 11,500 jobs in the Energy Ecosystem in Northwestern Oklahoma Workforce Development Area with average annual earnings per job of approximately \$69,824, the highest average earnings of any key or complimentary ecosystem in the Area. By 2025, employment within this ecosystem is projected to grow to 13,540. While projections indicate that approximately 2,017 new jobs will be created, 23 occupational categories are expected to experience a decrease in demand, resulting in the loss of 57. As a result, employment within the ecosystem will increase by an estimated net 1,960 jobs; a growth rate of 17.0%.

The list below, ordered alphabetically by occupation, highlights a few of the occupations employed by industries within the Energy Ecosystem in the Area. It should be noted that these positions are not limited to employment within this ecosystem, but rather, may be in demand by many other sectors, industries, and ecosystems across the state.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
49-9051	Electrical Power-Line Installers and Repairers	\$23.06	Long-term on-the-job training
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$29.59	5 years or more experience
11-1021	General and Operations Managers	\$35.25	Bachelor's degree
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$20.38	Postsecondary nondegree award
49-9041	Industrial Machinery Mechanics	\$23.96	Long-term on-the-job training
47-2073	Operating Engineers and Other Construction Equipment Operators	\$18.42	Moderate-term on-the-job training
17-2171	Petroleum Engineers	\$56.54	Bachelor's degree
47-5071	Roustabouts, Oil and Gas	\$16.46	Moderate-term on-the-job training
47-5013	Service Unit Operators, Oil, Gas, and Mining	\$21.62	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	\$17.91	Moderate-term on-the-job training

Source: EMSI, 2017.1

Information and Financial Services.

In 2016, there were over 5,700 jobs in the Information and Financial Services Ecosystem in the Area; by 2025, that figure is expected to increase to 6,397. Average annual earnings per job are \$64,726. While projections indicate that 744 new jobs will be created, six occupational categories are expected to experience a decrease in demand, resulting in the loss of 64. As a result, employment within the ecosystem is projected to increase by a net 680 jobs, a growth rate of 11.9%.

The list below, ordered alphabetically by occupation, highlights some of the occupations employed by industries within the Information and Financial Services Ecosystem in the Area. It should be noted that these positions are not limited to employment within the Information and Financial Services Ecosystem, but rather, may be in demand by many other sectors, industries, and ecosystems across the state.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
13-2011	Accountants and Auditors	\$22.47	Bachelor's degree
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$14.25	Some college, no degree
15-1151	Computer User Support Specialists	\$17.80	Some college, no degree
43-4051	Customer Service Representatives	\$11.90	Short-term on-the-job training
11-3031	Financial Managers	\$42.26	Bachelor's degree
11-1021	General and Operations Managers	\$35.25	Bachelor's degree
43-4131	Loan Interviewers and Clerks	\$14.87	Short-term on-the-job training
13-2072	Loan Officers	\$28.51	Bachelor's degree
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	\$21.32	Postsecondary nondegree award
43-3071	Tellers	\$11.82	Short-term on-the-job training

Source: EMSI, 2017.1

Transportation and Distribution.

In 2016, there were 7,025 jobs in the Transportation and Distribution Ecosystem in Northwestern Oklahoma Workforce Development Area with average annual earnings per job of approximately \$62,386. By 2025, employment within this ecosystem is projected to increase to over 8,400. While projections indicate that approximately 1,439 new jobs will be created, 18 occupational categories are expected to experience a total decrease in demand of 22 jobs. As a result, employment within the ecosystem is projected to increase by a net 1,417 jobs, a growth rate of 20.2%.

The list below, arranged alphabetically by occupation, highlights a few of the occupations employed by industries within the Transportation and Distribution Ecosystem in the Area. It should be noted that these positions are not limited to employment within this particular ecosystem, but rather, may be in demand by many other sectors, industries, and ecosystems across the state.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
43-3031	Bookkeeping, Accounting, and Auditing Clerks	\$14.25	Some college, no degree
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	\$18.99	Long-term on-the-job training
49-3041	Farm Equipment Mechanics and Service Technicians	\$16.93	Long-term on-the-job training
11-1021	General and Operations Managers	\$35.25	Bachelor's degree
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$20.38	Postsecondary nondegree award
53-7051	Industrial Truck and Tractor Operators	\$14.89	Short-term on-the-job training
53-3033	Light Truck or Delivery Services Drivers	\$14.25	Short-term on-the-job training
51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	\$32.77	Long-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	\$25.89	Moderate-term on-the-job training
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	\$23.72	Bachelor's degree

Source: EMSI, 2017.1

Health Care (Regional Complementary).

While Health Care has not been identified as a key ecosystem, it is considered a regional complementary ecosystem and is very important to Northwestern Oklahoma Workforce Development Area. Approximately 14,299 jobs were reported in 2016 in Health Care in the Area, with average annual earnings per job of approximately \$47,172. By 2025, employment within this ecosystem is projected to increase to nearly 15,700. Approximately 1,499 new jobs will be created, with a loss of only 113 from 22 occupational categories. This results in a net increase in employment in Health Care of 1,386 jobs, a growth rate of 9.7%.

The list below, organized alphabetically based on occupation, highlights some of the occupations employed by industries within the Health Care regional complementary ecosystem in the Area. While these positions appear to be highly specialized within the Health Care sector, it must be remembered that other industries do employ health care specialists and there is competition among several other sectors, industries, and ecosystems for these skilled workers.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
31-9091	Dental Assistants	\$14.85	Postsecondary nondegree award
29-2041	Emergency Medical Technicians and Paramedics	\$14.87	Postsecondary nondegree award
31-1011	Home Health Aides	\$9.38	Short-term on-the-job training
29-2061	Licensed Practical and Licensed Vocational Nurses	\$17.78	Postsecondary nondegree award
11-9111	Medical and Health Services Managers	\$34.64	Bachelor's degree
31-9092	Medical Assistants	\$12.84	Postsecondary nondegree award
31-1014	Nursing Assistants	\$11.05	Postsecondary nondegree award
29-1051	Pharmacists	\$56.01	Doctoral or professional degree
29-2052	Pharmacy Technicians	\$12.92	Moderate-term on-the-job training
29-1141	Registered Nurses	\$26.40	Associates degree

Source: EMSI, 2017.1

Construction (Regional Complementary).

Construction is also a regional complementary ecosystem, and with nearly 14,800 jobs reported in 2016, is the second largest employing ecosystem in the region. The average annual earnings per job in the Construction ecosystem was reported as \$50,522. By 2025, employment is projected to increase to 17,902. Approximately 3,133 new jobs will be created, with a loss of only 18 from nine occupational categories. This results in a net increase in employment in Construction of 3,115 jobs and a growth rate of 21.1%, the highest growth rate of any key or complementary ecosystem.

The list below, arranged alphabetically by occupation, highlights some of the occupations employed by industries within the Construction regional complementary ecosystem in the Area. It should be noted that these positions are not limited to employment within Construction, but rather, may be in demand by many other sectors, industries, and ecosystems across the state.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
47-2061	Construction Laborers	\$14.02	Short-term on-the-job training
47-2111	Electricians	\$21.83	Apprenticeship
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$29.59	5 years or more experience
11-1021	General and Operations Managers	\$35.25	Bachelor's degree
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	\$18.46	Postsecondary nondegree award
53-3032	Heavy and Tractor-Trailer Truck Drivers	\$20.38	Postsecondary nondegree award
51-4041	Machinists	\$17.64	Long-term on-the-job training
47-2152	Plumbers, Pipefitters, and Steamfitters	\$18.86	Apprenticeship
51-2092	Team Assemblers	\$14.17	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	\$17.91	Moderate-term on-the-job training

Source: EMSI, 2017.1

Education (Regional Complementary).

The regional complementary ecosystem of Education accounted for approximately 19,200 jobs in 2016, making it the largest employing ecosystem. Average earnings per job were \$49,062. By 2025, employment is projected to decrease by -6.9% to 17,859, a net loss of -1,330 jobs. Most of the job loss is in the category of *Postsecondary Teachers*, with some additional job loss in clerical/support positions.

The list below, presented in alphabetical order by occupation, highlights some of the occupations employed by industries within the Education Ecosystem. Similar to the Health Care regional complementary ecosystem, many of the occupations within Education are extremely specialized but may still be in demand from other sectors, industries, and ecosystems across the state.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
53-3022	Bus Drivers, School or Special Client	\$9.45	Short-term on-the-job training
11-9032	Education Administrators, Elementary and Secondary School	\$34.12	Master's degree
21-1012	Educational, Guidance, School, and Vocational Counselors	\$20.08	Master's degree
25-2021	Elementary School Teachers, Except Special Education	\$18.67	Bachelor's degree
25-2012	Kindergarten Teachers, Except Special Education	\$17.95	Bachelor's degree
25-2022	Middle School Teachers, Except Special and Career/Technical Education	\$20.49	Bachelor's degree
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	\$19.77	Bachelor's degree
25-2052	Special Education Teachers, Kindergarten and Elementary School	\$20.05	Bachelor's degree
25-3098	Substitute Teachers	\$9.22	Bachelor's degree
25-9041	Teacher Assistants	\$9.30	Some college, no degree

Source: EMSI, 2017.1

Manufacturing (Regional Complementary).

The regional complementary ecosystem of Manufacturing is unique in that it is not typically analyzed as a distinctive, separate ecosystem. Rather, components of the Manufacturing industry are consistently embedded throughout each key ecosystem and included in those analyses. However, it is interesting and broadens the base of knowledge about the industry to focus an analysis specifically on manufacturing-related occupations.

The Manufacturing regional complementary ecosystem accounted for 4,765 jobs in 2016, with average earnings per job of \$61,735. By 2025, employment is projected to increase to nearly 5,000. Approximately 285 new jobs are projected to be created, with a loss of only 60 from 30 occupational categories. This results in a net increase in employment in Manufacturing of 225 jobs, a growth rate of 4.7%.

The list below, arranged in alphabetical order by occupation, highlights a few of the occupations employed by industries within the Manufacturing regional complementary ecosystem in the Area. These positions are not limited to employment strictly within Manufacturing Ecosystem industries, but rather, may be in demand by many other sectors, industries, and ecosystems across the state.

SOC	Occupation	Median Hourly Earnings	Education or Experience Level
51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$14.20	Moderate-term on-the-job training
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	\$16.22	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	\$28.03	Less than 5 years experience
11-1021	General and Operations Managers	\$35.25	Bachelor's degree
49-9041	Industrial Machinery Mechanics	\$23.96	Long-term on-the-job training
51-4041	Machinists	\$17.64	Long-term on-the-job training
51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	\$15.70	Moderate-term on-the-job training
51-2041	Structural Metal Fabricators and Fitters	\$18.05	Moderate-term on-the-job training
51-2092	Team Assemblers	\$14.17	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	\$17.91	Moderate-term on-the-job training

Source: EMSI, 2017.1