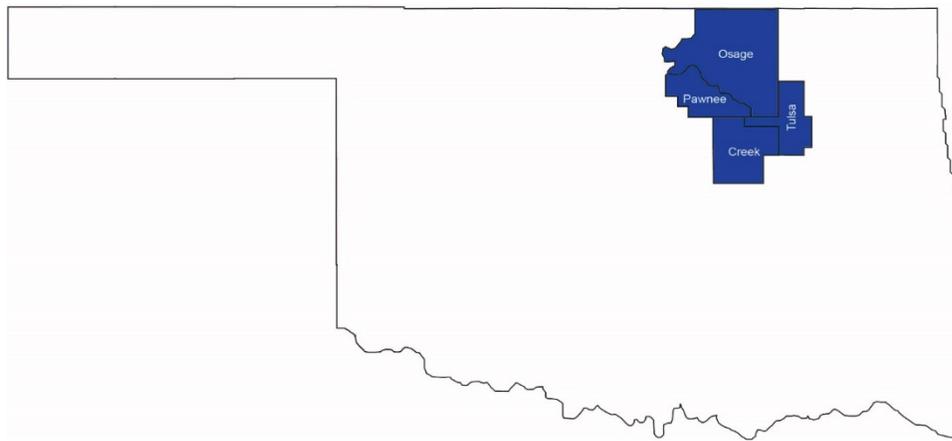


TULSA OKLAHOMA WORKFORCE DEVELOPMENT AREA



2020 LOCAL BRIEFING



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Last Updated: 4/27/2020

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Introduction

The Tulsa Oklahoma Workforce Development Area (WFDA) is composed of four Oklahoma Counties: Creek, Osage, Pawnee, and Tulsa. According to the U.S. Census Bureau, this combined region of Oklahoma covers 4,456 square miles and is home to over 789,000 residents. The following briefing reviews the population, education, labor force, economic indicators, and regional industry clusters for the Tulsa WFDA.

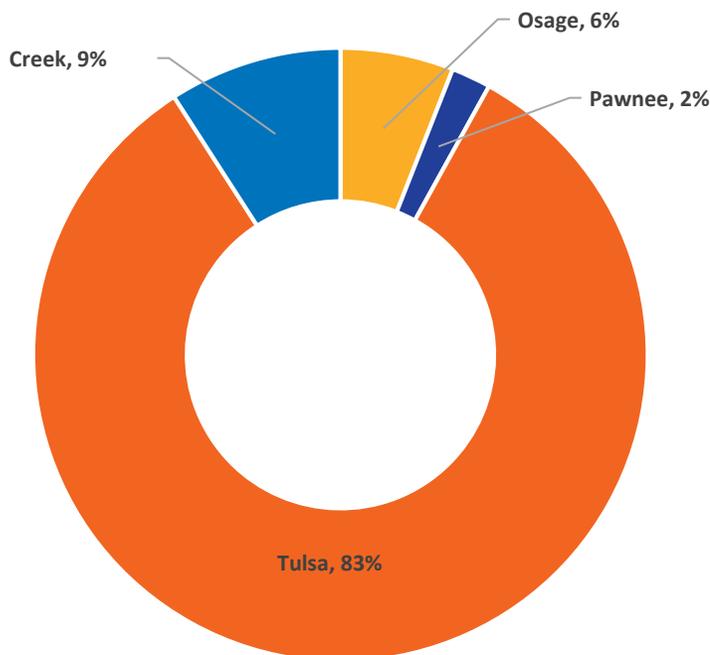
Population Overview

Overall, the Tulsa WFDA population grew by 3% from 2014-2019. Tulsa County had the largest growth rate of 4%. Creek County had the second largest growth rate of 3%. Osage County had the smallest growth rate of -1%. Density per square mile grew from 172-177 persons from 2014-2019. The highest density was in Tulsa County with 1,113 persons per square mile. The second highest density was in Creek County with 74 persons per square mile. The lowest density was in Pawnee County with 28 persons per square mile.

Population by County

Figure 1 shows the Tulsa WFDA percentage by county. This figure shows Tulsa County had the largest population representing 83% of the population in Tulsa WFDA. Creek County had the second largest population representing 9% of the population in Tulsa WDFDA. Pawnee County had the smallest population representing 2% of the population in Tulsa WDFDA.

Figure 1: Percentage of Population by County



Source: Emsi- economicmodeling.com- 2020.1

Table 1 shows the population change from 2014 to 2019. The Tulsa County population was 653,687 making it the largest population in Tulsa WFDA. The Creek County population was 71,924 which is the second largest population in Tulsa WFDA. The Pawnee county population was 16,398 making it the smallest population in Tulsa WFDA.

Table 1: Population Change, 2014-2019

County	2014 Population	2019 Population	Total Change
Osage	47,494	47,039	(454)
Pawnee	16,363	16,398	35
Tulsa	631,445	653,687	22,243
Creek	70,531	71,924	1,393
Total	765,833	789,049	23,216

Source: Emsi- economicmodeling.com- 2020.1

Table 2 shows the projected population change from 2019 to 2024. All counties in Tulsa WFDA are projected to grow.

Table 2: Projected Population Change, 2019-2024

County	2019 Population	2024 Population	Total Change
Creek	71,924	72,854	930
Osage	47,039	46,842	(197)
Pawnee	16,398	16,336	(61)
Tulsa	653,687	667,671	13,984
Total	789,049	803,703	14,655

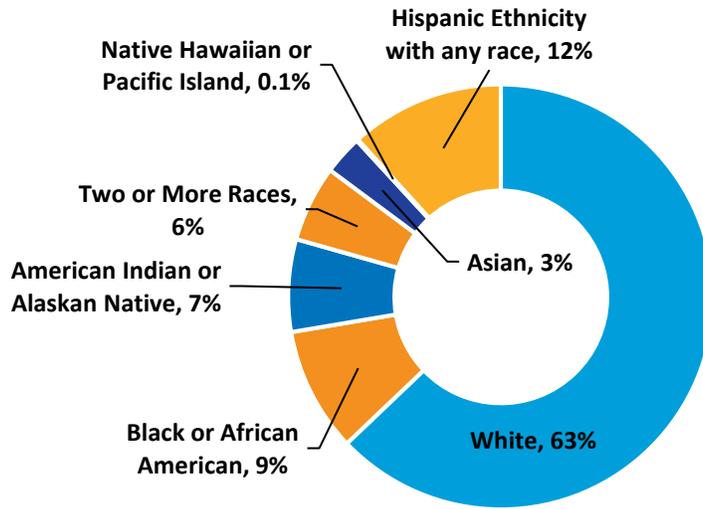
Source: Emsi- economicmodeling.com- 2020.1

Population by Race and Ethnicity

The following analyses used the racial categories designated by the U.S. Census Bureau. 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." Unless otherwise noted, individual races included in this briefing section were reported as Non-Hispanic.

Figure 2 provides the Tulsa WFDA population by Race and Ethnicity by percentage. This figure show that white had the highest percentage of the population in at 63%.Hispanic Ethnicity with any race had the second highest percentage of the population at 12%.Native Hawaiians or Pacific Islander had the smallest amount of the population at .1%.

Figure 2: Population by Race and Ethnicity



Source: Emsi- economicmodeling.com- 2020.1

Table 3 provides the Tulsa WFDA 2019 population by Race and Ethnicity. This table show that white has the largest population at 496,204. Hispanic Ethnicity with any race had the second largest population at 92,532. Native Hawaiians or Pacific Islander had the small amount of the population at 927.

Table 3: Population by Race & Ethnicity

Demographic	2019 Population
White	496,204
Black or African American	74,657
American Indian or Alaskan Native	55,541
Two or More Races	45,666
Asian	23,522
Native Hawaiian or Pacific Island	927
Hispanic Ethnicity with any race	92,532

Source: Emsi- economicmodeling.com- 2020.1

Hispanic Population

In Tulsa WFDA, the Hispanic Population was the largest non-white population. The Hispanic population is 92,532 in the Tulsa WDFDA, and the Non-Hispanic population is 696,517. White and Hispanic represent the largest part of the Hispanic population at 83%. American Indian or Alaskan Native and Hispanic and Two or More Races and Hispanic are both 7% of the Hispanic population. Native Hawaiian or Pacific Islander and Hispanic is the smallest part of the Hispanic population at .31%.

Table 4: Hispanic Population

Demographic	2019 Population
White, Hispanic	77,224
American Indian or Alaskan Native, Hispanic	6,637
Two or More Races, Hispanic	4,736
Black, Hispanic	3,100
Asian, Hispanic	544
Native Hawaiian or Pacific Islander, Hispanic	291

Source: Emsi- economicmodeling.com- 2020.1

Education

Colleges, Universities, Career Technology Centers, and K-12 schools are instrumental in developing the workforce. Educational institutions help supply local businesses and organizations with a workforce with the necessary labor and skills to be competitive in today's economy. The following section reviews Tulsa WFDA's educational attainment and an educational skills gap analysis.

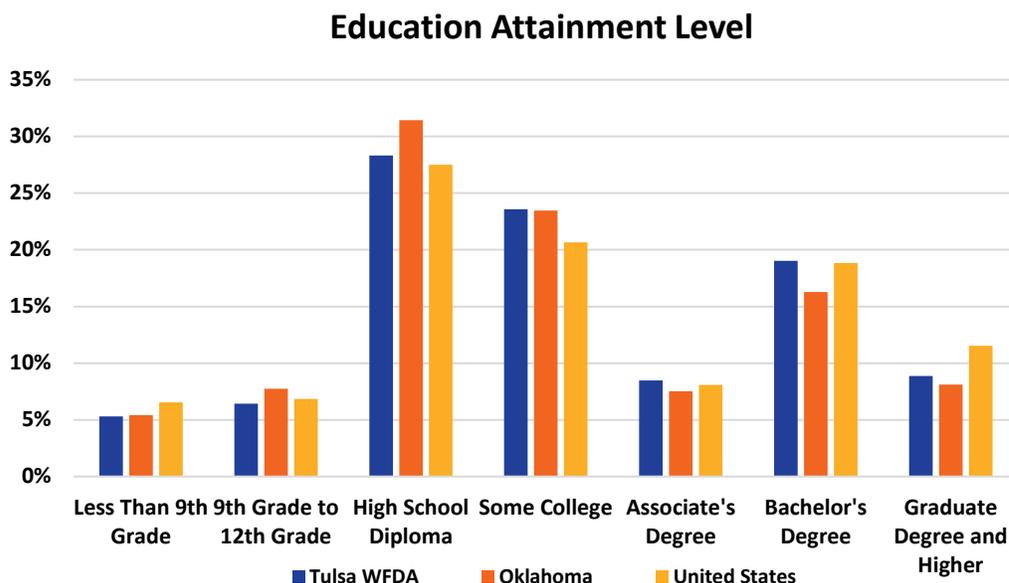
Educational Attainment

Shown in Table 3 the Tulsa WFDA Education Attainment Level. In the Tulsa WFDA, High School Graduates had the largest population at 28%. The second largest population was found in Some College this had 24% of the population. The third largest population was in Bachelor's Degree with 19%. The fourth largest was in Graduate Degree or Higher with 9% of the population. The fifth largest population was in Associate's Degree at 8%. The sixth largest population was 9th Grade to 12th Grade with 6% of the population. Lastly, the smallest population was found in both Less than 9th Grade at 5%.

In Oklahoma, High School Diploma had the highest share of the population at 31%. The second highest share of the population was Some College at 23%. The third highest share of the population is Bachelor's Degree at 16%. The fourth share highest share of the population is Graduate Degree and Higher, Associate's Degree, and 9th Grade to 12 Grade have the same share of the population at 8%. The smallest group is less than 9th grade at 5%.

In the United States, High School Diploma had the highest share of the population 28%. The next is Some College at 21%. The third highest population is Bachelor's Degree at 16%. The fourth largest group is Graduate Degree at 12%. The fifth largest group is the Associate's Degree at 8%. Lastly the smallest groups are Less than 9th grade and 9th grade to 12th grade at 7%.

Figure 3: Education Attainment Level



Source: Emsi- economicmodeling.com- 2020.1

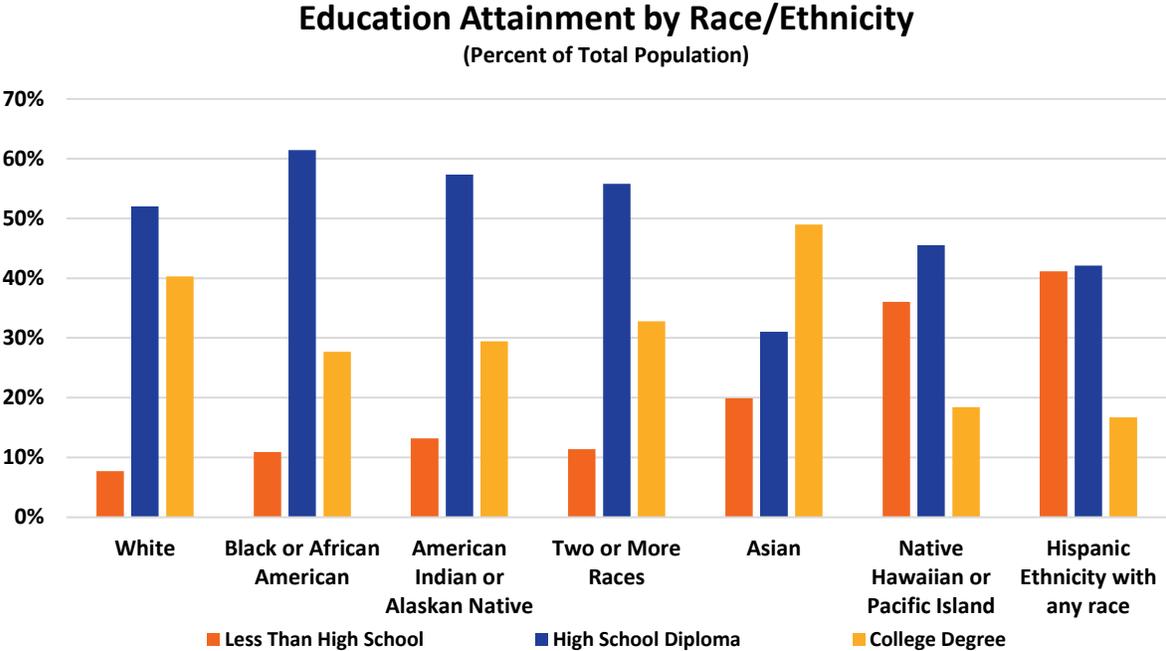
High School Diploma had the largest share of the population with 188,953 individuals. Figure 4, shows the breakdown of education by race and ethnicity. Showing that for High School Graduates White had the highest share of this population with 188,953. Black or African American had the second highest share of the population with 28,202. American Indian or Alaskan Native had the third highest share of the population with 19,629. Hispanic Ethnicity with any race had the fourth highest share of the population at 18,818. Two or More Races had the fifth highest share of the population with 11,854. Asian had the sixth highest share of the population with 4,605. Lastly, Native Hawaiian or Pacific Island had the smallest share of the population with 253.

College Degree had the second largest share of the population with 190,962 individuals. In Figure 4 it shows break down of those with a college degree, with White had the highest share of this population with 146,375. Black or African American had the second highest share of the population with 12,699. American Indian or Alaskan Native had the third highest share of the population with 10,088. Hispanic Ethnicity with any race had the fourth highest share of the population with 7,467. Asian with any race had the fifth highest share of the population with 7,266. Two or More Races had the sixth highest share of the population with 6,964. Lastly, Native Hawaiian or Pacific Island had the smallest share of the population with 102.

Less than High School had the smallest share of the population with 61,495 individuals. In Figure 4 it shows that White had the highest share of this population with 27,988. Hispanic Ethnicity with any race second highest share of the population with 18,397. Black or African American had the third highest share of the population with 5,002. American Indian or Alaskan Native had the fourth highest share of the population with 4,530. Asian had the fifth highest share of the population with 2,956. Two or More Races had the sixth highest share of

the population with 2,423. Lastly, Native Hawaiian or Pacific Island had the smallest share of the population with 200.

Figure 4: Education Attainment Level by Race/Ethnicity



Source: Emsi- economicmodeling.com- 2020.1

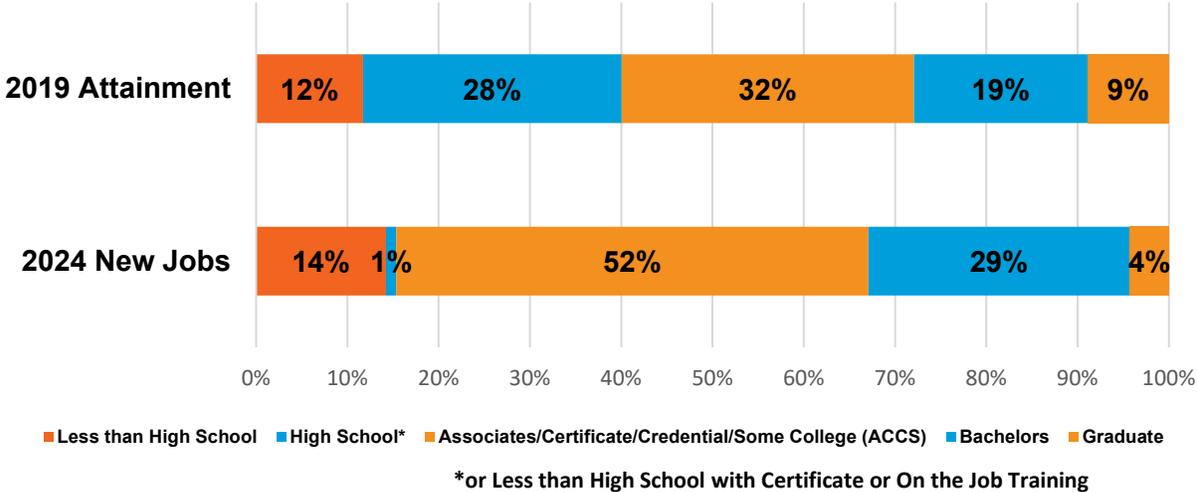
Skills Gap

A skills gap analysis was completed. The current percentage of educational achievement of residents was directly compared to the percentage of entry level education required by newly created jobs projected to develop between 2019 and 2024.

The data in this analysis were based upon projected need estimated with historical data. The projected shortfall at the Bachelor’s degree level will be significantly compounded by a misalignment of degree specialty. The existence of a sufficient number of individuals possessing a Bachelor’s Degree fails to meet the needs of employers if those degrees do not provide the appropriate training necessary to fulfill job requirements.

Figure 5 provides the skills gap shown by the forecast of new jobs in the next five years matched with the current level of education attainment. The greatest need or deficiency for workers is the group of Associates, Certificates, Some College, and Credential. With a deficit is 20%, from the subtraction of 52% of new jobs in 2025, and the attainment level in 2019 of 32%. The greatest surplus is those with a High School. This surplus is 28%, from the subtraction of 1% of new jobs, and the 28% attainment in 2019.

Figure 5: Local Skills Gap Analysis



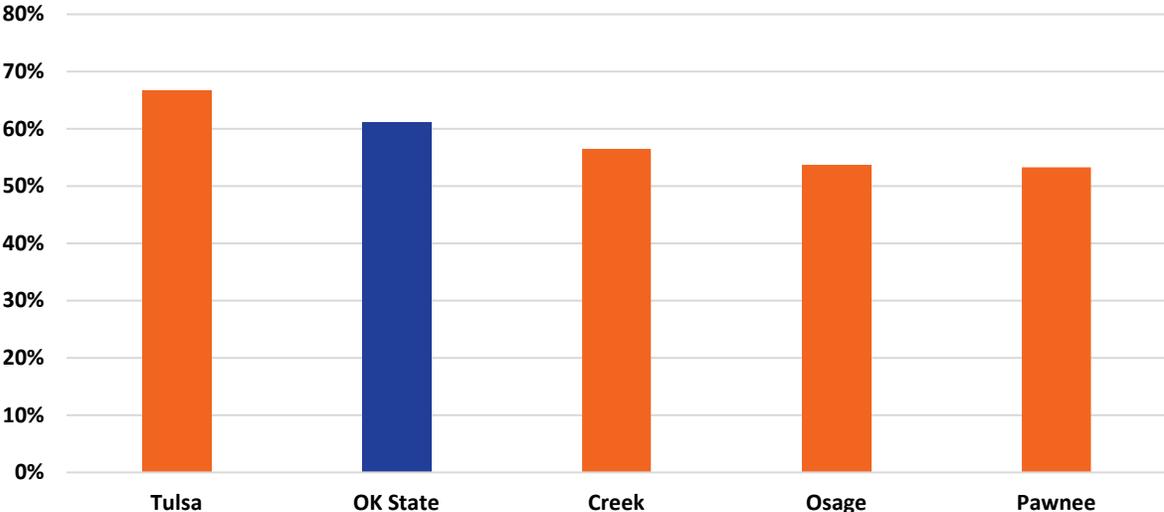
Source: Emsi- economicmodeling.com- 2020.1

Labor Force

Labor Force Participation by County

Figure 6 shows the Tulsa WFDA labor force participation rate by county. The highest percentage is in Tulsa County at 66.7%. The second highest is in Creek County at 56.5%. The third highest is in Osage County at 53.7%. Lastly, the lowest percentage is in Pawnee County at 53.3%.

Figure 6: Labor Force Participation Rate by County

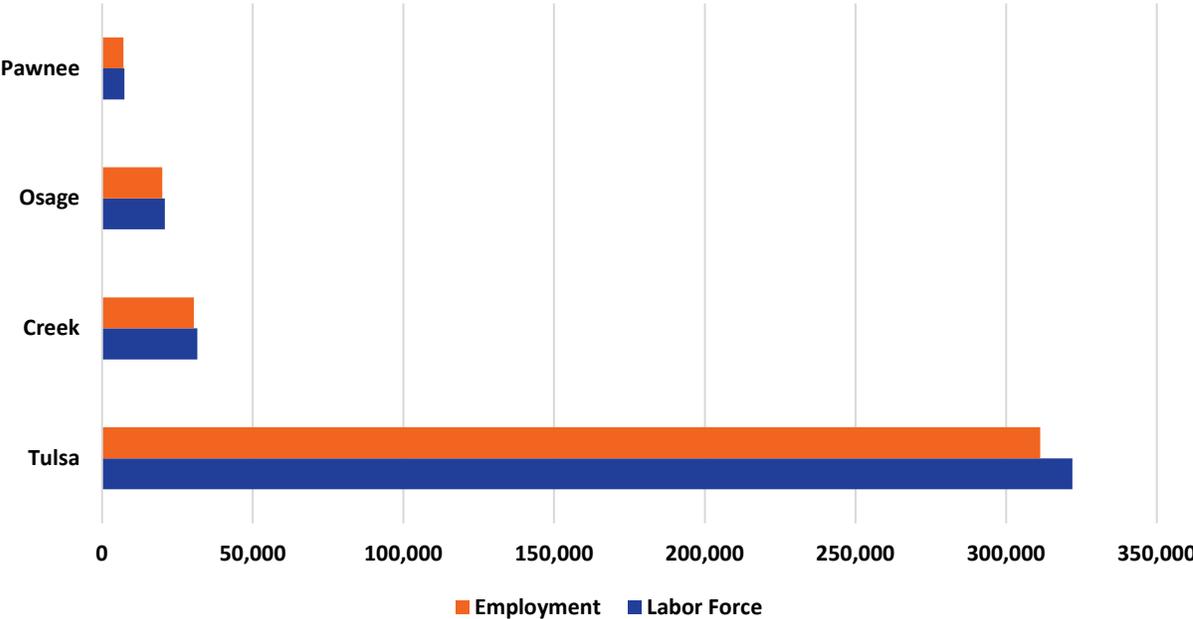


Source: American Community Survey (ACS) 2018 5-Year Estimates

Total Employment by County

Figure 7 compares the total employment and labor participation for Tulsa WFDA by county. The largest employment was found in Tulsa County at 311,265. The second largest is in Creek County at 30,419. The third largest is in Osage County at 19,957. The smallest labor force was in Pawnee County at 7,105. The largest labor force was found in Tulsa County at 322,030. The second largest is in Creek County at 31,623. The third largest is in Osage County at 20,848. The smallest labor force was in Pawnee County at 7,411.

Figure 7: Total Employment and Labor Force by County



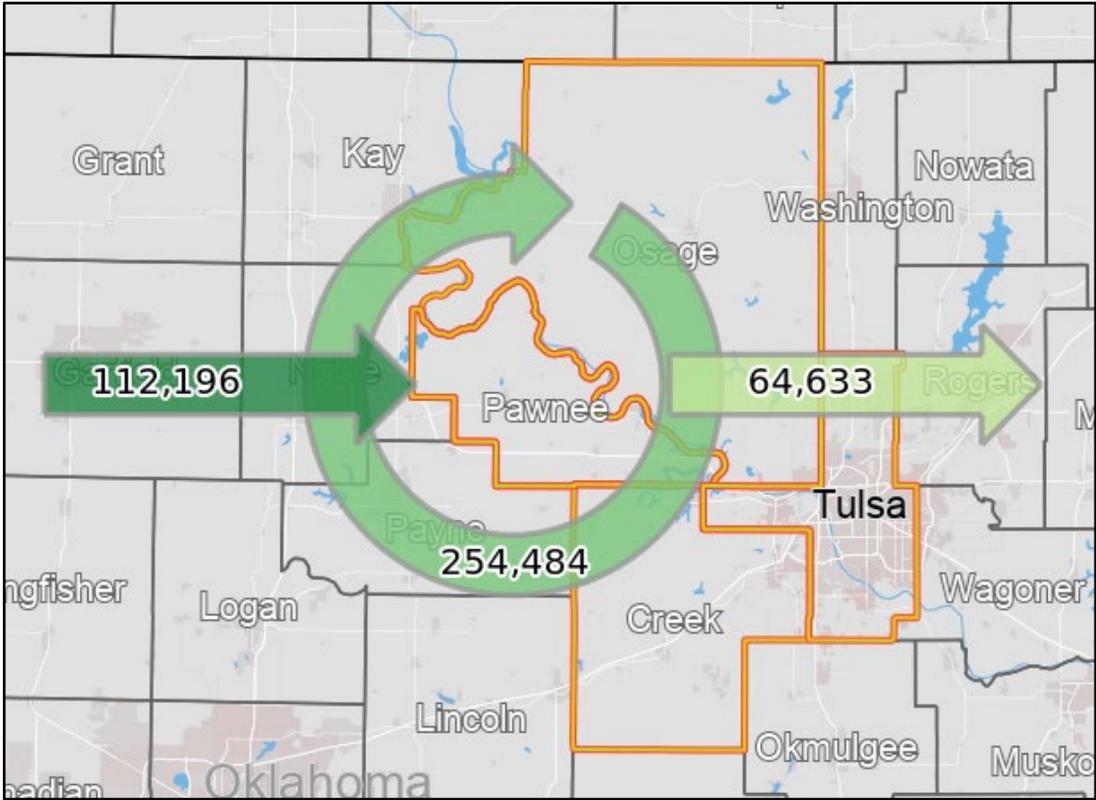
Source: 2018 Bureau of Labor Statistics (BLS), Local Area Unemployment Statistics (LAUS)

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 primary employment.

In the Tulsa WFDA, 112,196 work in the area and did not live there. 254,484 lived there and worked there. 64,633 lived in Tulsa WFDA and worked outside the area.

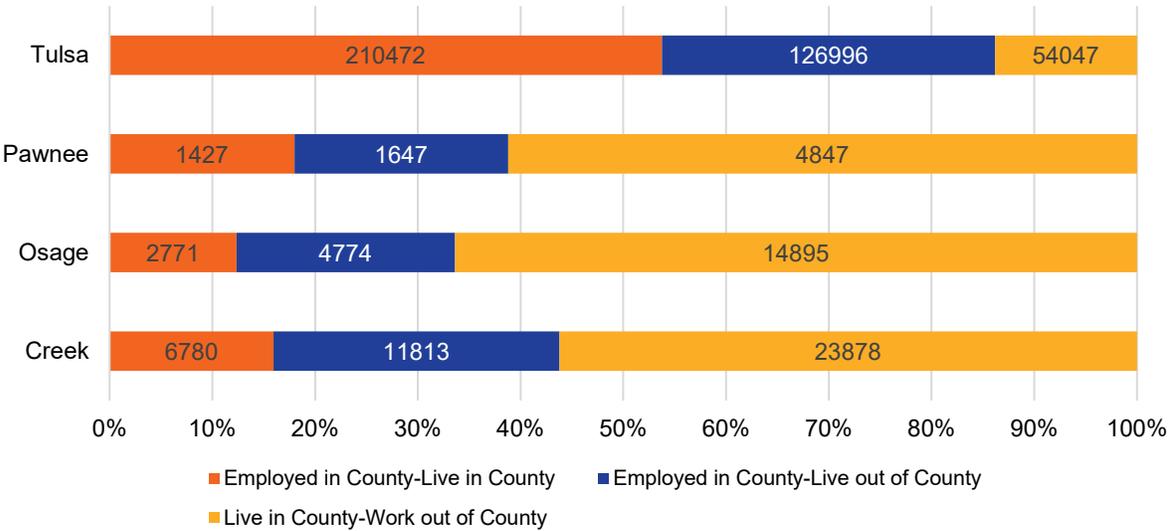
Figure 8: Total Local Area Commuter Patterns



Source: Center of Economic Studies (CES), OnTheMap, 2017

Figure 9 provides a county level analysis on each individual county.

Figure 9: County Level Commuter Patterns



Source: Center of Economic Studies (CES), OnTheMap, 2017

Economic Indicators

Industry Sectors by Total Jobs

The North American Industry Classification System (NAICS) is the standard utilized by federal agencies to classify businesses to collect, analyze, and publish statistical data related to the United States business economy. Several of the analyses that follow are based upon data using NAICS employment sector codes. The following information is provided to enhance understanding of the framework of these analyses.

NAICS uses a 6-digit coding system which is structured hierarchically, beginning with 20 broad economic sectors. Over 1,000 industries are then sub-categorized within these 20 sectors. Each industry within a sector shares distinguishing economic activities. The most recent version of the classification system was implemented in 2017. Additional information is available at www.census.gov/eos/www/naics.

There was an estimated 405,831 number of total jobs in Tulsa WFDA in 2019. Table 6 shows the top employment industry sectors in Tulsa WFDA. The largest sector is Health Care and Social Assistance with 54,858 jobs. The second largest sector was manufacturing with 47,406 jobs. The tenth largest sectors was Finance and Insurance with 16,301 jobs.

Table 5: Top Industry Sectors by Total Number of Jobs

NAICS	Description	2019 Jobs	Percentage of Total Employment
62	Health Care and Social Assistance	54,858	13.52%
31	Manufacturing	47,406	11.68%
90	Government	43,858	10.81%
44	Retail Trade	42,238	10.41%
72	Accommodation and Food Services	36,698	9.04%
56	Administrative and Support and Waste Management and Remediation Services	31,244	7.70%
23	Construction	21,642	5.33%
54	Professional, Scientific, and Technical Services	21,597	5.32%
81	Other Services (except Public Administration)	17,382	4.28%
52	Finance and Insurance	16,301	4.02%

Source: Emsi- economicmodeling.com- 2020.1

Top Occupations by Total Jobs

The Standard Occupational Classification (SOC) system is used by Federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data. Additional analyses that follow are based upon data examined utilizing SOC occupational codes. The following information is provided to enhance understanding of the framework of these analyses.

All workers are classified into one of 840 detailed occupations according to their occupational definition. To facilitate classification, detailed occupations are combined to form 461 broad

occupations, 97 minor groups, and 23 major groups. Detailed occupations in the SOC with similar job duties, and in some cases, skills, education, and/or training, are grouped together. Recently, the 2018 system for SOC was implemented, replacing the 2010 version. Additional information is available at www.bls.gov/soc/.

Table 6 provides the top occupations by total number of jobs in the Tulsa WFDA. Retail Salespersons has the highest number of jobs at 14,060. Customer Service Representatives had the second highest number of jobs at 9,100. The tenth highest number of jobs is found in Office Clerks, General at 6,503.

Table 6: Top Occupations by Total Number of Jobs

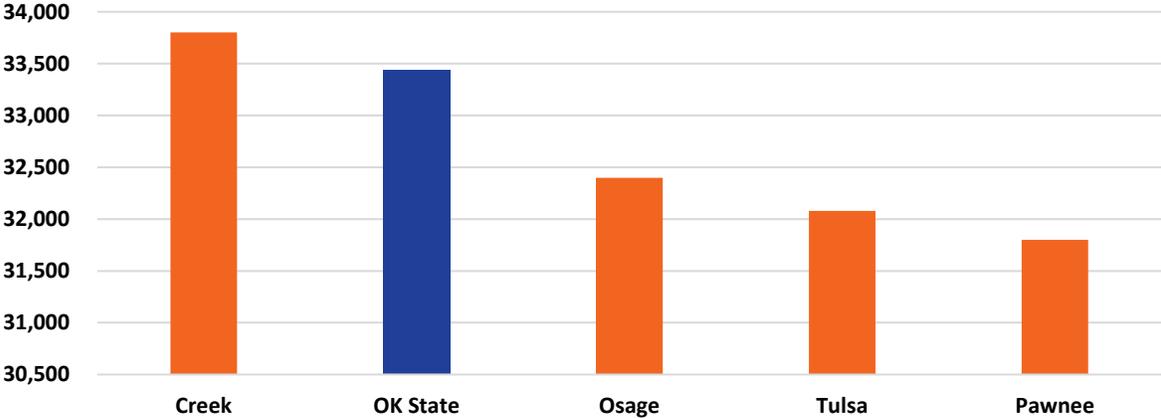
SOC	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
41-2031	Retail Salespersons	14,060	13,894	(166)	\$11.09	No formal educational credential	Short-term on-the-job training
43-4051	Customer Service Representatives	9,100	8,666	(34)	\$15.08	High school diploma or equivalent	Short-term on-the-job training
41-2011	Cashiers	8,323	8,163	(160)	\$9.91	No formal educational credential	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	7,572	7,904	332	\$13.50	No formal educational credential	Short-term on-the-job training
29-1141	Registered Nurses	7,489	7,849	360	\$29.77	Bachelor's degree	None
35-3031	Waiters and Waitresses	7,075	7,485	410	\$9.04	No formal educational credential	Short-term on-the-job training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6,942	6,725	(217)	\$15.81	High school diploma or equivalent	Short-term on-the-job training
11-1021	General and Operations Managers	6,940	7,183	243	\$41.21	Bachelor's degree	None
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	6,734	7,548	814	\$9.06	No formal educational credential	Short-term on-the-job training
43-9061	Office Clerks, General	6,503	6,526	23	\$13.94	High school diploma or equivalent	Short-term on-the-job training

Source: Emsi- economicmodeling.com- 2020.1

Median Wage

Figure 10 provides the median wage of those over the age of 16. The highest wage was found in Creek County at \$33,800. The second highest wage was in Osage County at \$32,397. The third highest was in Tulsa County at \$32,079. Lastly, the lowest median wage is in Pawnee County at \$31,799.

Figure 10: Median Wage by County

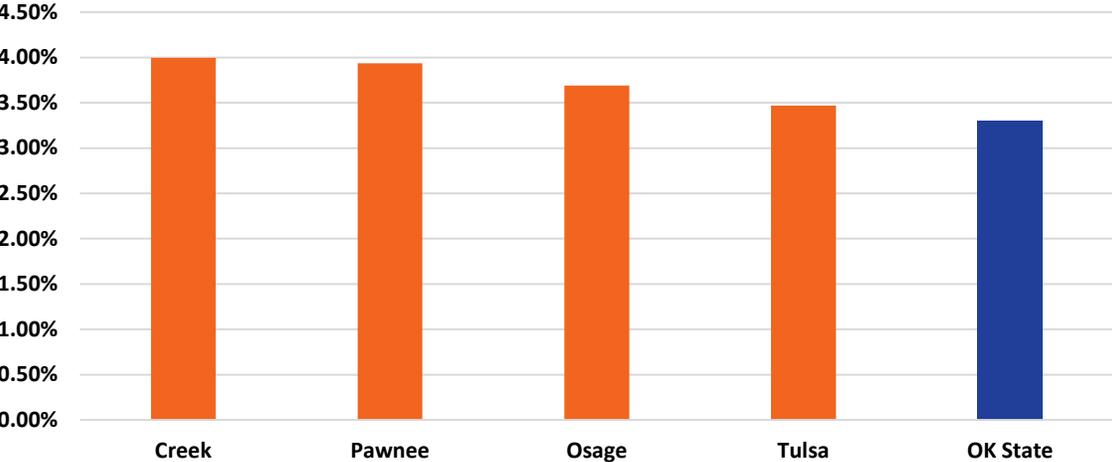


Source: American Community Survey (ACS) 2018 5-Year Estimates

Unemployment Rate

Figure 11 shows the unemployment rates for Tulsa WFDA. The highest unemployment was found in Creek County with an unemployment rate of 4%. The second highest unemployment was found in Pawnee County which had an unemployment rate of 3.94%. The third highest unemployment rate was in Osage County with an unemployment rate of 3.69%. Lastly, the lowest unemployment rate was found in Tulsa County with an unemployment rate of 3.47%.

Figure 11: Unemployment Rate



Source: Emsi- economicmodeling.com- 2020.1

Industry Clusters

Oklahoma Department of Commerce has identified five key, in demand, industry clusters for the state of Oklahoma (also known as Ecosystems). Industry clusters provide a competitive advantage in a global economy. They exhibit significant potential for employment growth and provide wealth generating employment opportunities. Regional industry clusters have been identified for each Local Workforce Development Area.

State Industry Clusters

The five State Industry Cluster's 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.

Regional Industry Clusters

In addition to the five State Industry clusters, Regional Industry Clusters have been identified. The regional clusters for the Tulsa WFDA are Industrial, Transportation and Distribution, Mining and Extraction, Professional Services, Healthcare, and STEM.

The source data to start the process was establishment level data from over 100,000 business establishments in the state. Major employers are non-retail sector establishments that are among the top twenty percent of employing establishments in their respective counties. Retail was excluded since it is dependent on other sectors of the economy employing people and generating economic activity. Ensuring other sectors are successful will impact the success of the retail sector.

The clusters were informed by the methodology utilized by the Harvard Business School and the Economic Development Administration. In order to report data in a meaningful manner, there was some customization grouping linked industries. After identifying the top twenty percent of the major employers in each of the counties, they were grouped into industry clusters in their regional economy. Establishment level data from the Quarterly Census of Employment & Wages was utilized as the primary data source in the cluster identification. Since confidentiality must be maintained, in order to report the results, the data must be aggregated by clusters and geography.

Major employers include traditional sectors targeted in economic development including manufacturing, energy and knowledge-based service industries. It also includes other sectors that are not targeted in economic development but are important to the local region and have demands on workforce skills. These sectors include, but not limited to, agriculture, construction, utilities, healthcare, education, government, tourism and hospitality.

Table 7 summarizes the industry clusters in Tulsa WFDA. The highest expected growth is in the Healthcare cluster with an expected growth of 3,421 jobs. The next highest expected growth cluster is in Industrial with 3,334 jobs. The sixth highest expected growth is in Professional Services with 829 jobs.

Table 7: Regional Industry Clusters

State Industry Clusters	Estimated Net Job Growth (2019-2024)	Industry Cluster Growth Rate (2019-2024)	Average Annual Earnings
Industrial	3,334	12%	\$84,848
Transportation and Distribution	1,608	3%	\$75,957
Mining and Extraction	959	3%	\$154,719
Professional Services	829	1%	\$93,854
Healthcare	3,421	7%	\$64,288
STEM	1,645	18%	\$111,855

Source: Emsi- economicmodeling.com- 2020.1

Healthcare

In 2019 there were 60,945 jobs in the Tulsa WFDA Healthcare Industry Cluster with average earnings of \$64,288. Based on demand projections jobs within the Industry Cluster will increase by 4,093 jobs totaling 65,038 jobs by the year 2024.

Shown in Table 8 is the top industries in the Tulsa WFDA Healthcare Industry Cluster. General Medical and Surgical Hospitals had the highest number of job with 16,163. Offices of Physicians (except Mental Health Specialists) had the second highest number of jobs with 8,990. The tenth highest number of jobs is in Pharmacies and Drug Stores at 1,780.

Table 8: Top Healthcare Industries by Number of Current Jobs

NAICS	Description	2019 Jobs	Avg. Earnings Per Job
622110	General Medical and Surgical Hospitals	16,163	\$64,731
621111	Offices of Physicians (except Mental Health Specialists)	8,990	\$130,736
623110	Nursing Care Facilities (Skilled Nursing Facilities)	3,513	\$38,282
621610	Home Health Care Services	2,838	\$33,785
621210	Offices of Dentists	2,625	\$63,757
624410	Child Day Care Services	2,162	\$25,138
624190	Other Individual and Family Services	1,982	\$49,310
623311	Continuing Care Retirement Communities	1,937	\$37,480
624120	Services for the Elderly and Persons with Disabilities	1,899	\$28,387
446110	Pharmacies and Drug Stores	1,780	\$54,134

Source: EMSI-Economicmodeling.com 2020.1

Table 9 is the top Tulsa WFDA Healthcare emerging industries with the largest change from 2019-2024. Offices of Physicians (except Mental Health Specialists) had the highest growth with 1,116 jobs. The second highest growth was found in Offices of Physical, Occupational and Speech Therapists, and Audiologists with 481 jobs. The tenth highest growth was Psychiatric and Substance Abuse Hospitals with 181 jobs.

Table 9: Top Healthcare Emerging Industries by Number of New Jobs

NAICS	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 % Change
621111	Offices of Physicians (except Mental Health Specialists)	8,990	10,106	1,116	12%
621340	Offices of Physical, Occupational and Speech Therapists, and Audiologists	1,454	1,935	481	33%
623311	Continuing Care Retirement Communities	1,937	2,334	397	20%
621511	Medical Laboratories	958	1,294	336	35%
621493	Freestanding Ambulatory Surgical and Emergency Centers	622	902	280	45%
624120	Services for the Elderly and Persons with Disabilities	1,899	2,176	277	15%
622110	General Medical and Surgical Hospitals	16,163	16,389	226	1%
621420	Outpatient Mental Health and Substance Abuse Centers	828	1,048	220	27%
621210	Offices of Dentists	2,625	2,821	196	7%
622210	Psychiatric and Substance Abuse Hospitals	946	1,127	181	19%

Source: EMSI-Economicmodeling.com 2020.1

Table 10 shows the top jobs in the Tulsa WFDA Healthcare cluster. Customer Service Representatives had the highest number of jobs in this cluster with 9,100. Cashiers had the second highest number of jobs in this cluster with 8,323. The tenth highest number of jobs in this cluster is Nursing Assistants with 3,821.

Table 10: Top Healthcare Occupations by Number of Current Jobs

SOC	Description	2019 Jobs	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
43-4051	Customer Service Representatives	9,100	\$15.08	High school diploma or equivalent	Short-term on-the-job training
41-2011	Cashiers	8,323	\$9.91	No formal educational credential	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	7,572	\$13.50	No formal educational credential	Short-term on-the-job training
29-1141	Registered Nurses	7,489	\$29.77	Bachelor's degree	None
11-1021	General and Operations Managers	6,940	\$41.21	Bachelor's degree	None
43-9061	Office Clerks, General	6,503	\$13.94	High school diploma or equivalent	Short-term on-the-job training
43-1011	First-Line Supervisors of Office and Administrative Support Workers	5,248	\$24.80	High school diploma or equivalent	None
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	4,538	\$15.51	High school diploma or equivalent	Moderate-term on-the-job training
49-9071	Maintenance and Repair Workers, General	4,209	\$16.85	High school diploma or equivalent	Moderate-term on-the-job training
31-1014	Nursing Assistants	3,821	\$12.29	Postsecondary nondegree award	None

Source: EMSI-Economicmodeling.com 2020.1

Table 11 shows the Tulsa WFDA Healthcare emerging jobs by growth from 2019 to 2024. Registered Nurses is expected to have the most growth with 360. The second highest expected growth is in Medical Assistants with 336. The job with the tenth largest expected growth is in Maintenance and Repair Workers, General with 167 jobs.

Table 11: Top Healthcare Emerging Occupations by Number of New Jobs

SOC	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 Change %	Median Hourly Earnings
29-1141	Registered Nurses	7,489	7,849	360	4.81%	\$29.77
31-9092	Medical Assistants	2,769	3,105	336	12.13%	\$15.53
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	7,572	7,904	332	4.38%	\$13.50
39-9021	Personal Care Aides	2,879	3,127	248	8.61%	\$9.46
11-1021	General and Operations Managers	6,940	7,183	243	3.50%	\$41.21
43-6013	Medical Secretaries	2,777	3,000	223	8.03%	\$16.03
17-2112	Industrial Engineers	784	990	206	26.27%	\$39.84
51-4041	Machinists	2,156	2,362	206	9.55%	\$21.37
43-4171	Receptionists and Information Clerks	2,589	2,757	168	6.49%	\$14.13
49-9071	Maintenance and Repair Workers, General	4,209	4,376	167	3.97%	\$16.85

Source: EMSI-Economicmodeling.com 2020.1

STEM

In 2019 there were 24,761 jobs in the Tulsa WFDA STEM Industry Cluster with average earnings of \$111,855. Based on demand projections jobs within the STEM Cluster will increase by 29,224 jobs totaling 29,224 jobs by the year 2024.

Table 12 shows the top industries in the Tulsa WFDA STEM Clusters. The industry with the highest number of jobs is Aircraft Manufacturing with 6,929. The second highest number of job is in Engineering Services at 2,997. The tenth highest number of jobs is the Wireless Telecommunications Carriers (except Satellite) with 678.

Table 12: Top STEM Industries by Number of Current Jobs

NAICS	Description	2019 Jobs	Avg. Earnings Per Job
336411	Aircraft Manufacturing	6,929	\$112,903
541330	Engineering Services	2,997	\$102,633
211120	Crude Petroleum Extraction	2,819	\$177,319
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	1,773	\$80,461
211130	Natural Gas Extraction	1,453	\$190,258
541519	Other Computer Related Services	1,414	\$68,268
541511	Custom Computer Programming Services	823	\$96,937
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	769	\$76,029
541512	Computer Systems Design Services	731	\$113,202
517312	Wireless Telecommunications Carriers (except Satellite)	678	\$72,995

Source: EMSI-Economicmodeling.com 2020.1

Table 13 shows the top emerging industries in Tulsa WFDA STEM clusters by growth of total jobs from 2019-2024. The largest expected growth was in Aircraft Manufacturing with a growth of 3,210. The second largest expected growth was in Other Computer Related Services with growth of 771. The tenth largest expected growth was in Testing Laboratories with a change of 53.

Table 13: Top STEM Emerging Industries by Number of New Jobs

NAICS	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 % Change
336411	Aircraft Manufacturing	6,929	10,139	3,210	46%
541519	Other Computer Related Services	1,414	2,185	771	55%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	1,773	2,276	503	28%
541511	Custom Computer Programming Services	823	978	155	19%
541330	Engineering Services	2,997	3,112	115	4%
517911	Telecommunications Resellers	363	463	100	28%
211130	Natural Gas Extraction	1,453	1,549	96	7%
517410	Satellite Telecommunications	106	163	57	54%
541512	Computer Systems Design Services	731	786	55	8%
541380	Testing Laboratories	520	573	53	10%

Source: EMSI-Economicmodeling.com 2020.1

Table 14 shows the top jobs in Tulsa WFDA STEM cluster for 2019. The highest number of jobs is in Customer Service Representatives at 9,100. The second highest number of jobs is in Secretaries and Administrative Assistants, Except Legal, Medical, and Executive at 6,942. The tenth number of job was in Computer User Support Specialists at 2,108.

Table 14: Top STEM Occupations by Number of Current Jobs

SOC	Description	2019 Jobs	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
43-4051	Customer Service Representatives	9,100	\$15.08	High school diploma or equivalent	Short-term on-the-job training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6,942	\$15.81	High school diploma or equivalent	Short-term on-the-job training
11-1021	General and Operations Managers	6,940	\$41.21	Bachelor's degree	None
43-9061	Office Clerks, General	6,503	\$13.94	High school diploma or equivalent	Short-term on-the-job training
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	4,538	\$15.51	High school diploma or equivalent	Moderate-term on-the-job training
41-3099	Sales Representatives, Services, All Other	2,961	\$23.57	High school diploma or equivalent	Moderate-term on-the-job training
51-1011	First-Line Supervisors of Production and Operating Workers	2,831	\$28.26	High school diploma or equivalent	None
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	2,286	\$21.25	High school diploma or equivalent	Moderate-term on-the-job training
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	2,206	\$33.04	Bachelor's degree	Moderate-term on-the-job training
15-1151	Computer User Support Specialists	2,108	\$21.46	Some college, no degree	None

Source: EMSI-Economicmodeling.com 2020.1

Table 15 shows the emerging jobs by growth from 2019 to 2024 in the Tulsa WFDA STEM cluster. The largest expected growth in number of jobs was in Software Developers, Applications with an increase of 262. The second largest expected growth was in General and Operations Managers with 243. The tenth largest expected growth was in Electrical Engineers with 77 jobs.

Table 15: Top STEM Emerging Occupations by Number of New Jobs

SOC	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 Change %	Median Hourly Earnings
15-1132	Software Developers, Applications	1,224	1,486	262	21.40%	\$41.46
11-1021	General and Operations Managers	6,940	7,183	243	3.50%	\$41.21
17-2112	Industrial Engineers	784	990	206	26.27%	\$39.84
15-1133	Software Developers, Systems Software	493	649	156	31.65%	\$40.80
13-1199	Business Operations Specialists, All Other	505	656	151	29.88%	\$33.71
51-1011	First-Line Supervisors of Production and Operating Workers	2,831	2,976	145	5.12%	\$28.26
17-2141	Mechanical Engineers	957	1,086	129	13.49%	\$43.44
13-1161	Market Research Analysts and Marketing Specialists	1,452	1,559	107	7.37%	\$26.90
15-1121	Computer Systems Analysts	771	872	101	13.10%	\$40.54
17-2071	Electrical Engineers	562	639	77	13.69%	\$47.30

Source: EMSI-Economicmodeling.com 2020.1

Transportation and Distribution

In 2019 there were 31,750 jobs in the Tulsa WFDA Transportation and Distribution Industry Cluster with average earnings of \$75,957. Based on demand projections jobs within the Transportation and Distribution Industry Cluster will increase 882 jobs totaling 32,632 jobs by the year 2024.

Shown in Table 16 is the top industries in the Tulsa WFDA Transportation and Distribution Industry Cluster. General Warehousing and Storage had the highest number of job with 3,634. General Freight Trucking, Long-Distance had the second highest number of jobs with 3,380. The tenth highest number of jobs is in Other Chemical and Allied Products Merchant Wholesalers at 711.

Table 16: Top Transportation and Distribution Industries by Number of Current Jobs

NAICS	Description	2019 Jobs	Avg. Earnings Per Job
49311	General Warehousing and Storage	3,634	\$28,361
48412	General Freight Trucking, Long-Distance	3,380	\$73,561
42383	Industrial Machinery and Equipment Merchant Wholesalers	1,821	\$92,503
42512	Wholesale Trade Agents and Brokers	1,707	\$73,790
33451	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	1,491	\$78,667
48819	Other Support Activities for Air Transportation	1,330	\$83,410
33612	Heavy Duty Truck Manufacturing	1,057	\$67,398
48691	Pipeline Transportation of Refined Petroleum Products	937	\$196,197
42351	Metal Service Centers and Other Metal Merchant Wholesalers	917	\$84,628
42469	Other Chemical and Allied Products Merchant Wholesalers	711	\$82,627

Source: EMSI-Economicmodeling.com 2020.1

Table 17 is the top Emerging Occupations in the Tulsa WFDA transportation and distribution with the largest change from 2019-2024. Pipeline Transportation of Refined Petroleum Products had the highest expected growth with 179 jobs. The second highest expected growth was found in General Freight Trucking, Long-Distance with 163 jobs. The tenth highest expected growth was in Automobile and Other Motor Vehicle Merchant Wholesalers with 73 jobs.

Table 17: Top Transportation & Distribution Emerging Industries by Number of New Jobs

NAICS	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 % Change
48691	Pipeline Transportation of Refined Petroleum Products	937	1,116	179	19%
48412	General Freight Trucking, Long-Distance	3,380	3,543	163	5%
33621	Motor Vehicle Body and Trailer Manufacturing	316	460	144	46%
42482	Wine and Distilled Alcoholic Beverage Merchant Wholesalers	386	503	117	30%
48851	Freight Transportation Arrangement	402	514	112	28%
42361	Electrical Apparatus and Equipment, Wiring Supplies, and Related Equipment Merchant Wholesalers	660	753	93	14%
42499	Other Miscellaneous Nondurable Goods Merchant Wholesalers	282	373	91	32%
42413	Industrial and Personal Service Paper Merchant Wholesalers	186	265	79	42%
48423	Specialized Freight (except Used Goods) Trucking, Long-Distance	614	692	78	13%
42311	Automobile and Other Motor Vehicle Merchant Wholesalers	593	666	73	12%

Source: EMSI-Economicmodeling.com 2020.1

Table 18 shows the top jobs in the Tulsa WFDA Transportation & Distribution cluster. Retail Salespersons had the highest number of jobs in this cluster with 14,060. Customer Service Representatives had the second highest number of jobs in this cluster with 9,100. The tenth highest number of jobs in this cluster is Office Clerks, General with 6,503.

Table 18: Top Transportation & Distribution Occupations by Number of Current Jobs

SOC	Description	2019 Jobs	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
41-2031	Retail Salespersons	14,060	\$11.09	No formal educational credential	Short-term on-the-job training
43-4051	Customer Service Representatives	9,100	\$15.08	High school diploma or equivalent	Short-term on-the-job training
41-2011	Cashiers	8,323	\$9.91	No formal educational credential	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	7,572	\$13.50	No formal educational credential	Short-term on-the-job training
29-1141	Registered Nurses	7,489	\$29.77	Bachelor's degree	None
35-3031	Waiters and Waitresses	7,075	\$9.04	No formal educational credential	Short-term on-the-job training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6,942	\$15.81	High school diploma or equivalent	Short-term on-the-job training
11-1021	General and Operations Managers	6,940	\$41.21	Bachelor's degree	None
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	6,734	\$9.06	No formal educational credential	Short-term on-the-job training
43-9061	Office Clerks, General	6,503	\$13.94	High school diploma or equivalent	Short-term on-the-job training

Source: EMSI-Economicmodeling.com 2020.1

Table 19 shows the emerging jobs by growth in Tulsa WFDA Transportation and Distribution from 2019 to 2024. Combined Food Preparation and Serving Workers, Including Fast Food has the most expected growth with 814. The second highest expected growth is in Cooks, Restaurant with 493. The job with the tenth largest expected growth is in Heavy and Tractor-Trailer Truck Drivers with 274 jobs.

Table 19: Top Transportation & Distribution Emerging Occupations by Number of New Jobs

SOC	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 Change %	Median Hourly Earnings
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	6,734	7,548	814	12.09%	\$9.06
35-2014	Cooks, Restaurant	4,116	4,609	493	11.98%	\$11.44
35-3031	Waiters and Waitresses	7,075	7,485	410	5.79%	\$9.04
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	2,225	2,620	395	17.76%	\$23.19
29-1141	Registered Nurses	7,489	7,849	360	4.81%	\$29.77
31-9092	Medical Assistants	2,769	3,105	336	12.13%	\$15.53
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	7,572	7,904	332	4.38%	\$13.50
33-9032	Security Guards	2,960	3,285	325	10.98%	\$13.36
47-2152	Plumbers, Pipefitters, and Steamfitters	1,711	2,012	301	17.59%	\$27.06
53-3032	Heavy and Tractor-Trailer Truck Drivers	5,185	5,459	274	5.28%	\$20.86

Source: EMSI-Economicmodeling.com 2020.1

Mining and Extraction

In 2019 there were 6,776 jobs in the Tulsa WFDA Mining and Extraction Industry Cluster with average earnings of \$154,719. Based on demand projections jobs within the Mining and Extraction Industry Cluster will increase by 191 jobs totaling 6,967 jobs by the year 2024.

Shown in Table 14 is the top industries in the Tulsa WFDA Mining and Extraction Industry Cluster. Crude Petroleum Extraction had the highest number of job with 2,819. Support Activities for Oil and Gas Operations the second highest number of jobs with 58. The fifth highest number of jobs is in Bituminous Coal Underground Mining at 94.

Table 20: Top Mining and Extraction Industries by Number of Current Jobs

NAICS	Description	2019 Jobs	Avg. Earnings Per Job
211120	Crude Petroleum Extraction	2,819	\$177,319
213112	Support Activities for Oil and Gas Operations	1,495	\$103,249
211130	Natural Gas Extraction	1,453	\$190,258
213111	Drilling Oil and Gas Wells	757	\$100,505
212112	Bituminous Coal Underground Mining	94	\$258,437

Source: EMSI-Economicmodeling.com 2020.1

Table 21 is the Emerging Occupations in the Tulsa WFDA Mining and Extraction industry cluster with the largest change from 2019-2024. Drilling Oil and Gas Wells had the highest expected growth of 268. The second highest expected growth was found in Natural Gas Extraction with 96 jobs. The fifth highest growth was in Bituminous Coal Underground Mining with 5 jobs.

Table 21: Top Mining and Extraction Emerging Industries by Number of New Jobs

NAICS	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 % Change
213111	Drilling Oil and Gas Wells	757	1,025	268	35%
211130	Natural Gas Extraction	1,453	1,549	96	7%
213115	Support Activities for Nonmetallic Minerals (except Fuels) Mining	53	71	18	34%
212321	Construction Sand and Gravel Mining	67	82	15	22%
212112	Bituminous Coal Underground Mining	94	99	5	5%

Source: EMSI-Economicmodeling.com 2020.1

Table 22 shows the top five jobs in the Tulsa WFDA Mining and Extraction cluster. Secretaries and Administrative Assistants, Except Legal, Medical, and Executive had the highest number of jobs in this cluster with 6,942. General and Operations Managers had the second highest number of jobs in this cluster with 6,940. The tenth highest number of jobs in this cluster is Petroleum Engineers with 438.

Table 22: Top Mining and Extraction Occupations by Number of Current Jobs

SOC	Description	2019 Jobs	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6,942	\$15.81	High school diploma or equivalent	Short-term on-the-job training
11-1021	General and Operations Managers	6,940	\$41.21	Bachelor's degree	None
43-9061	Office Clerks, General	6,503	\$13.94	High school diploma or equivalent	Short-term on-the-job training
53-3032	Heavy and Tractor-Trailer Truck Drivers	5,185	\$20.86	Postsecondary nondegree award	Short-term on-the-job training
13-2011	Accountants and Auditors	4,211	\$34.07	Bachelor's degree	None
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	2,295	\$30.84	High school diploma or equivalent	None
47-2073	Operating Engineers and Other Construction Equipment Operators	1,100	\$18.03	High school diploma or equivalent	Moderate-term on-the-job training
49-9041	Industrial Machinery Mechanics	945	\$24.78	High school diploma or equivalent	Long-term on-the-job training
47-5071	Roustabouts, Oil and Gas	718	\$21.16	No formal educational credential	Moderate-term on-the-job training
17-2171	Petroleum Engineers	438	\$63.45	Bachelor's degree	None

Source: EMSI-Economicmodeling.com 2020.1

Table 23 shows the emerging jobs in Tulsa WFDA Mining and Extraction industry cluster by growth from 2019 to 2024. Heavy and Tractor-Trailer Truck Drivers had the most expected growth with 274. The second highest expected growth is in General and Operations Managers with 243. The job with the tenth largest expected growth is in Rotary Drill Operators, Oil and Gas with 12 jobs.

Table 23: Top Mining and Extraction Emerging Occupations by Number of New Jobs

SOC	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 Change %	Median Hourly Earnings
53-3032	Heavy and Tractor-Trailer Truck Drivers	5,185	5,459	274	5.28%	\$20.86
11-1021	General and Operations Managers	6,940	7,183	243	3.50%	\$41.21
13-2011	Accountants and Auditors	4,211	4,448	237	5.63%	\$34.07
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	2,295	2,436	141	6.14%	\$30.84
47-2073	Operating Engineers and Other Construction Equipment Operators	1,100	1,200	100	9.09%	\$18.03
49-9041	Industrial Machinery Mechanics	945	1,037	92	9.73%	\$24.78
47-5071	Roustabouts, Oil and Gas	718	745	27	3.76%	\$21.16
43-9061	Office Clerks, General	6,503	6,526	23	0.35%	\$13.94
47-5013	Service Unit Operators, Oil, Gas, and Mining	181	194	13	7.18%	\$19.52
47-5012	Rotary Drill Operators, Oil and Gas	327	339	12	3.67%	\$23.21

Source: EMSI-Economicmodeling.com 2020.1

Professional Services

In 2019 there were 29,903 jobs in the Tulsa WFDA Professional Services Industry Cluster with average earnings of \$93,854. Based on demand projections jobs within the Professional Services Industry Cluster will decrease by 262 jobs totaling 30,165 jobs by the year 2024.

Shown in Table 24 is the top industries in the Tulsa WFDA Professional Services Industry Cluster. Commercial Banking had the highest number of job with 5,196. Management of Companies and Enterprises the second highest number of jobs with 5,095. The tenth highest number of jobs is in Sales Financing at 635.

Table 24: Top Professional Services Industries by Number of Current Jobs

NAICS	Description	2019 Jobs	Avg. Earnings Per Job
52211	Commercial Banking	5,196	\$95,377
55111	Management of Companies and Enterprises	5,095	\$98,545
54121	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	4,697	\$97,691
54151	Computer Systems Design and Related Services	2,987	\$87,182
51731	Wired and Wireless Telecommunications Carriers	2,666	\$99,678
52411	Direct Life, Health, and Medical Insurance Carriers	1,782	\$77,364
52229	Other Nondepository Credit Intermediation	1,102	\$75,866
52412	Direct Insurance (except Life, Health, and Medical) Carriers	1,093	\$92,524
52213	Credit Unions	994	\$57,767
52222	Sales Financing	635	\$47,361

Source: EMSI-Economicmodeling.com 2020.1

Table 25 is the emerging occupations in the Tulsa WFDA Professional Services industry cluster with the largest change from 2019-2024. Computer Systems Design and Related Services had the highest expected growth with 972 jobs. The second highest expected growth was found in Accounting, Tax Preparation, Bookkeeping, and Payroll Services with 446 jobs. The tenth highest expected growth was in Internet Publishing and Broadcasting and Web Search Portals with 18 jobs.

Table 25: Top Professional Services Emerging Industries by Number of New Jobs

NAICS	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 % Change
54151	Computer Systems Design and Related Services	2,987	3,959	972	33%
54121	Accounting, Tax Preparation, Bookkeeping, and Payroll Services	4,697	5,143	446	9%
52229	Other Nondepository Credit Intermediation	1,102	1,402	300	27%
52411	Direct Life, Health, and Medical Insurance Carriers	1,782	1,938	156	9%
52222	Sales Financing	635	750	115	18%
52213	Credit Unions	994	1,061	67	7%
51791	Other Telecommunications	478	543	65	14%
51741	Satellite Telecommunications	106	163	57	54%
52239	Other Activities Related to Credit Intermediation	368	405	37	10%
51913	Internet Publishing and Broadcasting and Web Search Portals	132	150	18	14%

Source: EMSI-Economicmodeling.com 2020.1

Table 26 shows the top jobs in the Tulsa WFDA Professional Services cluster. Customer Service Representatives had the highest number of jobs in this cluster with 9,100. Secretaries and Administrative Assistants, Except Legal, Medical, and Executive had the second highest number of jobs in this cluster with 6,942. The tenth highest number of jobs in this cluster is Billing and Posting Clerks with 1,959.

Table 26: Top Professional Services Occupations by Number of Current Jobs

SOC	Description	2019 Jobs	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
43-4051	Customer Service Representatives	9,100	\$15.08	High school diploma or equivalent	Short-term on-the-job training
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	6,942	\$15.81	High school diploma or equivalent	Short-term on-the-job training
11-1021	General and Operations Managers	6,940	\$41.21	Bachelor's degree	None
43-9061	Office Clerks, General	6,503	\$13.94	High school diploma or equivalent	Short-term on-the-job training
43-3031	Bookkeeping, Accounting, and Auditing Clerks	5,998	\$20.15	Some college, no degree	Moderate-term on-the-job training
43-1011	First-Line Supervisors of Office and Administrative Support Workers	5,248	\$24.80	High school diploma or equivalent	None
13-2011	Accountants and Auditors	4,211	\$34.07	Bachelor's degree	None
41-3099	Sales Representatives, Services, All Other	2,961	\$23.57	High school diploma or equivalent	Moderate-term on-the-job training
43-4171	Receptionists and Information Clerks	2,589	\$14.13	High school diploma or equivalent	Short-term on-the-job training
43-3021	Billing and Posting Clerks	1,959	\$16.62	High school diploma or equivalent	Moderate-term on-the-job training

Source: EMSI-Economicmodeling.com 2020.1

Table 27 shows the emerging jobs in the Tulsa WFDA Professional Services industry cluster by growth from 2019 to 2024. Software Developers, Applications had the most expected growth with 262. The second highest expected growth is in General and Operations Managers with 243. The job with the tenth largest expected growth is in Managers, All Other with 63 jobs.

Table 27: Top Professional Services Emerging Occupations by Number of New Jobs

SOC	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 Change %	Median Hourly Earnings
15-1132	Software Developers, Applications	1,224	1,486	262	21.40%	\$41.46
11-1021	General and Operations Managers	6,940	7,183	243	3.50%	\$41.21
13-2011	Accountants and Auditors	4,211	4,448	237	5.63%	\$34.07
43-4171	Receptionists and Information Clerks	2,589	2,757	168	6.49%	\$14.13
13-1199	Business Operations Specialists, All Other	505	656	151	29.88%	\$33.71
11-3031	Financial Managers	1,632	1,770	138	8.46%	\$53.08
13-1161	Market Research Analysts and Marketing Specialists	1,452	1,559	107	7.37%	\$26.90
43-3021	Billing and Posting Clerks	1,959	2,058	99	5.05%	\$16.62
13-1111	Management Analysts	1,184	1,257	73	6.16%	\$41.41
11-9199	Managers, All Other	441	504	63	14.28%	\$50.24

Source: EMSI-Economicmodeling.com 2020.1

Industrial

In 2019 there were 36,237 jobs in the Tulsa WFDA Industrial Industry Cluster with average earnings of \$69,491. Based on demand projections jobs within the Industrial Industry Cluster will increase by 4,380 jobs totaling 40,617 jobs by the year 2024.

Shown in Table 28 is the top industries in the Tulsa WFDA Industrial Cluster. Aircraft Manufacturing had the highest number of job with 6,929. Power Boiler and Heat Exchanger Manufacturing had the second highest number of jobs with 3,260. The tenth highest number of jobs is in Heavy Duty Truck Manufacturing at 1,057.

Table 28: Top Industrial Industries by Number of Current Jobs

NAICS	Description	2019 Jobs	Avg. Earnings Per Job
336411	Aircraft Manufacturing	6,929	\$112,903
332410	Power Boiler and Heat Exchanger Manufacturing	3,260	\$88,558
333132	Oil and Gas Field Machinery and Equipment Manufacturing	2,481	\$91,657
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	1,802	\$61,095
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	1,773	\$80,461
332710	Machine Shops	1,709	\$60,241
335220	Major Household Appliance Manufacturing	1,703	\$60,030
333318	Other Commercial and Service Industry Machinery Manufacturing	1,166	\$96,208
333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing	1,079	\$101,242
336120	Heavy Duty Truck Manufacturing	1,057	\$67,398

Source: EMSI-Economicmodeling.com 2020.1

Table 29 is the emerging occupations in the Tulsa WFDA in the Industrial cluster with the largest change from 2019-2024. Aircraft Manufacturing had the highest expected growth with 3,210 jobs. The second highest expected growth was found in Other Aircraft Parts and Auxiliary Equipment Manufacturing 503 jobs. The tenth highest expected growth was in Motor Vehicle Body Manufacturing with 67 jobs.

Table 29: Top Industrial Emerging Industries by Number of New Jobs

NAICS	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 % Change
336411	Aircraft Manufacturing	6,929	10,139	3,210	46%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	1,773	2,276	503	28%
332410	Power Boiler and Heat Exchanger Manufacturing	3,260	3,544	284	9%
335220	Major Household Appliance Manufacturing	1,703	1,912	209	12%
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	1,802	1,991	189	10%
332420	Metal Tank (Heavy Gauge) Manufacturing	329	449	120	36%
331222	Steel Wire Drawing	226	304	78	35%
331210	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel	932	1,009	77	8%
331511	Iron Foundries	284	354	70	25%
336211	Motor Vehicle Body Manufacturing	128	195	67	52%

Source: EMSI-Economicmodeling.com 2020.1

Table 30 shows the top jobs in the Tulsa WFDA Industrial cluster. Customer Service Representatives had the highest number of jobs in this cluster with 9,100. Laborers and

Freight, Stock, and Material Movers, Hand had the second highest number of jobs in this cluster with 7,572. The tenth highest number of jobs in this cluster is Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products with 2,919.

Table 30: Top Industrial Occupations by Number of Current Jobs

SOC	Description	2019 Jobs	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training
43-4051	Customer Service Representatives	9,100	\$15.08	High school diploma or equivalent	Short-term on-the-job training
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	7,572	\$13.50	No formal educational credential	Short-term on-the-job training
11-1021	General and Operations Managers	6,940	\$41.21	Bachelor's degree	None
43-9061	Office Clerks, General	6,503	\$13.94	High school diploma or equivalent	Short-term on-the-job training
53-3032	Heavy and Tractor-Trailer Truck Drivers	5,185	\$20.86	Postsecondary nondegree award	Short-term on-the-job training
43-5081	Stock Clerks and Order Fillers	4,949	\$11.65	High school diploma or equivalent	Short-term on-the-job training
51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	4,538	\$15.51	High school diploma or equivalent	Moderate-term on-the-job training
49-9071	Maintenance and Repair Workers, General	4,209	\$16.85	High school diploma or equivalent	Moderate-term on-the-job training
51-4121	Welders, Cutters, Solderers, and Brazers	3,104	\$22.43	High school diploma or equivalent	Moderate-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	2,919	\$21.69	High school diploma or equivalent	Moderate-term on-the-job training

Source: EMSI-Economicmodeling.com 2020.1

Table 25 shows the emerging jobs in the Tulsa WFDA Industrial cluster by growth from 2019 to 2024. General and Operations Managers had the most expected growth with 243. The second highest expected growth is in Industrial Production Managers with 52. The job with the tenth largest expected growth is in Computer Hardware Engineers with 9 jobs.

Table 31: Top Industrial Emerging Occupations by Number of New Jobs

SOC	Description	2019 Jobs	2024 Jobs	2019 - 2024 Change	2019 - 2024 Change %	Median Hourly Earnings
11-1021	General and Operations Managers	6,940	7,183	243	3.50%	\$41.21
11-3051	Industrial Production Managers	602	654	52	8.64%	\$46.83
11-9041	Architectural and Engineering Managers	610	679	69	11.31%	\$62.98
11-9121	Natural Sciences Managers	69	74	5	7.28%	\$51.14
11-9199	Managers, All Other	441	504	63	14.28%	\$50.24
13-1028	Buyers and Purchasing Agents	1,439	1,478	39	2.71%	\$28.04
15-1132	Software Developers, Applications	1,224	1,486	262	21.40%	\$41.46
15-1133	Software Developers, Systems Software	493	649	156	31.65%	\$40.80
15-1199	Computer Occupations, All Other	626	675	49	7.83%	\$32.59
17-2061	Computer Hardware Engineers	24	33	9	37.35%	\$45.19

Source: EMSI-Economicmodeling.com 2020.1