



TENNESSEE'S ECONOMY

2022-2023



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Table of Contents

Executive Summary.....	1
Tennessee's Economy 2022 (graphic).....	5
Tennessee Employment 2022.....	6
Tennessee Labor Force and Demographics	9
Tennessee Wages 2022	10
Tennessee Long Term Job Outlook to 2030.....	12
Significant Occupational Shortages	17
Detailed Regional Analysis – West Region.....	23
Detailed Regional Analysis – Middle Region	40
Detailed Regional Analysis – East Region	57
Apprenticeships.....	72
Emerging Industries and Conclusion	77
Appendix – Occupations in Demand by Region 2022	80

Tables

Table 1: Tennessee Industry Employment, 2017–2022	7
Table 2: Advertised Tools and Technologies Table for Tennessee	8
Table 3: Advertised Job Certifications Table for Tennessee.....	8
Table 4: Occupational Projections by Major Occupational Group in Tennessee for 2020–2030.....	15
Table 5: Top Supply Gaps – Postsecondary Education through the Associate Degree.....	17
Table 6: Top Supply Gaps – High School, High Wage.....	19
Table 7: Top Supply Gaps: Bachelor's Degree Occupations.....	20
Table 8: Elementary and Secondary Teachers Have Few Jobs and Applications Posted.....	22
Table 9: Transportation and Healthcare and Social Assistance Services Added the Most Jobs 2018–2022.....	28
Table 10: Computer and Mathematical, Business and Finance, Community and Social Service Add the Largest Percent of New Jobs 2015–2022	31
Table 11: Employers by Number of Job Openings	33
Table 12: West Region Labor Force	34
Table 13: West Region Educational Attainment, 2021	35
Table 14: West Region Disability Status of Those in the Labor Force.....	36
Table 15: West Region Disability Status of Those Not in the Labor Force	37
Table 16: Youth Unemployment 2021	38
Table 17: West TN Region – Significant Barriers to Employment.....	39
Table 18: Fastest Growing Industries in the Middle Region are Transportation and Warehousing and Construction	45
Table 19: Middle Region Occupational Job Growth 2015–2022	48
Table 20: Top Employers Posting Jobs – Middle Region	50
Table 21: Middle Region Labor Force.....	51
Table 22: Middle Region Educational Attainment, 2021.....	52
Table 23: Disability Status of Those in the Labor Force, 2021	53
Table 24: Disability Status of Those Not in the Labor Force, 2021.....	54
Table 25: Middle Region Youth Unemployment 2021	55
Table 26: Middle TN Region – Significant Barriers to Employment.....	56
Table 27: East Region Among Largest Percent Change in Jobs Include Professional Scientific and Technical Services, Real Estate and Transportation and Warehousing	62

Table 28: East Region Job Growth 2015-2022	65
Table 29: Top Employers Posting Jobs East Region.....	66
Table 30: East Region Labor Force 2021	67
Table 31: East Region Educational Attainment 2021	68
Table 32: East Region Disability Status of Those in the Labor Force 2021.....	69
Table 33: East Region Disability Status of Those Not in the Labor Force, 2021	69
Table 34: East Region Youth Unemployment 2021	70
Table 35: East TN Region – Significant Barriers to Employment	71
Table 36: East LWDA Tops the Region in the Number of Registered Apprenticeship Sponsors with Completers in 2022	72
Table 37: Northern Middle LWDA has a Wide Variety of Apprenticeship Sponsors with Completers in 2022 in the Middle Region	73
Table 38: Greater Memphis has Nearly 150 Apprenticeship Completers 2022 in the West Region.....	74
Table 39: Electrician is the Occupation for which Most Apprenticeships are Completed	75-76
Appendix: Occupations in Demand by Region 2022	80-86

Figures

Figure 1: Tennessee Job Growth 2021-2022.....	6
Figure 2: United States and State of Tennessee Labor Force Participation Rate Comparison	9
Figure 3: LWDA Median Hourly Wages 2022	10
Figure 4: TN Major Occupation Group Median Hourly Wages 2022	11
Figure 5: Tennessee Long Term Job Outlook to 2030.....	12
Figure 6: Most Rapid Annual Average Growth Rates in TN 2020-2030.....	14
Figure 7: TN Annual Total Openings, 2020-2030	16
Figure 8: West Region Largest Industries 2022	24
Figure 9: West Region Top Industry Earnings 2022	27
Figure 10: West TN Region Largest Occupations.....	29
Figure 11: West TN Top Occupational Earnings 2022.....	30
Figure 12: West Region In-Demand Job Certifications June 2023	32
Figure 13: West TN Region Top in Demand Tools or Technologies 2022	32
Figure 14: West TN Region Top Posted Openings.....	33
Figure 15: Middle Region Largest Industries 2022.....	41
Figure 16: Middle Region Top Industry Earnings 2022.....	44
Figure 17: Middle TN Region Largest Occupations 2022.....	46
Figure 18: Middle TN Region Occupational Earnings 2022.....	47
Figure 19: Middle Region In-Demand Job Certifications.....	49
Figure 20: Middle Region In-Demand Tools or Technologies.....	49
Figure 21: Middle Region Top Posted Occupations 2023.....	50
Figure 22: East Region Largest Industries 2022.....	58
Figure 23: East Region Top Industry Earnings 2022.....	61
Figure 24: East TN Region Largest Occupations 2022	63
Figure 25: East TN Region Top Occupational Earnings 2022	64
Figure 26: East Region In-Demand Job Certifications 2023.....	66
Figure 27: East Region In-Demand Tools or Technologies 2023	66
Figure 28: East Region Top Posted Openings	67
Figure 29: Employment % in major industries – 2022	78

Executive Summary

Tennessee's economy continued a steady recovery from the pandemic downturn in 2020 by returning to total nonfarm employment in 2022 of 3,238,559 and an average annual unemployment rate of 3.4 percent. Annual average employment in 2022 climbed above that of 2019, which brought it above the pre-pandemic level. The January 2022 annual average unemployment rate was higher than the 3.4 percent annual average rate in 2019, but by February 2022 it had dropped to 3.4 percent. The Tennessee labor force increased by 0.7 percent from 2021 to 2022 to 3,352,037 as the economy continued to recover.

The Tennessee Economy in 2022: Nonfarm employment in Tennessee (by place of residence) increased by 1.7 percent from 2021 to 2022, adding 53,296 jobs over the year (see summary). Metropolitan growth (by place of employment) was positive for all major metropolitan areas with Memphis, Nashville, Knoxville, and Chattanooga all gaining employment by three percent or more. The Nashville MSA showed the greatest increase in employment. Employment increased in 89 of the 95 counties. The number of establishments grew by 10.1 percent and nominal total payroll increased by 9.9 percent to 196.1 billion dollars. The average annual median wage (not adjusted for inflation) also increased by 5.9 percent to \$39,929. The average hourly wage for production workers was \$20.38.

In June 2022 the TDLWD job bank, jobs4tn.gov, listed an average of 0.48 unemployed workers for each job opening, making it more difficult for employers to find workers in the economy. Although the unemployment rate for veterans was below the state average, rates for youth and those with disabilities, as well as the poverty rate, were still in the double digits. There was a significant increase in the unemployment rate of those under the poverty level.

Statewide Industry Employment 2022: Manufacturing jobs increased by 4.4 percent, nearly as rapidly as employment in the private service-providing sector. In services, the information and arts and entertainment industries showed the largest growth rates in the state, at 15.5% and 15.8% respectively. Other industries that experienced significant growth rates over the past year were accommodation and food services, mining, logging, and construction and professional and business services.

Manufacturing, retail trade, and healthcare and social assistance remained the largest sectors in total employment in 2022. Over the five-year period from 2017 to 2022, the industry sectors adding the most jobs were accommodation and food services; mining, logging, and construction; transportation, warehousing, and utilities; and professional, scientific, and technical services.

Labor Force: The annual average unemployment rate for the U.S. in 2012 was 8.0 percent and dropped to 5.5 percent in 2022. Tennessee's annual average unemployment rate in 2012 was 8.0 percent and declined to 3.4 percent in 2022, remaining below the U.S. rate. Tennessee's June 2023 seasonally adjusted unemployment rate declined to 3.2 percent. In June 2023, the U.S. labor force participation rate was 62.6 percent, compared to Tennessee's rate of 59.4 percent.

Tennessee Wages and Income 2022: Among the 22 major occupational groups, median wages increased for 21 of the groups. The only group experiencing a decline in median hourly wages was community and social service, with a reduction from \$22.05 to \$21.86. In the LWDAs, Northern Middle and Greater Memphis had median hourly wages slightly higher than the state.

Tennessee Safety 2021: The total recordable incidence rate for nonfatal occupational illnesses and injuries for all industries in Tennessee per 100 full-time equivalent workers during 2021 was estimated to be 2.6. The total recordable rate for private industry was 2.7 and the total recordable rate for public sector industries was 2.5, declining from 3.6 percent in 2020.

Tennessee Long Term Outlook to 2030: From a base of 3.2 million jobs in 2020, total employment for Tennessee, including agricultural, self-employed, and private household workers, is expected to grow to 3.7 million by 2030, expecting to increase by 0.9 percent annually. The high growth rate includes recovery from the lower employment base in 2020 compared to 2019.

Significant Occupational Shortages: Comparing the number of active resumes in 2022 on the jobs4tn.gov website with the number of job openings listed in the system, the top 15 occupations with the largest supply gaps for occupations requiring postsecondary education through associate's degrees, bachelor's degrees, and higher-paying high school occupations are listed. Occupational shortages include many occupations in health care, transportation, mechanical and technical areas, engineering, production and construction supervisors, and information technology. Better data on teacher vacancies is a continuing need.

Detailed Regional Analysis: Summaries of key labor force and economic trends for the West, Middle, and East Regions are included in this section. Detailed discussions include top industries, occupations, industry and occupational growth, top employers posting jobs, top tools and technologies, and the educational pipeline for the area. Each section includes a detailed description of labor force trends as well as updated data on barriers to employment presenting challenges and opportunities in each region.

West Region

- **Most major indicators** continued to increase (based on place of residence) in the West Region from 2021-2022. Nonfarm employment increased by 0.4 percent compared to the previous year's 2.8 percent, and lower than the state's 1.7 percent. By place of residence, nearly 3,000 jobs were created, about 5 percent of all new jobs in the state. More jobs, proportionately, are in the metro areas. By place of work, employment in the Memphis metropolitan area increased from 2021 to 2022 by 2.9 percent, and Jackson by 1.8 percent. In the West, total payroll increased by 4.4 percent compared to the state's 9.9 percent. Average wages for production workers increased to \$19.92 and the labor force increased by 8,036. Youth unemployment increased from 15.8 percent to 17.1 and is still higher than the state rate of 12.5 percent.
- The **three largest industries** are health care and social assistance, transportation and warehousing, and manufacturing.

- Industries **adding the most jobs** from 2018 to 2022 included transportation and warehousing (over 8,500), health care and social assistance (6,400), and professional, scientific, and technical services (over 2,200).
- The **population** decreased by 3,886 from 2021-2022.
- The **labor force challenges** of reducing poverty and increasing educational attainment need to be key targets of workforce policy. In 2021 the regional number below poverty was 263,430. White individuals with a bachelor's degree or higher were 32.62 percent of the population over the age of 25, which was higher than the state rate of 30.12 percent. Black individuals were at 58 percent and Hispanic individuals at 50 percent of the state rate, pointing to the need to increase college-going for both groups in the West Region.
- Significant **barriers to employment** include high youth unemployment, particularly in the Greater Memphis LWDA. The West Region includes 37 percent of individuals exiting TANF, 28 percent of those below the poverty line, 30 percent of the prison and jail population, 25 percent of the youth, and 26 percent of the single parents.
- **Major economic investments** in green energy will provide a boost to employment and skill gains in this region, with the Ford electric vehicle plant planning to provide 3,300 jobs, the SK On electric battery plant 2,500 jobs, and the Magna electric vehicle plant 1,300 jobs. **Jobs most in demand** in the region are listed in the Appendix.

Middle Region

- **Most major indicators** increased (based on place of residence) from 2021 to 2022, with the Middle Region leading the state with 2.9 percent in employment growth compared to the state's 1.7 percent. By place of residence, 41,000 jobs were created, more than 3 out of 4 new jobs in the state. By place of work, jobs in the major metropolitan area of Clarksville-Hopkinsville, TN-KY-MSA grew 4 percent, and in the Nashville MSA by 6.6 percent. In the region, total payroll increased by 8.8 billion. Average hourly wages for production workers topped \$20.00 in 2022. The labor force increased by 29,787, supporting job expansion. Youth unemployment increased slightly from 2020 to 2021 to 9.89 percent, still lower than the state rate of 10.2 percent.
- The **three largest industries** are healthcare and social assistance, retail trade, and manufacturing, followed by accommodation and food services.
- The **industries adding the most jobs** included transportation and warehousing (20,657), construction (13,705), and professional, scientific, and technical services (13,049).
- **The population** increased by an estimated 53,165 from 2021 to 2022, with more than 36,768 in the Northern Middle Region.
- **The labor force challenges:** The labor force participation rate in the Northern Middle LWDA (68.4 %) was 11 percent points higher than the state rate and 10 percentage points higher than the Southern Middle LWDA. In contrast, the number of individuals below poverty in the region was 330,935, with 2 of every 3 of these persons in the Northern Middle LWDA. Reducing the number of individuals in poverty and increasing wages of the low-income working population needs to be an important workforce concern.
- The **educational attainment** (percent of the population attaining a bachelor's degree or higher) of the White, Black, and Hispanic population is greater for each group in this region than in the state; however, the rate for the Hispanic population is just over half of that of the White

population, an area of concern for workforce policy.

- **Significant barriers to employment:** The Middle Region has 38 percent of the single parents in the state, 43 percent of youth aged 15 to 24, and 35 percent of the prison and jail population. The region has about 500 transitioning in the next 24 months from TANF.
- **Major economic investments:** Major investments **include** green energy investments of lithium-ion battery manufacturing (Ultium LLC), 1300 jobs; medical products manufacturing by the Puritan and Life Technologies, 632 and 1400 jobs, respectively; warehouse distribution centers—Amazon (500 jobs) and Chewy (1,200 jobs), Oracle (software development) (8,500 jobs), and Southwest Airlines (1,300 jobs). Electric vehicle production is expanding, as are outpatient medical facilities. **Jobs most in demand** in the region are listed in the Appendix.

East Region

- **Most major indicators increased** (based on place of residence) from 2021 to 2022, with East Region employment growing at nearly 1 percent compared to the state's 1.7 percent. By place of residence, nearly 10,000 jobs were created, nearly one of every five jobs created in the state. By place of work, jobs in the major metropolitan area of Knoxville grew by 4.6 percent and in the Chattanooga MSA, by 4 percent. In the region, total payroll increased by 4.9 billion. Average hourly wages for production workers topped \$20.00 in 2022. The labor force increased by nearly 4,500 workers, supporting modest job expansion. Youth unemployment was slightly lower from 2020 to 2021 at 10.6 percent.
- The **three largest industries** are manufacturing, healthcare and social assistance, and retail trade, followed by accommodation and food services.
- **Industries adding the most new jobs** from 2018 to 2022 were manufacturing; professional, scientific, and technical services; and transportation and warehousing.
- **The population** in the region increased by 33,989 from 2021 to 2022; all LWDA's had increases.
- **The labor force challenges:** The labor force participation rate in the East LWDA was the highest in the region; the rate in the Northeast was the lowest at 53.1. The number of individuals below poverty in the region was 343,879, with half of these individuals in the East LWDA. Again, reducing the number of individuals in poverty and increasing wages of the low-income working population needs to be an important workforce concern.
- The **educational attainment** (percent of the population attaining a bachelor's degree or higher) of the White, Black, and Hispanic population is lower for each group in this region than in the state, making increasing college-going for each group a workforce priority which could also increase the labor force participation rate.
- **Significant barriers to employment:** The East Region has 35 percent of the single parents in the state, 35 percent of youth aged 15 to 24, and 39 percent of the prison and jail population. The region has 633 transitioning in the next 24 months from TANF.
- **Major economic investments:** Selected investments included continued expansion of the Volkswagen plant in the Chattanooga area as electric vehicle production was added; Smith and Wesson firearms manufacturing (750 jobs); and an Amazon distribution center (800 jobs). **Jobs most in demand in the region** are listed in the Appendix.

Tennessee's Economy 2022

 <p>Employment</p>	<p>Total Nonfarm Employment 2022: 3,238,559 1.7% 2021: 3,185,263 Strong</p>	<p>New Jobs 2022: 53,296 2021: 129,433 Strong</p>	<p>MSA Employment 2021-2022 Nashville: 6.6% Memphis: 2.9% Chattanooga: 4.0% Knoxville: 4.8%</p>
 <p>Employers</p>	<p>Total Number of Establishments 2022:225,580 10.1% 2021: 204,923 Strong</p>	<p>Total Payroll 2022: \$196.1B 9.9% 2021: \$178.5B Strong</p>	<p>Counties that Increased Employment 2022: 89 2021: 78</p>
 <p>Wages & Income</p>	<p>Average Annual Wage 2022: \$52,817 7% 2021:\$49,330 Strong</p>	<p>State Median Wage 2022: \$39,929 5.9% 2021: \$37,700 Strong</p>	<p>Average Hourly Wages - Production Workers 2022: \$20.38 2021: \$19.32 Strong</p>
 <p>Labor Force & Demographics</p>	<p>Unemployment Rate 2022: 3.4% 15.6% 2021: 4.3% Strong</p>	<p>Labor Force 2022: 3,352,037 2021: 3,327,966 Strong</p>	<p>Unemployment Rates Veterans, 2021: 3.0% Youth 2021: 10.2% With Disability, 2021: 15.3% % in Poverty, 2021: 22.34%</p>
 <p>Job Outlook</p>	<p>Ratio of Unemployed to Job Openings June 2022: 0.48 June 2021: 0.55 Strong</p>	<p>Projected Annual Growth Rate, All Occupations 2020-2030: 0.94% 2018-2028: 0.71% Strong</p>	<p>Projected Job Openings 2020-2030: 4,517,230 2018-2028: 4,154,529 Strong</p>
 <p>Job Safety</p>	<p>Fatal Occupational Injuries 2021: 132 2020: 142 Stronger</p>	<p>Total Nonfatal Occupational Illnesses and Injuries, Public Sector 2021: 2.5 per 100 FTE 2020: 3.6 per 100 FTE Challenge</p>	<p>Total Nonfatal Occupational Illnesses and Injuries 2021: 2.6 per 100 FTE 2020: 2.7 per 100 FTE Challenge</p>

Tennessee Overview



Tennessee Employment 2022

Based on place of employment, Tennessee’s average annual nonfarm employment increased by 4.55 percent from 2021 to 2022. Goods producing jobs increased at a rate of 5.3 percent compared to 5.0 percent for private service-providing jobs. Jobs in the government sector grew by 1.25 percent. In the goods producing sector, mining, logging, and construction added 10,700 jobs while manufacturing added 15,400 jobs.

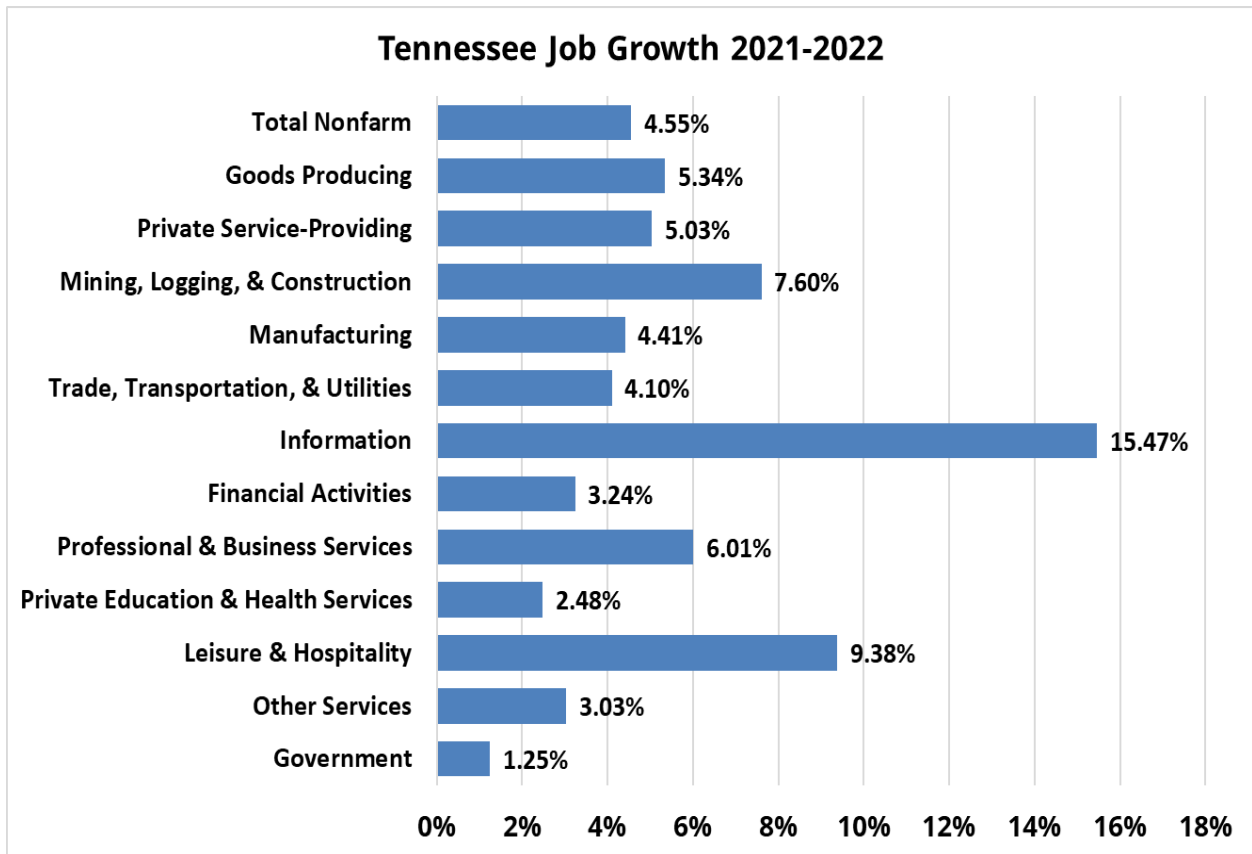


Figure 1

Source: TDLWD, WIR²ED Division, Current Employment Statistics

Table 1: Tennessee Industry Employment, 2017-2022

Industry Employment (in thousands)	2017			2021			2022			2021-2022		2017-2022	
Total Nonfarm	3,016.4	3,103.5	3,244.8	141.3	4.6%	228.4	7.6%						
Goods Producing	471.4	490.2	516.4	26.2	5.3%	45.0	9.5%						
Mining, Logging, & Construction	124.6	140.7	151.4	10.7	7.6%	26.8	21.5%						
Manufacturing	346.8	349.5	364.9	15.4	4.4%	18.1	5.2%						
Durable Goods Manuf.	222.2	221.5	232.5	11.0	5.0%	10.3	4.6%						
Non Durable Goods Manufacturing	124.6	128.0	132.4	4.4	3.4%	7.8	6.3%						
Private Service-Providing	2,114.7	2,181.8	2,291.6	109.8	5.0%	176.9	8.4%						
Trade, Transportation, & Utilities	616.4	650.6	677.3	26.7	4.1%	60.9	9.9%						
Wholesale Trade	119.3	121.3	129.5	8.2	6.8%	10.2	8.5%						
Retail Trade	332.9	331.3	341.0	9.7	2.9%	8.1	2.4%						
Transportation, Warehousing, & Utilities	164.2	197.9	206.8	8.9	4.5%	42.6	25.9%						
Information	46.3	47.2	54.5	7.3	15.5%	8.2	17.7%						
Financial Activities	162.7	169.7	175.2	5.5	3.2%	12.5	7.7%						
Finance & Insurance	123.0	128.9	132.4	3.5	2.7%	9.4	7.6%						
Real Estate, Rental & Leasing	39.8	40.7	42.8	2.1	5.2%	3.0	7.5%						
Professional & Business Services	410.7	437.8	464.1	26.3	6.0%	53.4	13.0%						
Professional, Scientific & Technical Services	137.8	158.3	170.7	12.4	7.8%	32.9	23.9%						
Management of Companies & Enterprises	46.1	51.8	54.1	2.3	4.4%	8.0	17.4%						
Admin, Support, Waste Mgt & Remediation Services	226.8	227.6	239.4	11.8	5.2%	12.6	5.6%						
Private Education & Health Services	435.0	439.9	450.8	10.9	2.5%	15.8	3.6%						
Private Educational Services	60.1	61.6	63.6	2.0	3.2%	3.5	5.8%						
Health Care & Social Assistance	374.9	378.3	387.2	8.9	2.4%	12.3	3.3%						
Leisure & Hospitality	329.2	314.5	344.0	29.5	9.4%	14.8	4.5%						
Arts, Entertainment & Recreation	37.8	37.4	43.3	5.9	15.8%	5.5	14.6%						
Accommodation & Food Services	291.4	277.2	300.7	23.5	8.5%	9.3	3.2%						
Other Services	114.5	122.1	125.8	3.7	3.0%	11.3	9.9%						
Government	430.4	431.5	436.9	5.4	1.3%	6.5	1.5%						
Federal Government	49.1	51.6	52.4	0.8	1.6%	3.3	6.7%						
State Government	98.0	94.6	94.3	-0.3	-0.3%	-3.7	-3.8%						
Local Government	283.3	285.3	290.2	4.9	1.7%	6.9	2.4%						

Source: TDLWD, WIR²ED Division, Current Employment Statistics

With this industry growth, jobs4tn.gov provides a glimpse into the top tools and technologies found most frequently in advertised jobs on the website. Top tools and technologies (shown in table 2) include computer business programs and equipment and warehouse equipment. Top certifications in advertised job listings (table 3) include a variety of medical and pharmacy certifications and those for truck driving, social work, and accounting.

Table 2: Advertised Tools and Technology Table

Tool or Technology	Job Openings
Microsoft (MS) Office	7,813
Cash Register	2,698
Microsoft PowerPoint	2,538
Forklift	2,490
Personal protective equipment	2,091
Motor vehicles	1,912
Microsoft Word	1,606
Structured query language (SQL)	1,583
Hypertext markup language (HTML)	1,343

Source: Online advertised jobs data

Table 3: Advertised Job Certifications for Tennessee

Advertised Certification Group	Job Openings
American Heart Association (AHA) CPR & First Aid Certifications	11,576
Nursing Credentials and Certifications	11,311
Commercial Drivers License (CDL)	2,027
American Institute of CPAs (AICPA) Certifications	1,004
American Organization for Nursing Leadership (AONL) Certifications	597
American Academy of Neurology (AAN) Designations	592
National Registry of Emergency Medical Technicians (NREMT)	469
Social Worker Credentials & Certifications	433
American Red Cross - First Aid Certifications	327
Pharmacy Technician Certification Board (PTCB)	280

Source: Online advertised jobs data



Tennessee Labor Force

United States and State of Tennessee Labor Force Participation Rate Comparison

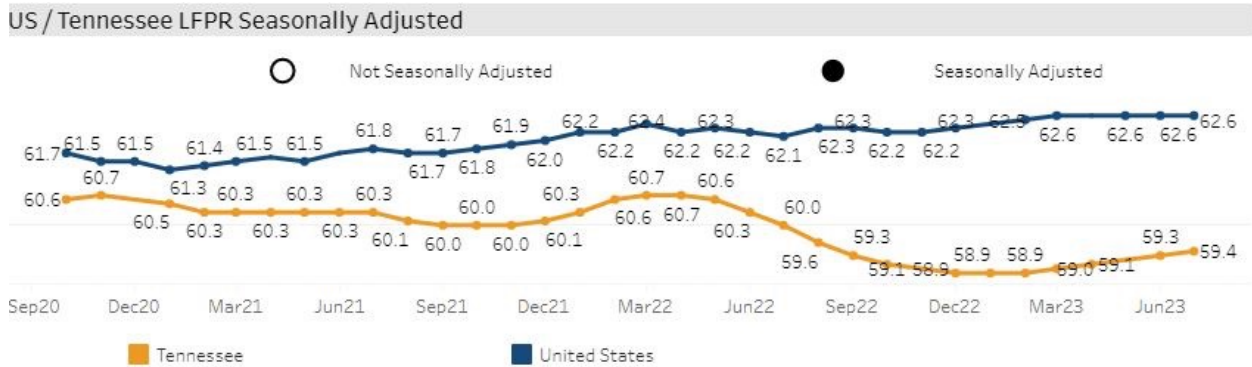


Figure 2

Source: TN Department of Labor and Workforce Development and Bureau of Labor Statistics, July 2023

Tennessee's June 2023 seasonally adjusted unemployment rate was 3.2, lower than the rate of 4.4 percent in June 2021. The U.S. unemployment rate declined from 5.9 percent in June 2021 to 3.6 percent in June 2023. The U.S. annual average rate for 2022 was 3.6 percent, down from 8.1 percent in 2012. Tennessee's annual average unemployment rate dropped from 8.0 percent in 2012 to 3.3 percent in 2023. However, labor force participation has also declined in Tennessee from 61.7 percent in 2012 to 59.7 percent in 2023. U.S. labor force participation also declined from 63.7 percent in 2012 to 62.9 percent in 2023.



Tennessee Wages 2021-2022

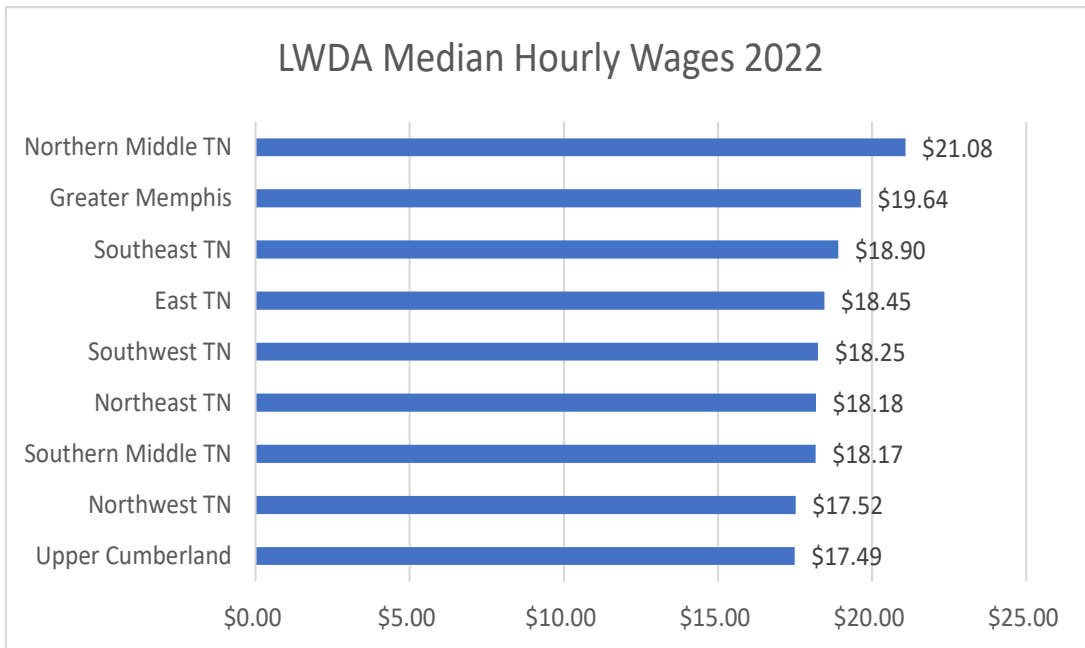


Figure 3
 Source: TDLWD, WIR²ED Division, Occupation Employment and Wages Survey

Median hourly wage growth for Tennessee from 2021 to 2022 averaged 0.7 percent. Among the 22 major occupational groups, median wages increased for 21 of the groups. The largest hourly increase was for legal occupations’ pay (up \$7.86 per hour to \$38.63), followed by construction and extraction (up \$2.66 per hour). Healthcare practitioners and technical occupations were up \$1.34 with increased demand during the post pandemic job market. The three LWDA’s experiencing median hourly wages greater than the state rate of \$19.20 included Northern Middle (\$21.08) and Greater Memphis (\$19.64).

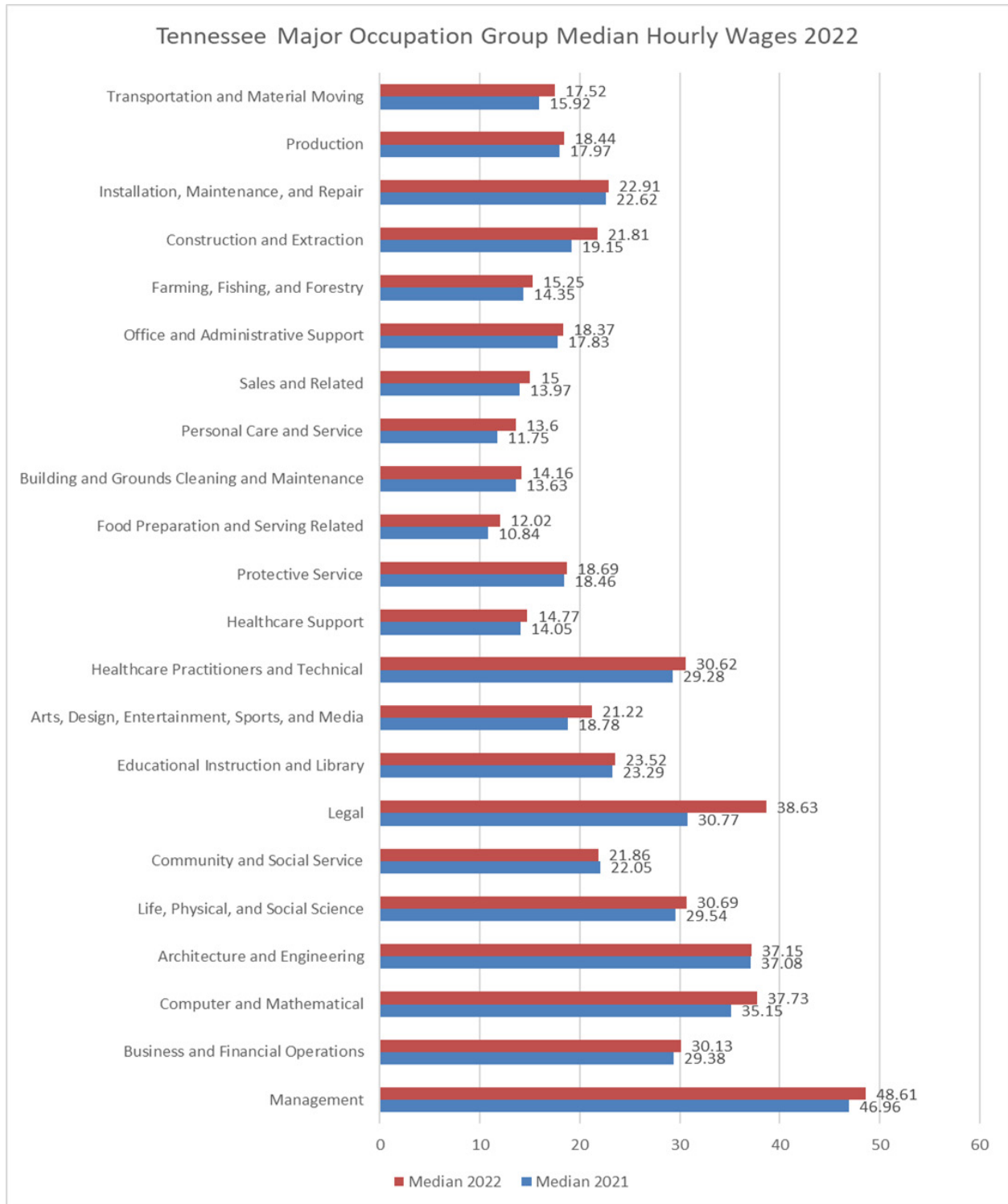


Figure 4

Source: TDLWD, WIR?ED Division, Occupation Employment and Wages Survey, May 2021 and May 2022



Tennessee Long Term Job Outlook to 2030

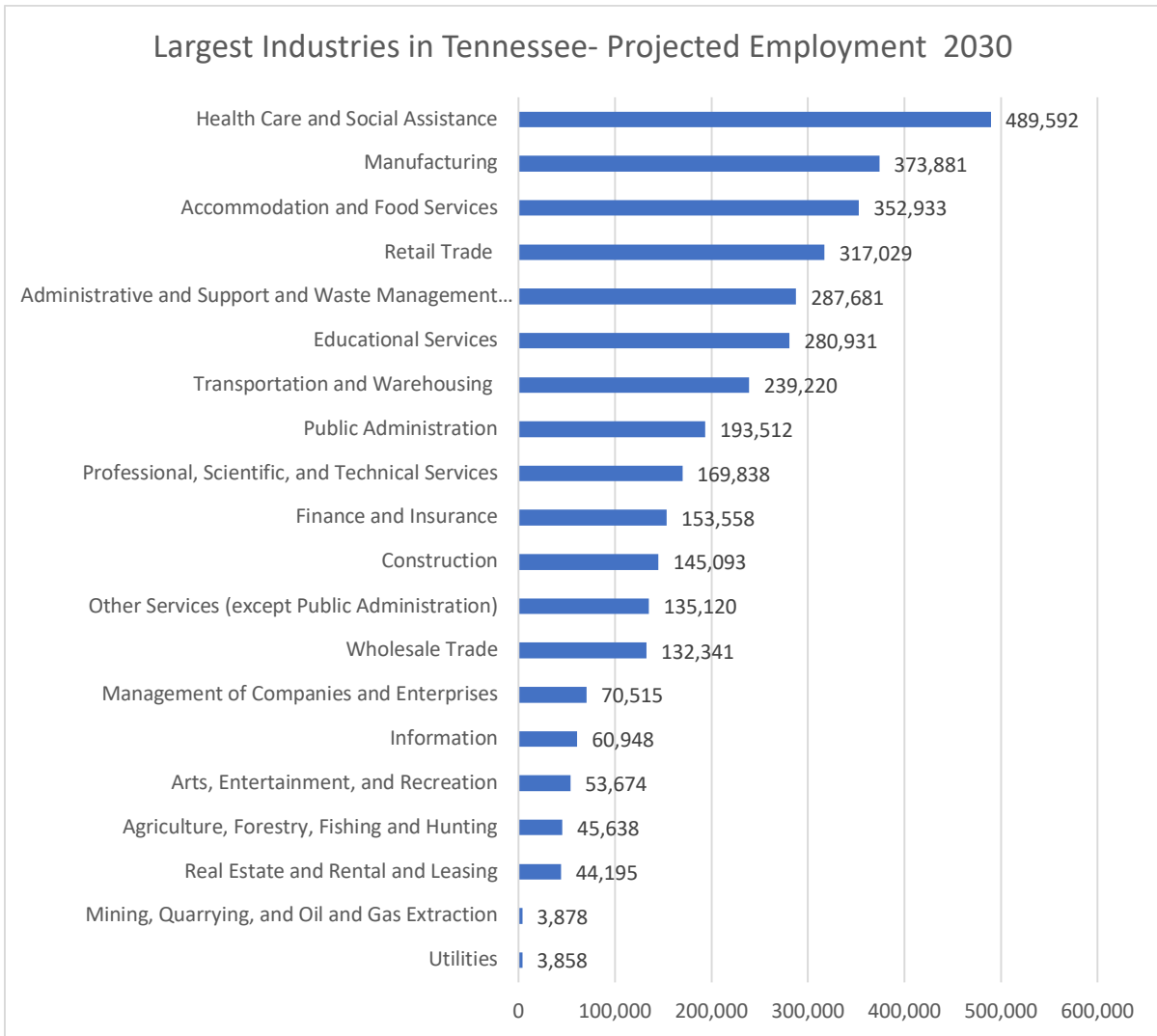


Figure 5

Source: TN Department of Labor and Workforce Development, WIR²ED Division, Tennessee Long-Term Industry Projections 2020-2030

From a base of 3.2 million jobs in 2020, total employment for Tennessee, including agricultural, self-employed, and private household workers, is expected to grow to 3.7 million by 2030. Expected to increase by 0.9 percent annually, as it recovers from lower employment in the base year of 2020 due to the pandemic, Tennessee's economy in the long run is expected to continue expansion in eleven of twelve major industry sectors, with only retail trade expected to decline in employment. The goods-producing industries are expected to expand by 1.25 percent annually and create an estimated 32,775 jobs over the 10- year period.

Starting from 2020 base year employment, arts, entertainment, and recreation is expected to be the fastest-growing industry, as it recovers from pandemic employment losses. Due to recovery from 2020, accommodation and food services is projected to be the fourth most rapidly growing industry. Industries which lost more than 10,000 employees from the first quarter of 2019 to 2020 included:

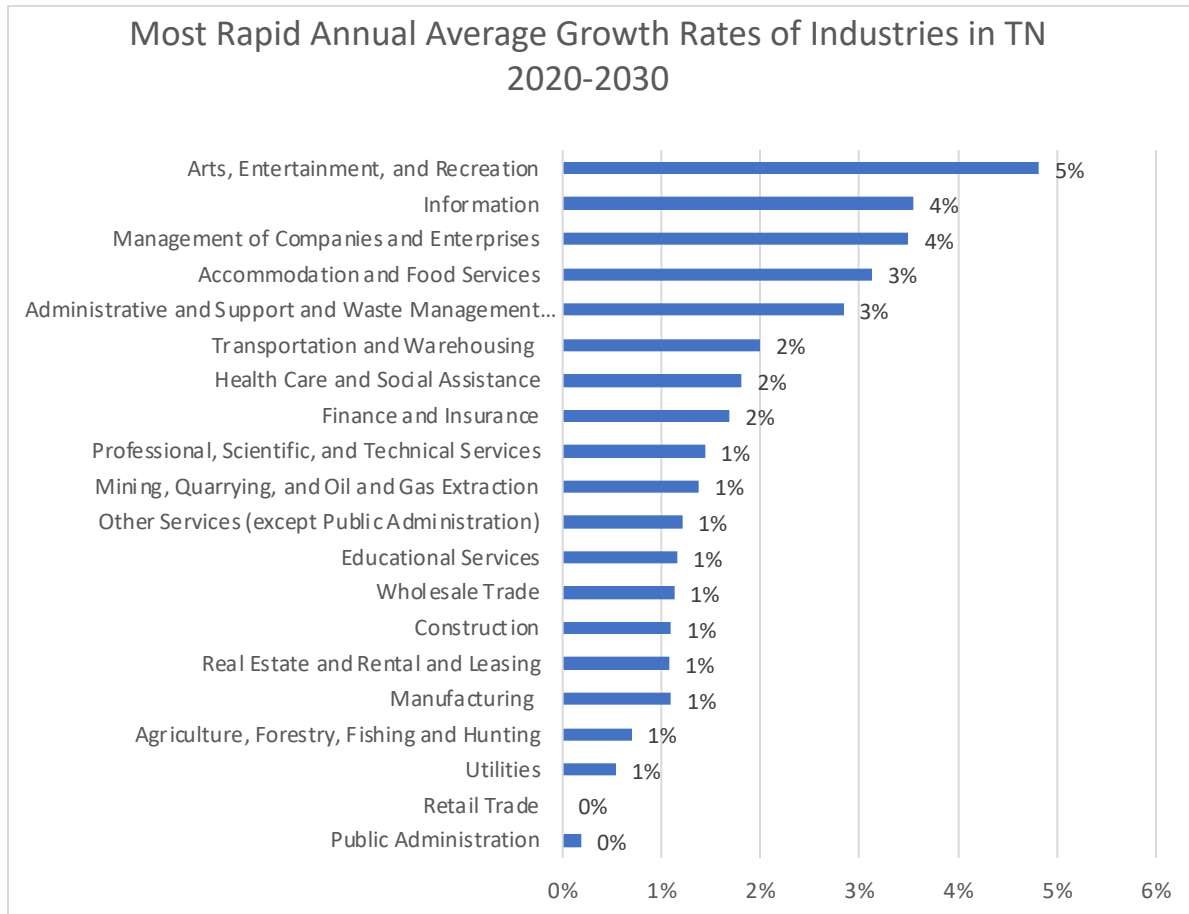
- Accommodation and food services- 48,660
- Manufacturing- 20,800
- Arts, entertainment, and recreation- 11, 340
- Administration and support and waste management- 10,040

Other rapidly growing sectors will include management of companies and enterprises and information, with tech companies planning to locate more employees in Tennessee.

Tennessee's new efforts to manufacture electric vehicles and batteries, expand charging stations across the state, and other initiatives, are expected to propel the manufacturing industry to create nearly 40,000 jobs over the decade, and construction to create nearly 15,000. With the location of additional tech firms, the information industry could create nearly 19,000 jobs.

The services-providing sector is expected to expand at an annual growth rate of 1.7 percent. Other fast-growing services industries will include administrative and support and waste management and remediation and transportation and warehousing. Health care and social assistance will be one of the fastest-growing industries but is also expected to provide the second largest number of new jobs (80,570), over the ten-year period. Educational services will continue to grow at about one percent annually.

With the expansion of e-commerce and changes in work organization, the number of self-employed and unpaid family workers is expected to grow at a slightly lower rate than the average for all employment (0.5 percent annually).

**Figure 6**

Source: TN Department of Labor and Workforce Development, WIR²ED Division, Tennessee Long-Term Industry Projections 2020-2030

The occupational groups expected to add the most new jobs from 2020 to 2030 are listed in the following table, sorted by 2020-2030 occupational change. Almost 520,000 new jobs are expected to be created in Tennessee in the next ten years, although some are jobs returning after the pandemic. The largest number of new jobs by occupational group is for food preparation and serving related jobs, as many of these jobs are being restored after 2020; similarly, some of the office and administrative support and production jobs are returning after 2020 losses.

Other top job-creating groups which did not suffer in the pandemic but will continue their growth include management and transportation and material moving. Healthcare practitioners and technical occupations are the fourth largest group, with healthcare support expected to create close to 37,000 jobs. Business and financial occupations also are forecast to expand. The top five occupational groups with the highest median salaries in 2020 included management, architecture and engineering, computer and mathematical, legal, and life, physical, and social science.

Table 4: Occupational Projections by Major Occupational Group in Tennessee for 2020-2030

Major Occupation Group Title	2020 Estimated Employment	2030 Projected Employment	2020-2030 Employment Change	2022 Median Annual Wage
Total, All Occupations	3,220,505	3,740,219	519,714	39,929
Food Preparation and Serving Related	251,529	329,987	78,458	24,999
Transportation and Material Moving	349,340	415,190	65,850	36,446
Management	224,930	269,230	44,300	101,116
Healthcare Practitioners and Technical	204,653	241,239	36,586	63,695
Office and Administrative Support	439,921	472,233	32,312	38,216
Production	262,343	295,118	32,775	38,364
Business and Financial Operations	149,228	180,435	31,207	62,674
Healthcare Support	106,391	133,293	26,902	30,721
Building and Grounds Cleaning and Maintenance	102,982	130,103	27,121	29,457
Computer and Mathematical	63,750	84,677	20,927	78,475
Installation, Maintenance, and Repair	129,317	148,881	19,564	47,658
Education, Training, and Library	163,357	176,783	13,426	48,923
Personal Care and Service	72,084	88,927	16,843	28,225
Construction and Extraction	118,463	136,025	17,562	45,359
Arts, Design, Entertainment, Sports, and Media	47,942	58,248	10,306	44,138
Sales and Related	296,042	308,461	12,419	31,200
Protective Service	68,177	76,602	8,425	38,884
Community and Social Service	56,181	64,152	7,971	45,476
Architecture and Engineering	43,915	51,845	7,930	77,263
Legal	17,904	21,928	4,024	80,356
Life, Physical, and Social Science	22,743	25,590	2,847	63,835
Farming, Fishing, and Forestry	29,313	31,272	1,959	31,716

Source: TN Department of Labor and Workforce Development, WIR²ED Division, OEWS 2022 and 2020-2030 Long-Term Projections

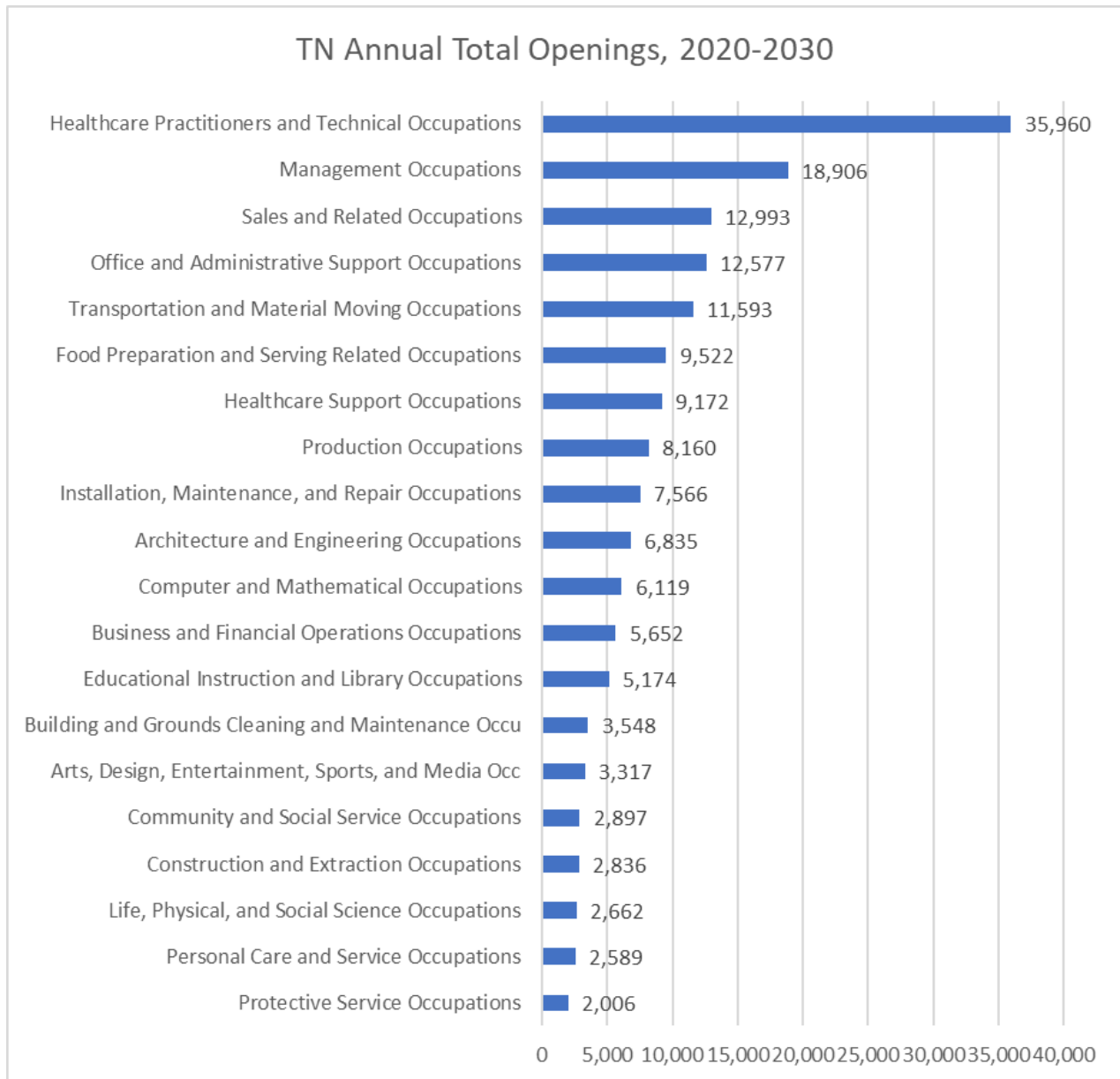


Figure 7

Source: TN Department of Labor and Workforce Development, WIR²ED Division, Tennessee Long-Term Industry Projections 2020-2030

Job openings consist of new jobs as well as jobs created by workers transferring out of job classes or exiting the labor force altogether. For most occupational groups, the number of jobs created by transfers and exits far outweighs the number of new jobs and could be 75 percent or more of the job openings. Top occupational groups expected to have the most job openings in 2020-2030 include: healthcare practitioners and technical, management, and sales occupations. The total number of occupational openings in the state of Tennessee by 2030 is projected to be over 4.5 million.

Significant Occupational Shortages (SOS)

A continuing feature in today's economy is concern by employers in Tennessee about the shortage of workers to fill available jobs. Having enough employees allows employers to maintain productivity and expand as the economy grows. The Tennessee Department of Labor and Workforce Development's web site, jobs4tn.gov, in June 2023 listed 4.3 jobs for every unemployed person in the state. This is a nearly 80 percent increase over 2022.

Table 5: Top Supply Gaps – Postsecondary Education through the Associate Degree

Occupation Title	Education Level	Sum of Job Openings 2022	Sum of Resumes 2022	Openings Minus Resumes	Entry Level Annual Wage 2022
Registered Nurses	AA	93,116	625	92,491	54,486
Licensed Practical and Licensed Vocational Nurses	PS	19,558	296	19,262	36,873
Heavy and Tractor-Trailer Truck Drivers	PS	20,026	1,558	18,468	37,627
Nursing Assistants	PS	12,949	603	12,346	26,850
Surgical Technologists	PS	5,331	34	5,297	40,456
Bookkeeping, Accounting, and Auditing Clerks	SC	5,892	976	4,916	30,253
Medical Assistants	PS	5,031	811	4,220	28,974
Radiologic Technologists and Technicians	AA	3,863	51	3,812	42,802
Computer User Support Specialists	SC	4,208	513	3,695	36,615
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	PS	3,777	192	3,585	35,517
Automotive Service Technicians and Mechanics	PS	3,348	352	2,996	31,045
Respiratory Therapists	AA	2,952	52	2,900	48,462
Phlebotomists	PS	2,929	184	2,745	29,229
Hairdressers, Hairstylists, and Cosmetologists	PS	2,621	391	2,230	20,559
Dental Assistants	PS	2,244	274	1,970	32,692

Key: AA Associate's degree; SC Some college; PS Postsecondary non-degree award

Sources: jobs4tn.gov job openings posted and active resumes 2022; OEWS 2022 entry level wages

The three tables in this section compare the number of job openings listed in jobs4tn.gov for 2022 with the number of active resumes on the system for that year. Not all employers post jobs, nor do all individuals desiring jobs post resumes, but the data do provide a snapshot of areas which appear to have sizable labor force imbalances, and which need a greater supply of workers.

Labor force shortages range across skill levels, from occupations requiring no formal education to those requiring bachelor's degrees or more. Some occupations for which few jobs are posted on jobs4tn.gov also need more employees applying for and accepting jobs, but methods to track those shortages are unavailable. The tables below use data from jobs4tn to highlight some of the more critical candidate shortages at different educational levels.

Table 5 shows the top 15 occupations in Tennessee by supply gap which require more than a high school diploma but less than a bachelor's degree. Nine of these are skilled occupations in healthcare, ranging from registered and licensed practical nurses to respiratory therapists. Most of these occupations require associate degrees. The healthcare system is recovering from severe stresses experienced by its workforce during the pandemic, lack of rural hospital expansion, and increasing demands from an aging population and low- income families without health insurance.

Significant shortages are also observed in the following occupations: heavy tractor trailer drivers, bookkeepers and administrative support workers, and computer user support specialists. As more companies expand their operations so that their workers can work remotely, this is an occupation that is projected to be in need.

Table 6: Top Supply Gaps- High School, High Wage

Occupation Title	Education Level	Sum of Job Openings 2022	Sum of Resumes 2022	Openings Minus Resumes	Entry Level Annual Wage 2022
First-Line Supervisors of Production and Operating Workers	HS	6,488	1,094	5,394	42,576
Postal Service Clerks	HS	3,228	159	3,069	46,508
Transportation, Storage, and Distribution Managers	HS	2,878	425	2,453	59,054
First-Line Supervisors of Mechanics, Installers, and Repairers	HS	2,211	232	1,979	44,257
First-Line Supervisors of Construction Trades and Extraction Workers	HS	843	355	488	44,789
Industrial Machinery Mechanics	HS	525	105	420	42,307
Power Distributors and Dispatchers	HS	423	11	412	52,008
Claims Adjusters, Examiners, and Investigators	HS	569	221	348	44,488
Chemical Plant and System Operators	HS	358	53	305	49,106
Electrical Power-Line Installers and Repairers	HS	308	30	278	48,114
Commercial Pilots	HS	290	12	278	75,976
Brokerage Clerks	HS	224	24	200	46,082
Detectives and Criminal Investigators	HS	113	37	76	45,242
Precision Instrument and Equipment Repairers, All Other	HS	58	2	56	42,857

Key: HS High school

Source: jobs4tn.gov 2022 annual online job openings; active resumes and unemployed persons with occupations 2022; OEWS 2022 entry level wages by occupation.

Table 6 displays the top 15 occupations with labor supply shortages which usually require only a high school diploma or the equivalent and for which entry level wages are twenty percent above the 2022 median entry level wage in the state. Three of the occupations most in need of applicants are supervisors- of production; mechanics, installers, and repairers; and construction trades. Their wages are right on par with state median wages. Transportation occupations with shortages include transportation and distribution managers, commercial pilots, and transportation inspectors. Utility workers including electrical power line installers and repairers as well as power dispatchers are in high demand, as well as production employees like industrial machinery mechanics.

Table 7: Top Supply Gaps: Bachelor's Degree Occupations

Occupation Title	Education Level	Sum of Job Openings 2022	Sum of Job Applicants 2022	Supply Gap: Openings Minus Applicants	Entry Level Annual Wage 2022
General and Operations Managers	BA	11,472	1,466	10,006	57,596
Accountants and Auditors	BA	8,360	671	7,689	47,341
Computer Programmers	BA	4,899	74	4,825	73,015
Computer Systems Analysts	BA	4,351	175	4,176	59,031
Financial Managers	BA	4,325	357	3,968	82,470
Medical and Health Services Managers	BA	4,318	355	3,963	66,563
Human Resources Specialists	BA	4,295	803	3,492	38,070
Mechanical Engineers	BA	3,352	151	3,201	63,696
Management Analysts	BA	3,375	212	3,163	56,766
Sales Managers	BA	6,053	3,202	2,851	76,167
Industrial Engineers	BA	2,993	151	2,842	64,622
Civil Engineers	BA	2,586	43	2,543	63,044
Electrical Engineers	BA	2,568	56	2,512	69,108
Marketing Managers	BA	2,989	488	2,501	75,266
Producers and Directors	BA	2,552	220	2,332	34,885

Key: BA Bachelor's degree

Sources: jobs4tn.gov 2022 annual online job openings; active resumes and unemployed persons with occupations 2022; OEWS 2022 entry level wages by occupation.

Table 7 lists the top 15 occupations with critical shortages of candidates which require a bachelor's degree. Management occupations are prominent, including general, marketing, sales, and financial, as well as their professional support staff in accounting and human resources. As the manufacturing industries in Tennessee including the production of electrical vehicles, batteries, medical supplies, and other products grow, the demand for engineers is also increasing. Computer analysts and computer systems programmers had more than 9,000 job openings listed with fewer than 250 applicants available. As technology companies continue to move into Tennessee, this is a trend that should continue, unless training is significantly increased.

Assessing Teacher Vacancies

Job openings listed on jobs4tn provide some information on the magnitude of the gap in labor supply for some occupations, but they are not very useful in identifying the number of teacher vacancies and applicants at the elementary and secondary school level. Most teachers apply for licenses with the Tennessee Department of Education and then apply for jobs through local school district web sites. These vacancies are not posted to a central web site for the state. According to Tennessee long term projections for 2020-2030 produced by the TDLWD, 6,014 openings for kindergarten, elementary, and secondary school teachers are expected annually. However, only 1,306 jobs for these occupations (just over 20 percent) were listed on jobs4tn in 2022 and only 355 applicants were available.

Using available data, the largest supply gaps are for elementary, secondary, and middle school teachers, excluding special education. Better data could lead to more success in recruiting students into these professions, at a time when teacher shortages continue to increase¹ and education is a foundational public service. A regular inventory at the state level of numbers of teacher vacancies by subject matter is a necessary component for the healthy operation of our public schools. To begin to address these shortages, an apprentice program for teachers was begun and in 2022, 28 K-12 teachers completed the program.

¹ Katie Nixon and Nicole Young (January 26, 2022). Staffing shortage closes schools. *Ashland City Times*, p. 1A.

Table 8: Elementary and Secondary Teachers Have Few Jobs and Applications Posted

Occupational Title	2020 Employment	2030 Projected Employment	Annual Total Openings	Sum of Job Openings 2022	Sum of Resumes 2022	Openings Minus Resumes	Entry Annual Wage
Elementary School Teachers, Except Special Education	29,252	30,736	2,319	544	107	437	42,880
Secondary School Teachers, Except Special and Career/Technical Education	19,334	20,342	1,439	368	64	304	44,723
Middle School Teachers, Except Special and Career/Technical Education	12,380	13,013	982	199	48	151	43,964
Special Education Teachers, Middle School	1,212	1,269	97	20	8	12	45,040
Special Education Teachers, All Other	483	582	49	11	8	3	46,864
Career/Technical Education Teachers, Secondary School	2,217	2,320	163	23	21	2	46,044
Special Education Teachers, Kindergarten and Elementary School	3,873	4,063	308			0	45,976
Special Education Teachers, Secondary School	3,031	3,210	246	14	17	-3	46,334
Career/Technical Education Teachers, Middle School	123	129	10	12	47	-35	47,792

Source: TDLWD, WIR²ED Division, TN Occupational Projections 2020-2030; OEWS 2022; jobs4tn.gov job openings and active resumes 2022.