

Apprenticeships

In 2019, an apprenticeship office was established in the TDLWD to increase the number of apprenticeships across the state and the types of occupations for which apprenticeship was available. Each year the number of apprenticeship completers has increased. In 2021 there were 1135 completers: 640 in the East, 304 in the Middle, and 191 in the West Region, compared to a total of 981 completers the year before. Tables 36 through 38 list the sponsors and number of completers in each region and LWDA; Table 39 lists the occupations in which they were trained.

Table 36: Registered Apprenticeship Sponsors with Completers in 2021 in the East Region

Program Sponsor Name	Region	Program Sponsor County	No. of Completers
Consolidated Nuclear Security, LLC	East	Anderson	1
Eagle Bend Manufacturing	East	Anderson	4
Oak Ridge Electric JATC	East	Anderson	9
Massey Electric #1	East	Blount	15
Tennessee Valley Youth Apprenticeships	East	Blount	1
Telos Global, LLC	East	Campbell	2
Walters State Community College	East	Hamblen	11
Electrician Training Academy Knoxville	East	Knox	23
Funderburk Electrical Services	East	Knox	7
Knoxville Area Sheet Metal JAC	East	Knox	10
Knoxville Ironworkers JAC	East	Knox	16
Knoxville Laborers JATC	East	Knox	21
Knoxville Plumbers & Steamfitters JATC	East	Knox	14
Knoxville Plumbing Heating Air Conditioning Cont	East	Knox	9
Resource Valley	East	Knox	33
Shoffnerkalthoff, MES	East	Knox	8
TVA	East	Knox	15
Dienamic Tooling System Inc	East	Roane	2
East Tennessee LWDA			201
Parker Hannifin - Motion Systems Group - Pump & Motor Division	Northeast	Greene	2
Baldor Electric Company	Northeast	Hawkins	2
Holston Electric Co	Northeast	Hawkins	2
Mountain Electric Cooperative	Northeast	Johnson	4
Eastman Chemical Co. - Coal Gas Division	Northeast	Sullivan	11
Eastman Chemical Co. - Tn Operations	Northeast	Sullivan	141
Massey Electric, Inc.# 2	Northeast	Sullivan	2
Northeast State Community College/Rcam	Northeast	Sullivan	3
Primester	Northeast	Sullivan	2
Tri-Cities Electrical Jatc	Northeast	Sullivan	1
Ao Smith	Northeast	Washington	3
Plumber And Pipefitters, Local Union 538 JATC	Northeast	Washington	7

(Continued on next page)

Table 36 –Continued

Northeast LWDA			180
Hardwick Tactical Corporation	Southeast	Bradley	42
Puerto Rico Industries For The Blind Corp	Southeast	Bradley	19
Chattanooga Electrical JATC	Southeast	Hamilton	82
Chattanooga Ironworkers JAC	Southeast	Hamilton	7
Chattanooga Painters JAC	Southeast	Hamilton	2
Chattanooga State Community College	Southeast	Hamilton	7
Gestamp Chattanooga, LLC	Southeast	Hamilton	7
Tennessee Carpenters Regional Council J.A.T.C.	Southeast	Hamilton	62
Ua Local 43 Plumbers Steamfitters JATC	Southeast	Hamilton	19
Abb	Southeast	McMinn	4
E&E Manufacturing Of Tennessee, LLC	Southeast	McMinn	5
Operating Engineers Local No. 917 Apprenticeship	Southeast	McMinn	3
Southeast LWDA			259
Grand Total for East Region			640

Source: TDLWD Apprenticeship Data

Table 37: Registered Apprenticeship Sponsors with Completers in 2021 in the Middle Region

Program Sponsor Name	Region	Program Sponsor County	No. of Completers
Industrial Electric Services, Inc.	Northern Middle	Cheatham	1
Abec Electric Company, LLC	Northern Middle	Davidson	14
Boilermakers S A J A C	Northern Middle	Davidson	92
Elevator Constructors Local 93	Northern Middle	Davidson	45
Fast Electrical Contractors, Inc.	Northern Middle	Davidson	2
Harlan Electric	Northern Middle	Davidson	2
Heat & Frost Insulators Local# 86 JATC	Northern Middle	Davidson	2
John Bouchard & Sons Co.	Northern Middle	Davidson	2
M.C. Dean	Northern Middle	Davidson	1
Nashville Electric Service	Northern Middle	Davidson	18
Nashville Electrical JATC	Northern Middle	Davidson	3
Nashville Ironworkers	Northern Middle	Davidson	16
Nashville Plumbers And Pipefitters	Northern Middle	Davidson	22
Nashville Sheetmetal JATC	Northern Middle	Davidson	15
Nashville State Community College	Northern Middle	Davidson	7
Power Tek, LLC	Northern Middle	Davidson	1
Stansell Electric Apprenticeship Training Program	Northern Middle	Davidson	4
Cumberland Electric Membership Corporation	Northern Middle	Montgomery	4
M&M Electrical Contractor, Inc	Northern Middle	Robertson	1
Middle Tennessee Electric Membership Cor	Northern Middle	Rutherford	3
North American Stamping Group	Northern Middle	Sumner	6
Robert C Byrd Institute	Northern Middle	Sumner	9
Hamilton-Ryker Talentgro	Northern Middle	Williamson	9
Lee Company	Northern Middle	Williamson	2
Northern Middle LWDA			281
Spring Hill Manufacturing-General Motors	Southern Middle	Maury	12
Southern Middle LWDA			12
TLD Logistics	Upper Cumberland	Cumberland	11
Upper Cumberland LWDA			11
Grand Total for Middle Region			304

Source: TDLWD Apprenticeship Data

Table 38: Registered Apprenticeship Sponsors with Completers in 2021 in the West Region

Program Sponsor Name	Region	Program Sponsor County	No. of Completers
Southwest Tennessee Emc	Southwest	Haywood	5
Delta Electrical, Inc	Southwest	Madison	11
Jackson Energy Authority	Southwest	Madison	2
Southwest LWDA			18
Northwest Corrections	Northwest	Lake	29
Northwest LWDA			29
Chickasaw Electric Cooperative	Greater Memphis	Fayette	5
Atlantic Track	Greater Memphis	Shelby	1
Federal Correctional Institute	Greater Memphis	Shelby	4
G.I. Apprentice Inc	Greater Memphis	Shelby	2
International Union Of Elevator Constructors Local	Greater Memphis	Shelby	2
Memphis Asbestos JAC	Greater Memphis	Shelby	3
Memphis Electrical JATC	Greater Memphis	Shelby	33
Memphis Ironworkers JAC	Greater Memphis	Shelby	5
Memphis Light, Gas, And Water	Greater Memphis	Shelby	16
Memphis Plumbers JAC	Greater Memphis	Shelby	8
Memphis Sheet Metal Workers JAC	Greater Memphis	Shelby	3
Mid South Independent Electrical Contrac	Greater Memphis	Shelby	33
Steamfitters Local Union 614 Joint Apprenticeship Training Program	Greater Memphis	Shelby	26
West TN Associated Builders & Contractor	Greater Memphis	Shelby	2
William R. Moore College Of Technology	Greater Memphis	Shelby	1
Greater Memphis LWDA			144
Grand Total for West Region			191

Source: TDLWD Apprenticeship Data

Table 39: Apprentice Completers by Job Title

Apprenticeship Occupation Title	Number of Completers, 2021
Boilermaker I	48
Carpenter	7
Construction Craft Laborer	8
Electrician (Alternate Title: Interior Electrician)	32
Industrial Maintenance Mechanic	2
Industrial Sewing Machine Operator	61
Insulation Worker	388
Journeyman Lineman	9
Line Erector (Power-Line Distribution Erector)	6
Line Installer-Repairer	2
Maintenance Repairer, Industrial	1
Millwright	4
Nurse Assistant Certified (Existing Title: Nurse Assistant)	9
Pipe Fitter (Construction)	2
Pipefitting	1
Plumber	2
Production Machinery Electrician (Existing Title: Electrician, Maintenance)	527
Sheet Metal Worker	10
Tool And Die Maker	5
Truck Driver, Heavy	11
Grand Total	1135

Source: TDLWD Apprenticeship Data

Emerging Industries and Conclusion

The Tennessee job landscape will be changing notably in the decade of 2020-2030 from the impact of advanced energy technologies in the state. All major auto manufacturers in Tennessee are developing electric vehicles. GM produces the Cadillac LYRIQ in Spring Hill, where it has invested \$2 billion to transform the site⁸ to manufacture electric vehicles. The LYRIQ is powered by the Ultium electric vehicle battery, manufactured at Spring Hill; Ultium expects to employ 1,300 at that location.

⁸ <https://www.gm.com/stories/lyriq-reveal>

At the Memphis Regional Megasite in Haywood County, Ford and SK Innovation are starting this year to construct⁹ one of the largest electric vehicle and battery manufacturing facilities in the U.S., encompassing \$5.6 billion in capital expenditures and expected to employ 5,800 workers. Volkswagen in Chattanooga has started assembling the all-electric ID.4. The company has invested \$800 million in its factory to produce electric vehicles as well as for vehicle and battery pack assembly. They plan to hire at least 1,000 more production employees through 2022 to meet vehicle demand. They have provided more than 75,000 hours of training on battery-powered vehicles.¹⁰ The manufacture of electric vehicle charging stations is also ramping up¹¹, as are systems for helping drivers locate charging stations and funds for their installation around the state.¹² At the same time, motor vehicle parts manufacturing (NAICS 3363) has declined by 4,454 jobs from 2019 to 2021, as manufacturing is changing from the manufacture of gasoline-powered engines to electric vehicles.

The information industry is projected to be the third fastest- growing industry in Tennessee from 2020 to 2030, with the location of Oracle expected to add 8,000 jobs adding to its expansion. Health care and social assistance is expected to be the largest industry in Tennessee by 2030, with expansion continuing in the state.¹³

The question for workforce development is: Is the workforce ready and will it be available? In June 2021, there were 2 jobs for every unemployed worker in the state. Labor force participation rates need to improve. Shortages of information technology workers and healthcare workers have been highlighted in this report. Efforts to address those shortages need to increase. Will there be a sufficiently friendly labor force climate to retain and attract a diverse labor force, including women, who make up 47% of the workforce¹⁴. Investments in gender- parity improvements in areas such as education, family planning, maternal health, digital and financial inclusion, and assisting with childcare and elder care can have significant positive effects on the economy,¹⁵ whereas restrictions on women's healthcare access are expected to have negative economic consequences. Will justice-involved individuals, and others with significant barriers, have sufficient opportunities to enter the workforce?

Higher poverty rates in a state make it difficult for workers to participate in the labor force, due to the inability to afford transportation, adequate nutrition, and costs such as tuition and childcare. In September 2022 the

⁹ Omer Yusuf (January 25,2022). Data set for work on BlueOval City. *Tennessean*, p. 10a.

¹⁰ TN Department of Environment and Conservation, TDEC Office of Energy Programs, monthly newsletter, August 30, 2022 (TDEC.OEP@tn.gov).

¹¹ Andy Humbles (February 9, 2022). *EV charger plant coming to Lebanon*. *Tennessean*, p. 11A.

¹² TDEC.OEP@tn.gov, Chattanooga receives federal grant for EV Management. August 30, 2022.

¹³ Frank Gluck (July 25, 2022). VUMC to announce \$500 M expansion. *Tennessean*, pp. 1A and 8A.

¹⁴ <https://www.bls.gov/cps/cpsaat18.htm>

¹⁵ <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/seven-charts-that-show-covid-19s-impact-on-womens-employment>

Census Bureau released the 2021 Current Population Survey Annual Social and Economic Supplements (CPS ASEC) report with Supplemental Poverty Measures (SPM)¹⁶ which provide data on poverty measures and economic conditions in the nation and states. Evidence showed that economic safety net programs (Social Security, economic stimulus checks, a stronger unemployment insurance system, and the expanded child tax credit) kept more than 25 million people out of poverty during the pandemic. From 2021 to 2019, these programs reduced Tennessee's SPM by almost two percentage points compared to 2017 to 2019.¹⁷ Continuing these programs such as the child tax credit at the state level can reduce poverty rates and would grow Tennessee's labor force.

The important challenges of having a ready workforce for the BlueOval project are the reason for the interdepartmental Ford Motor Company Workforce Development CORE project Team. Other important initiatives are underway across the state. Future reports will develop more detail on occupations affected by emerging industries as well as investigating other efforts to meet the challenges of workforce shortages in Tennessee.

¹⁶ <https://www.census.gov/content/dam/Census/library/publications/2022/demo/p60-277.pdf>

¹⁷ <https://www.epi.org/blog/poverty-is-a-policy-choice-state-level-data-show-pandemic-safety-net-programs-prevented-a-rise-in-poverty-in-every-state/>

Appendix

Occupations in Demand 2021 by Region

Occ. Code	Occupational Title	East Region	Middle Region	West Region
113010	Administrative Services and Facilities Managers	X	X	
413011	Advertising Sales Agents	X	X	X
493011	Aircraft Mechanics and Service Technicians	X		
173011	Architectural and Civil Drafters	X		
119041	Architectural and Engineering Managers		X	X
274011	Audio and Video Technicians		X	
493021	Automotive Body and Related Repairers	X	X	X
493023	Automotive Service Technicians and Mechanics	X	X	X
513011	Bakers	X		X
194021	Biological Technicians	X		
493031	Bus and Truck Mechanics and Diesel Engine Specialists	X	X	X
533052	Bus Drivers, Transit and Intercity	X		
513021	Butchers and Meat Cutters	X	X	X
173098	Calibration Technologists and Technicians and Engineering Technologists and Technicians, Except Drafters, All Other	X	X	X
435011	Cargo and Freight Agents		X	
472031	Carpenters	X	X	
351011	Chefs and Head Cooks		X	X
519011	Chemical Equipment Operators and Tenders		X	
194031	Chemical Technicians	X		
211021	Child, Family, and School Social Workers	X		
172051	Civil Engineers	X		X
131031	Claims Adjusters, Examiners, and Investigators	X		X
193031	Clinical, Counseling, and School Psychologists	X	X	X
211099	Community and Social Service Specialists, All Other	X	X	
131141	Compensation, Benefits, and Job Analysis Specialists	X	X	X
151241	Computer Network Architects	X		X
151231	Computer Network Support Specialists		X	X
519161	Computer Numerically Controlled Tool Operators	X	X	X
151299	Computer Occupations, All Other	X		X
151251	Computer Programmers	X	X	
151211	Computer Systems Analysts	X	X	X
151232	Computer User Support Specialists	X	X	X
492011	Computer, Automated Teller, and Office Machine Repairers	X	X	X

Occ. Code	Occupational Title	East Region	Middle Region	West Region
474011	Construction and Building Inspectors	X	X	
119021	Construction Managers	X	X	X
131051	Cost Estimators	X	X	X
211019	Counselors, All Other	X	X	
537021	Crane and Tower Operators	X		
434051	Customer Service Representatives	X	X	X
439021	Data Entry Keyers	X	X	X
151245	Database Administrators and Architects		X	
419011	Demonstrators and Product Promoters		X	
319091	Dental Assistants	X	X	X
291292	Dental Hygienists	X		
435032	Dispatchers, Except Police, Fire, and Ambulance	X	X	X
472081	Drywall and Ceiling Tile Installers		X	
273041	Editors	X	X	X
119033	Education Administrators, Postsecondary	X	X	X
211012	Educational, Guidance, and Career Counselors and Advisors	X	X	X
173023	Electrical and Electronic Engineering Technologists and Technicians	X	X	X
492094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	X	X	
172071	Electrical Engineers		X	
499051	Electrical Power-Line Installers and Repairers	X	X	
472111	Electricians	X	X	X
172072	Electronics Engineers, Except Computer	X		
292040	Emergency Medical Technicians and Paramedics	X		
172199	Engineers, All Other	X		X
192041	Environmental Scientists and Specialists, Including Health		X	
475022	Excavating and Loading Machine and Dragline Operators, Surface Mining		X	X
436011	Executive Secretaries and Executive Administrative Assistants	X	X	X
399031	Exercise Trainers and Group Fitness Instructors	X	X	
514021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic		X	
113031	Financial Managers	X	X	X
471011	First-Line Supervisors of Construction Trades and Extraction Workers	X	X	X
351012	First-Line Supervisors of Food Preparation and Serving Workers	X	X	X
371011	First-Line Supervisors of Housekeeping and Janitorial Workers	X	X	X
371012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	X		
491011	First-Line Supervisors of Mechanics, Installers, and Repairers	X	X	X

Occ. Code	Occupational Title	East Region	Middle Region	West Region
411012	First-Line Supervisors of Non-Retail Sales Workers	X	X	X
431011	First-Line Supervisors of Office and Administrative Support Workers	X	X	
511011	First-Line Supervisors of Production and Operating Workers	X	X	X
411011	First-Line Supervisors of Retail Sales Workers	X	X	X
531047	First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	X	X	X
513099	Food Processing Workers, All Other			X
119051	Food Service Managers	X	X	X
111021	General and Operations Managers		X	X
271024	Graphic Designers	X	X	X
514033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	X		X
395012	Hairdressers, Hairstylists, and Cosmetologists	X	X	X
319099	Healthcare Support Workers, All Other	X		X
499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	X	X	X
533032	Heavy and Tractor-Trailer Truck Drivers	X	X	X
473013	Helpers--Electricians	X	X	X
474051	Highway Maintenance Workers		X	
113121	Human Resources Managers	X		X
131071	Human Resources Specialists	X	X	X
173026	Industrial Engineering Technologists and Technicians			X
499041	Industrial Machinery Mechanics		X	X
113051	Industrial Production Managers			X
434199	Information and Record Clerks, All Other	X	X	
151212	Information Security Analysts	X		X
519061	Inspectors, Testers, Sorters, Samplers, and Weighers	X	X	X
499099	Installation, Maintenance, and Repair Workers, All Other	X	X	X
259031	Instructional Coordinators	X		
413021	Insurance Sales Agents	X	X	X
131075	Labor Relations Specialists			X
436012	Legal Secretaries and Administrative Assistants		X	
292061	Licensed Practical and Licensed Vocational Nurses	X		X
132072	Loan Officers	X		X
119081	Lodging Managers	X		
131081	Logisticians	X	X	X
514041	Machinists	X	X	X
499071	Maintenance and Repair Workers, General	X	X	X
499043	Maintenance Workers, Machinery	X	X	X
131111	Management Analysts	X		
131161	Market Research Analysts and Marketing Specialists	X	X	X

Occ. Code	Occupational Title	East Region	Middle Region	West Region
112021	Marketing Managers		X	X
211013	Marriage and Family Therapists			X
319011	Massage Therapists	X	X	
172141	Mechanical Engineers	X		X
119111	Medical and Health Services Managers	X	X	X
319092	Medical Assistants	X	X	X
319093	Medical Equipment Preparers		X	X
499062	Medical Equipment Repairers	X		
319094	Medical Transcriptionists	X		
131121	Meeting, Convention, and Event Planners	X	X	
211023	Mental Health and Substance Abuse Social Workers		X	X
271026	Merchandise Displayers and Window Trimmers	X	X	
514199	Metal Workers and Plastic Workers, All Other		X	X
499044	Millwrights			X
474090	Miscellaneous Construction and Related Workers	X	X	
493042	Mobile Heavy Equipment Mechanics, Except Engines		X	
533099	Motor Vehicle Operators, All Other			X
514081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic		X	X
272042	Musicians and Singers		X	
151244	Network and Computer Systems Administrators	X	X	X
291151	Nurse Anesthetists	X		
311131	Nursing Assistants		X	X
312011	Occupational Therapy Assistants		X	X
472073	Operating Engineers and Other Construction Equipment Operators	X	X	X
152031	Operations Research Analysts		X	
472141	Painters, Construction and Maintenance	X	X	X
232011	Paralegals and Legal Assistants	X	X	
533058	Passenger Vehicle Drivers, Except Bus Drivers, Transit and Intercity		X	
472071	Paving, Surfacing, and Tamping Equipment Operators	X	X	X
433051	Payroll and Timekeeping Clerks	X		X
119198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	X	X	X
292052	Pharmacy Technicians	X		
319097	Phlebotomists	X	X	X
312021	Physical Therapist Assistants	X	X	X
291071	Physician Assistants		X	X
192012	Physicists	X		
472152	Plumbers, Pipefitters, and Steamfitters	X	X	X

Occ. Code	Occupational Title	East Region	Middle Region	West Region
333051	Police and Sheriff's Patrol Officers	X		
518013	Power Plant Operators			X
252011	Preschool Teachers, Except Special Education	X	X	X
515113	Print Binding and Finishing Workers			X
515112	Printing Press Operators	X	X	X
272012	Producers and Directors		X	
119141	Property, Real Estate, and Community Association Managers	X	X	X
273031	Public Relations Specialists	X		X
113061	Purchasing Managers	X		X
419022	Real Estate Sales Agents	X	X	X
211015	Rehabilitation Counselors	X		
472181	Roofers	X	X	X
112022	Sales Managers	X		X
413091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	X	X	X
414012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	X	X	X
414011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	X	X	X
517041	Sawing Machine Setters, Operators, and Tenders, Wood			X
436014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	X	X	X
492098	Security and Fire Alarm Systems Installers			X
253021	Self-Enrichment Teachers		X	X
472211	Sheet Metal Workers	X	X	X
395094	Skincare Specialists	X		
119151	Social and Community Service Managers	X		
211093	Social and Human Service Assistants	X	X	X
151256	Software Developers and Software Quality Assurance Analysts and Testers	X	X	X
472221	Structural Iron and Steel Workers	X		
512041	Structural Metal Fabricators and Fitters	X		
211018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	X	X	X
292055	Surgical Technologists	X	X	X
537121	Tank Car, Truck, and Ship Loaders			X
492022	Telecommunications Equipment Installers and Repairers, Except Line Installers	X		X
499052	Telecommunications Line Installers and Repairers		X	X
516063	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	X		
493093	Tire Repairers and Changers	X		

Appendix

Occ. Code	Occupational Title	East Region	Middle Region	West Region
514111	Tool and Die Makers	X		
113131	Training and Development Managers		X	
131151	Training and Development Specialists	X	X	X
113071	Transportation, Storage, and Distribution Managers	X	X	X
292056	Veterinary Technologists and Technicians	X		
151257	Web Developers and Digital Interface Designers	X		
517042	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	X	X	

Source: THEC, *Improving the Pipeline for Tennessee's Workforce: Academic Supply for Occupational Demand 2022*.

https://www.tn.gov/content/dam/tn/thec/bureau/research/other-research/supply-demand/Supply%20and%20Demand%20Report_2022.pdf

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