Transportation Safety Workforce Report 2015

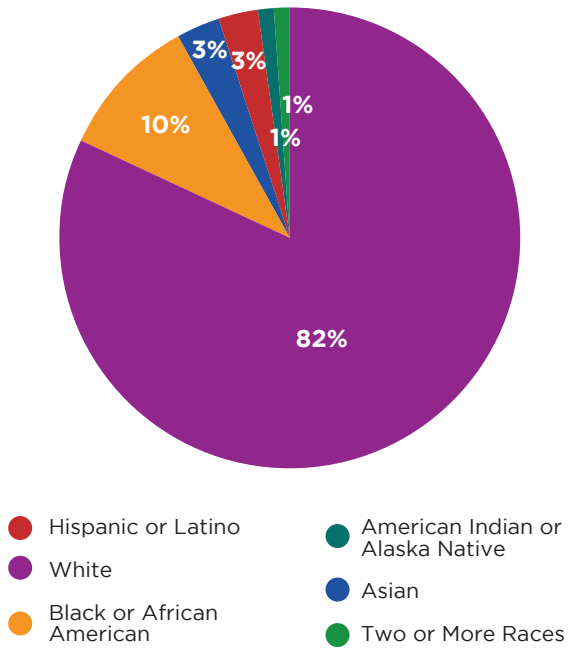
Executive Summary

The research summarized in this report was carried out as a partnership between the Center for Advancing Transportation Leadership and Safety (ATLAS Center) at the University of Michigan Transportation Research Institute (UMTRI) and Workforce Intelligence Network for Southeast Michigan (WIN). WIN's custom occupational analysis focuses on job titles related to the ATLAS Center's transportation safety research goals that promote safer roadways, safer drivers, and safety for high-risk groups. Additional occupation codes included in the analysis highlight workers with knowledge of emerging intelligent transportation systems, connected, or automated vehicle technologies, a research and education focus of WIN partner Michigan Academy for Green Mobility Alliance (MAGMA).

For more information, please see:

- win-semich.org
- atlas-center.org
- migreenmobility.org

Transportation Safety-Related Worker Race/Ethnicity



Findings

1. One-eighth of Michigan's workers are employed in jobs related to transportation safety.

   In Michigan, 564,477 people are employed in transportation safety-related occupations. These occupations include workers in Engineering & Design, Operations, and Planning, and account for about 13 percent of the state's total employment.

2. The diversity of workers in transportation safety jobs in Michigan largely reflect the ethnic diversity of the Michigan workforce overall.

   Transportation safety workers in Michigan are largely white and male. Eighty-two percent of workers in transportation safety-related occupations are white, 10 percent are black, and the remainder are Asian and Hispanic.

Data: EMSI, BLS
Analysis: Workforce Intelligence Networks

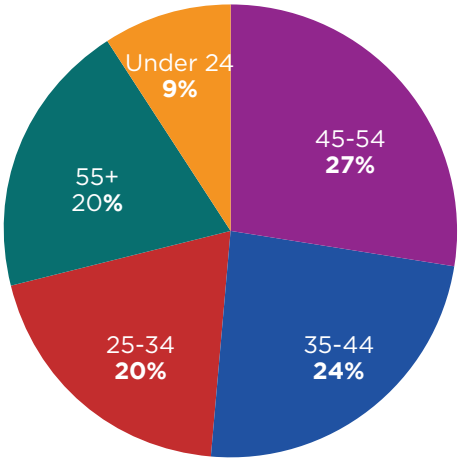
3. Too few young workers are entering transportation safety occupations, signaling a future long-run worker shortage.

   Twenty percent of transportation safety workers in Michigan are over 55 today. This means that 112,895 transportation safety-related workers will have to be replaced over the next 10 years. Workers under the age of 24 represent only 9 percent of the transportation safety-related workforce in the state.

4. The top two most in-demand transportation safety-related workers in Michigan reflect both the traditional and changing nature of the field.

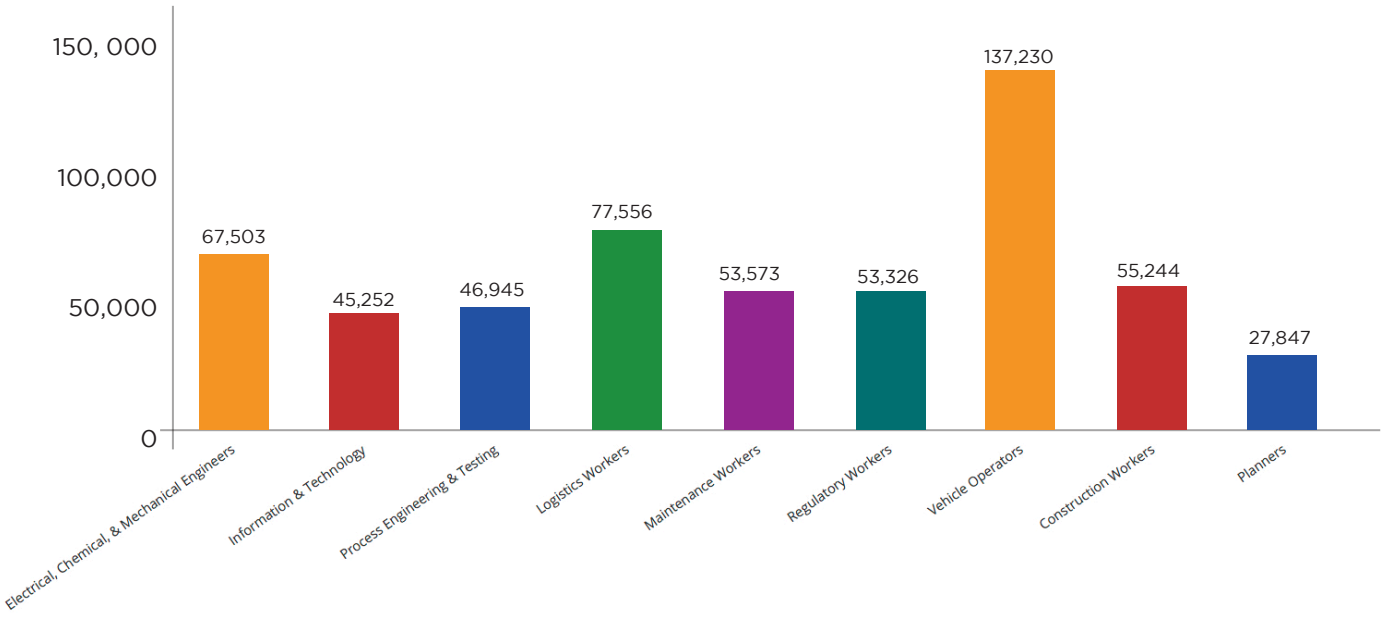
   Heavy and tractor-trailer truck drivers are the most in-demand transportation workers in Michigan while the second most in-demand workers are software developers. Truck drivers are a more traditional transportation-related occupation yet still heavily in-demand by companies. Software developers are not traditionally related to transportation safety but as transportation systems become more automated, computerized, and connected, employers require a technical workforce trained in computer science and coding.

Transportation Safety-Related Worker Age Demographics



Transportation Safety-Related Employment by Sub-group

(Michigan 2014)



Data: Economic Modeling Specialists, Intl.
Analysis: Workforce Intelligence Networks

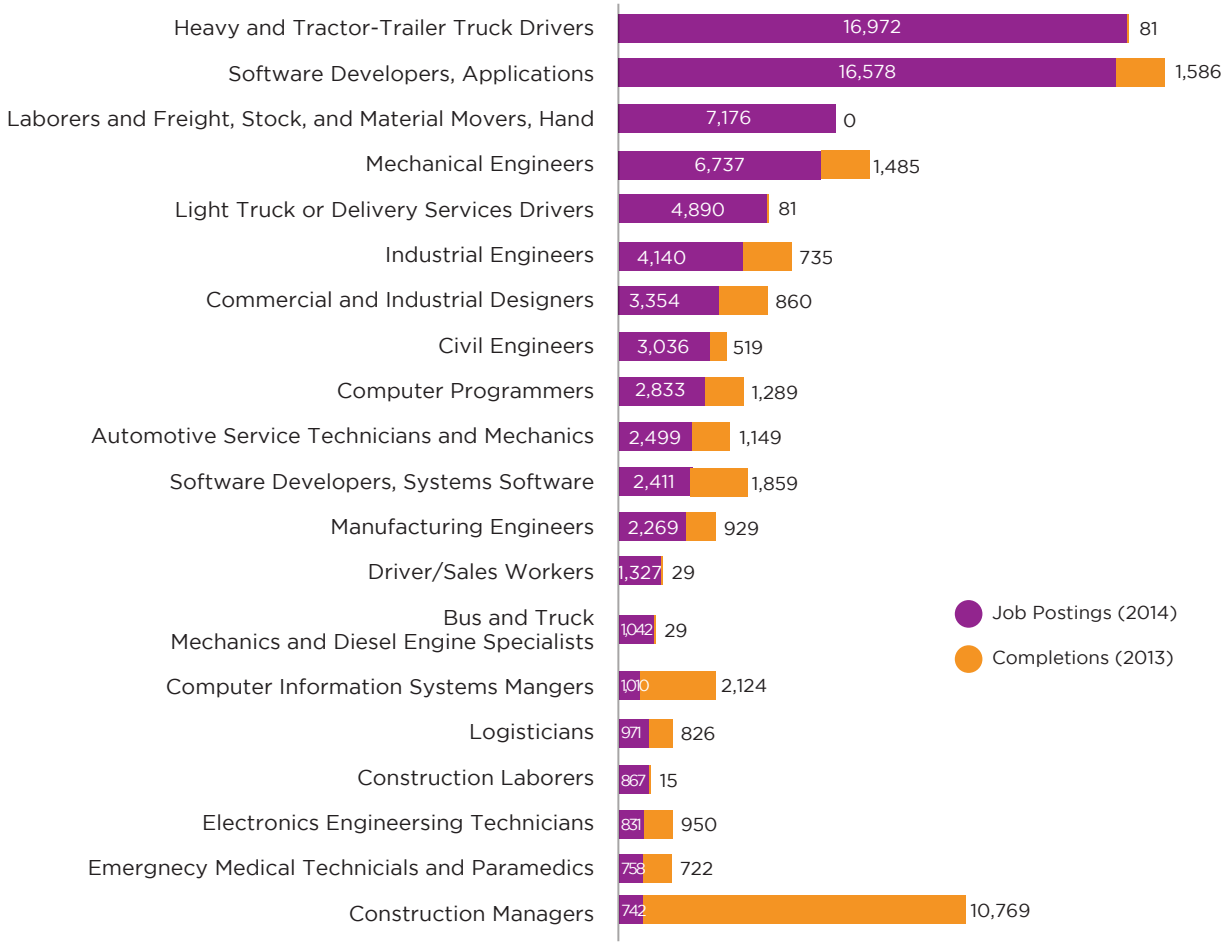
5. Vehicle operator, logistics worker, and engineering occupation sub-groups employ 50 percent of the transportation-safety workforce in Michigan.

   Half of Michigan's transportation safety-related workforce is comprised of vehicle operators, logistics workers, or engineers. These three occupation sub-groups represent the workers moving goods and people on roads, bridges, and other byways, those coordinating the movement of goods and people, and those designing the vehicles to move goods and people.

6. The gap between worker supply and demand is greatest for the top two in-demand occupations; heavy and tractor-trailer truck drivers and software developers.

   Data on demand and credentials related to truck drivers and software developers indicate both a current workforce gap and looming one in the future. These two areas are the most in-demand by companies yet have some of the lowest degree and credential completion rates. More programs and innovative ways to train workers are needed to fill these gaps.

Transportation Safety-Related Supply-Demand Highest Job Postings and Related Grads



Data: EMSI, Burning Glass
Analysis: Workforce Intelligence Networks

Methods

This report was compiled using data from Burning Glass Technologies, the Integrated Postsecondary Data System (IPEDS), Bureau of Labor Statistics (BLS), Economic Modeling Specialists International (EMSI), Career Builder Supply & Demand Portal, and the Census Bureau. The data is for the state of Michigan unless otherwise noted. All data are focused on occupations categorized by the WIN research team with input from the ATLAS Center. For a complete list of occupations, please see Appendix A.

Glossary

A. Occupation versus Industry – Occupations are defined as jobs in which individuals are employed. Industries are defined as the line of work an entire company is engaged in. While a company may fit into a single industry, several occupations may be employed in a single company. This report focuses on occupations as it is an analysis of workers and not companies.

B. Completions – A completion is defined as a post-secondary certificate or degree awarded by an educational institution. The analysis uses completions as a measure of new workforce supply, individuals newly credentialed and ready to fill open jobs. All completions data are gathered by IPEDS.

C. Job postings/Demand – Online job postings are a proxy for employer demand, or the need for workers. These data are gathered by Burning Glass Technologies.

D. Employment – The number of individuals estimated to be employed in the defined occupations. Employment includes both full and part-time workers.

E. Employers – Companies or organizations that employer workers.

This research project was supported by the Center for Advancing Transportation Leadership and Safety (ATLAS Center). The ATLAS Center is supported by a grant from the U.S. Department of Transportation, Office of the Assistant Secretary for Research and Transportation, University Transportation Centers Program (DTRT13-G-UTC54). The ATLAS Center is a collaboration between the University of Michigan Transportation Research Institute (UMTRI) and the Texas A&M Transportation Institute (TTI).