

Introduction

Transportation safety depends on a vast number of workers and reaches a broad number of occupations. These occupations range from engineers and designers involved in designing vehicles and their safety components, operations workers whose work is anything from enforcing traffic law to maintaining vehicles, and legislators, civil engineers, and construction workers who plan, design, and build roadways.

ATLAS
CENTER
*Advancing Transportation
Leadership and Safety*

WIN
WORKFORCE
INTELLIGENCE
NETWORK
for Southeast Michigan

Who counts as a Transportation Safety Worker?

WIN has identified 96 standard occupational codes that are related to transportation safety. With so many occupations in a diversity of fields, they can be more easily analyzed if grouped into clusters. These clusters include:

1. Engineering & Design: highlighting the safety engineering in manufacturing vehicles and their safety components
2. Operations: the occupations that ensure that the transportation system operates efficiently and safely, and
3. Planning: the planning and building of transportation systems that affect how people use the system.

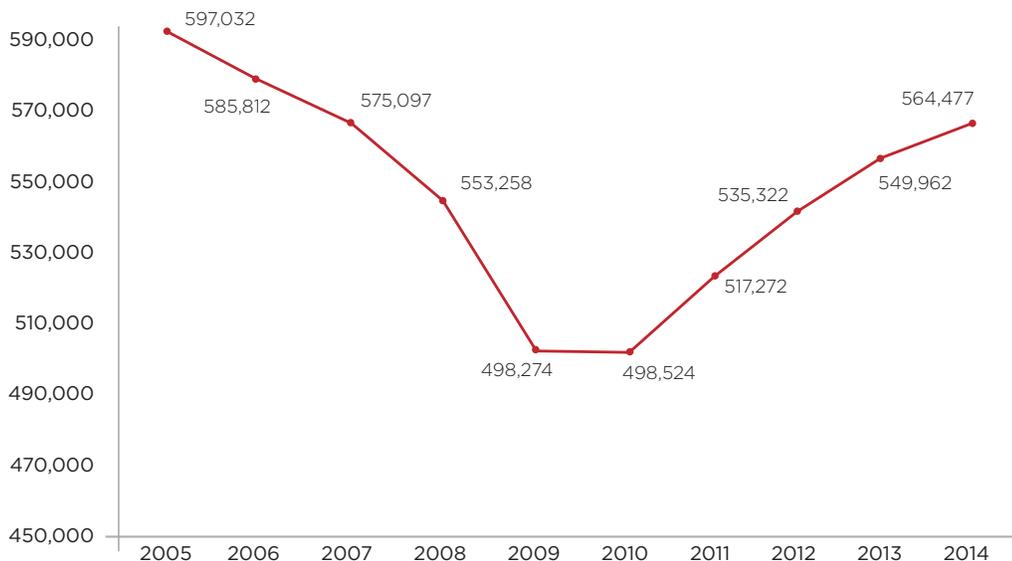
Each cluster is then further broken down into sub-groups for more detailed workforce analysis. Every job is unique and the following sub-group breakdowns allow the WIN research team to analyze the nuances of different types of works without needing to go into the detail of each of the 96 individual occupations.

Employment Trends

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 12.6% of the state's total employment.

While employment in these transportation safety-related occupations dropped considerably between 2005 and the recession low in 2009, levels have rebounded in a nearly linear pattern since 2010. In 2014, employment returned to pre- **2009** recession levels adding **66,173** workers, growing **13.3%** from **498,274** to **564,477** between 2009 and 2014.

12.6%
of the states
employment



Transportation
Safety-Related
Employment
(Michigan,
2005-2014)

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

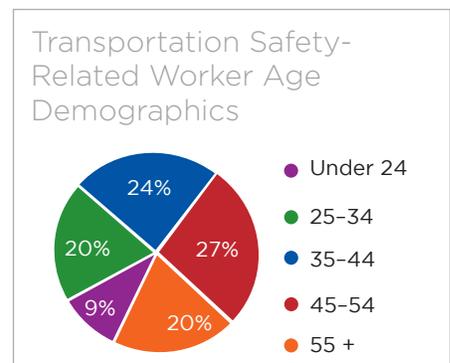
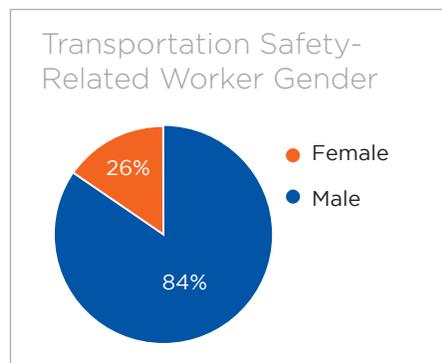
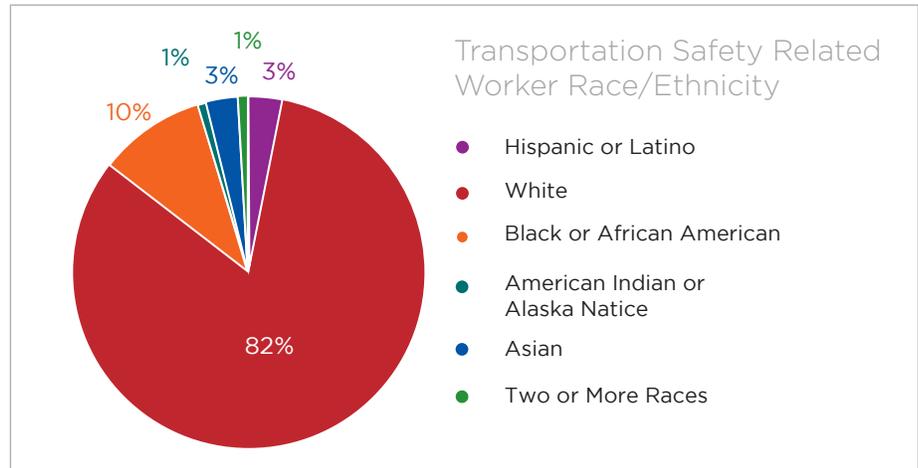
Demand for Transportation Safety Workers

The top in-demand transportation safety-related occupations in Michigan for 2014 demonstrate the diversity of the field.

1. Michigan employers posted almost 17,000 job ads for heavy and tractor-trailer truck drivers, whose knowledge of traffic safety and skilled driving is integral to maintaining a certain level of transportation safety in the state for all drivers on the road.
2. The second most in-demand occupation was software developers for applications (16,578 postings), whose skills with computer coding are transferrable to new intelligent transportation systems and connected vehicle technologies coming on the scene.
3. Laborers and freight, stock, and material movers were Michigan's third most in-demand transportation safety occupation. Employers posted 7,176 online job ads for these workers with safety practices that contribute to traffic safety in similar ways to truck drivers.
4. Mechanical engineers (6,737 postings) are often essential, especially in Michigan's automobile manufacturing economy, to the design of safe automobiles and accessory automobile products. Mechanical engineers also have educational background and professional skills that may be applicable to other areas of design for transportation safety.
5. Michigan employers posted 4,890 online job ads during 2014 for light truck or delivery services drivers. Traffic safety knowledge and experience in vehicle operating workers affects the safety of other road users significantly.

Workforce Demographics

Transportation safety workers in Michigan are largely white and male. 82% of workers in transportation safety-related occupations are white, 10% are black, and the remainder are Asian and Hispanic. Transportation safety employment in minority groups largely reflects the racial and ethnic breakdown of Michigan's workforce as a whole. While the ethnic breakdown of the workforce is reflective of Michigan's population, the gender breakdown tells a different story. Women are severely underrepresented in transportation safety jobs, comprising only 16% of the workforce, while 49% of workers across Michigan are female.



Data: EMSI, BLS • Analysis: Workforce Intelligence Network

An Aging Workforce

Many Michigan workers will reach retirement age in the next decade, with 27 percent of the state's workers currently between the ages of 45 and 54. The same is true for the 20 percent of transportation safety workers over 55 today. This means that 112,895 transportation safety-related workers in Michigan will have to be replaced over the next ten years. At the other end of the spectrum, workers under the age of 24 represent only 9% of the transportation safety-related workforce in the state, a slightly lower level than the 14% share this age group holds across all occupations. A disparity between workers close to retirement and those just entering the workforce signals a long-run gap in the number of workers going into related fields. This does provide opportunity for improvement, however, the wide reach of transportation safety-related occupations offers areas for young people to enter the workforce in these careers.

The research summarized here was carried out as a partnership between the ATLAS Center at University of Michigan Transportation Research Institute and Workforce Intelligence Network (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
migreenmobility.org
atlas-center.org

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