Midwest Transportation Workforce Center

Maria Hart
Program Manager
maria.hart@wisc.edu

Challenges and Opportunities in Transportation
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National Network for the Transportation Workforce

WEST
Steve Albert
Montana State University
stevea@coe.montana.edu
(406) 994-6114
wrtwc.org

NORTHEAST
Glenn McRae
University of Vermont
glenn.mcrae@uvm.edu
(802) 656-1317
netwc.net

SOUTHWEST
Tom O’Brien
California State University, Long Beach
Thomas.OBrien@csulb.edu
(562) 985-2875
swtwc.org

SOUTHEAST
Stephanie S. Ivey
The University of Memphis
ssalyers@memphis.edu
(901) 678-3286
memphis.edu/setwc

MIDWEST
Teresa M. Adams
University of Wisconsin–Madison
teresa.adams@wisc.edu
(608) 263-3175
mtwc.org

SOUTHEAST
Stephanie S. Ivey
The University of Memphis
ssalyers@memphis.edu
(901) 678-3286
memphis.edu/setwc
Midwest Transportation Workforce Center

HOW WE CAME ABOUT AND WHAT WE WANT TO DO
### Critical Issues for the Transportation Workforce

#### Demographic Changes
- “Baby Boomer” retirements
- 50 percent of the transportation workforce eligible to retire in ten years
- Loss of specialized knowledge and experience
- New generation of young workers and leaders have different expectations and needs

#### New Technologies
- Increasing rate for technological innovation in transportation planning and management
- More technically complex operating systems require high skilled operators and managers
- Traditional technicians become obsolete
Need for Transportation Workforce Centers

- Many good programs are disconnected
- Need for strategic/coordinated efforts
- Leverage existing resources
- Stimulate partnerships across transportation, education, workforce, labor communities
- Promote successful practices at all levels
  - Grades 6-12, Community Colleges, Technical Schools, University, Post Graduate, Professional Development
Key Activities and Deliverables

- Job Needs/Priorities Report
- Facilitate Partnerships for Workforce Development and Practices
- Compendium of Transportation Workforce Resources
- Maintain a Website and Clearinghouse
- Establish Engagement Group to Advise Center
- Develop Strategic Plan
- Develop Annual Program Plans
## Possible Types of Partnerships

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DESCRIPTION</th>
<th>ATTRIBUTES of PARTNER’s ROLES</th>
</tr>
</thead>
</table>
| Networking       | Sharing information and ideas                 | • Parties exchange basic information (e.g. contact info, organizational goals, intended outcomes, possible joint opportunities)  
|                  |                                               | • Door open for follow-up opportunities                                                        |
| Cooperating/Facilitating | Helping members accomplish their separate individual goals | All of the networking attributes, plus:  
|                  |                                               | • Share advice, resources, information, and contacts to help with goal attainment in a spirit of cooperation  
|                  |                                               | • May also include shared website information, promotional material and other media links        |
| Coordinating     | Working separately on shared goals            | All of the cooperating attributes, plus:  
|                  |                                               | • Identify shared, overlapping goals  
|                  |                                               | • Coordinate efforts to mutual benefit with minimal duplication  
|                  |                                               | • Sign letters of support or other public endorsement for projects and activities                 |
| Collaborating    | Working together toward a common goal but maintaining separate resources and responsibilities | All of the coordinating attributes, plus:  
|                  |                                               | • Agree on common and clearly articulated goals  
|                  |                                               | • Define how actions and responsibilities of one party support efforts of the collaborator(s)  
|                  |                                               | • Work is often done together, not separately                                                   |
| Full Partnership | Shared goals, decisions, and resources within a single entity | All of the collaborating attributes, plus:  
|                  |                                               | • Signed document that defines roles, responsibilities and expectations for each partner  
|                  |                                               | • Timelines and milestones for joint work, evaluation and retooling                           |
MTWC MISSION

- Building partnerships to develop tomorrow’s transportation workforce
- The MTWC will increase awareness of career opportunities in all sectors of the transportation industry and promote development of high-skilled, high-demand transportation workers by facilitating partnerships, and improving communication and sharing across all levels of workforce development organizations.
Strategy for making an Impact

**Collective Impact**
- A group working towards the same outcome,
- Looking at the same data,
- To continuously improve practices over time

**Coordinated Impact**
- A group working on the same issue,
- Sharing information about what they do
- To better coordinate efforts

**Individual Impact**
- Individual practitioners working on specific issues
- Collecting qualitative and quantitative data
- To demonstrate impact with individual students
5 elements of collective impact

- COMMON AGENDA
- SHARED MEASUREMENT
- MUTUALLY REINFORCING ACTIVITIES
- CONTINUOUS COMMUNICATION
- BACKBONE ORGANIZATION

For more information on Collective Impact, please visit www.fsg.org. This work is licensed under a Creative Commons Attribution-NoDerivs 3.0 Unported License. Please contact info@fsg.org with requests or questions.
Midwest Transportation Workforce Center

High-demand, High-skill, High-wage TRANSPORTATION OCCUPATIONS IN THE MIDWEST
What is a Transportation Job?

**Occupations Requiring Transportation Knowledge (O*NET):** Knowledge of principles and methods for moving people or goods by air, rail, sea, or road, including the relative costs and benefits.

**National Association of State Directors of Career Technical Education - Transportation, Distribution and Logistics:** Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.
## Transportation Job Share in Projected Employment 2022

### Table 4: Projected Transportation Jobs as a Percent of all Jobs

<table>
<thead>
<tr>
<th>State</th>
<th>Transportation Jobs*</th>
<th>All Jobs</th>
<th>% Transportation Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>206930</td>
<td>1955480</td>
<td>11%</td>
</tr>
<tr>
<td>IL</td>
<td>765142</td>
<td>6678572</td>
<td>11%</td>
</tr>
<tr>
<td>IN</td>
<td>301819</td>
<td>3148886</td>
<td>10%</td>
</tr>
<tr>
<td>KS</td>
<td>153983</td>
<td>1609566</td>
<td>10%</td>
</tr>
<tr>
<td>MI</td>
<td>382530</td>
<td>4497030</td>
<td>9%</td>
</tr>
<tr>
<td>MN</td>
<td>217956</td>
<td>3120400</td>
<td>7%</td>
</tr>
<tr>
<td>MO</td>
<td>281351</td>
<td>3086278</td>
<td>9%</td>
</tr>
<tr>
<td>OH</td>
<td>533310</td>
<td>5957100</td>
<td>9%</td>
</tr>
<tr>
<td>WI</td>
<td>311813</td>
<td>3269173</td>
<td>10%</td>
</tr>
</tbody>
</table>

*Excludes Air Transportation jobs, and transportation sector jobs not requiring transportation knowledge*
## Data Analysis Sources

<table>
<thead>
<tr>
<th>State</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>Iowa Workforce Information Center</td>
</tr>
<tr>
<td>IL</td>
<td>Illinois Department of Employment Security</td>
</tr>
<tr>
<td>IN</td>
<td>Indiana Department of Workforce Development</td>
</tr>
<tr>
<td>KS</td>
<td>Labor Information Center</td>
</tr>
<tr>
<td>MI</td>
<td>Michigan Department of Technology, Management and Budget</td>
</tr>
<tr>
<td>MN</td>
<td>Department of Employment and Economic Development</td>
</tr>
<tr>
<td>MO</td>
<td>Missouri Economic Research and Information Center</td>
</tr>
<tr>
<td>OH</td>
<td>Department of Job and Family Services</td>
</tr>
<tr>
<td>WI</td>
<td>Wisconsin Department of Workforce Development</td>
</tr>
</tbody>
</table>
High-Demand Occupations
Occupation having more than the median number of total openings for statewide or particular region.

High-Wage Occupations
Pay more than the industry median wage for the state.

High-Skill Occupations
Require post-secondary training or higher and long-term on the job training or related work experience.
Demand for Transportation Jobs in the Midwest Region (2022)

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number of Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laborers and Freight, Stock, and Material Movers, Hand</td>
<td></td>
</tr>
<tr>
<td>Truck Drivers, Heavy and Tractor-Trailer</td>
<td></td>
</tr>
<tr>
<td>Customs Brokers</td>
<td></td>
</tr>
<tr>
<td>Construction Laborers</td>
<td></td>
</tr>
<tr>
<td>Truck Drivers, Light or Delivery Services</td>
<td></td>
</tr>
<tr>
<td>Supply Chain Managers</td>
<td></td>
</tr>
<tr>
<td>Packers and packagers</td>
<td></td>
</tr>
<tr>
<td>Automotive Service Technicians and Mechanics</td>
<td></td>
</tr>
<tr>
<td>Bus Drivers, School or Special Client</td>
<td></td>
</tr>
<tr>
<td>Operating Engineers and Other Construction Equipment Operators</td>
<td></td>
</tr>
<tr>
<td>Cleaners of Vehicles and Equipment</td>
<td></td>
</tr>
<tr>
<td>Bus and Truck Mechanics and Diesel Engine Specialists</td>
<td></td>
</tr>
<tr>
<td>Civil Engineers</td>
<td></td>
</tr>
<tr>
<td>1st Line Supvr. of Transp and Material-Moving Machine and Vehicle Operators</td>
<td></td>
</tr>
<tr>
<td>Taxi Drivers and Chauffeurs</td>
<td></td>
</tr>
<tr>
<td>Highway Maintenance Workers</td>
<td></td>
</tr>
<tr>
<td>Dispatchers, Except Police, Fire, and Ambulance</td>
<td></td>
</tr>
<tr>
<td>1st Line Supvr of Helpers, Laborers, and Material Movers, Hand</td>
<td></td>
</tr>
<tr>
<td>Cement Masons and Concrete Finishers</td>
<td></td>
</tr>
<tr>
<td>Bus Drivers, Transit and Intercity</td>
<td></td>
</tr>
<tr>
<td>Logistics Analysts</td>
<td></td>
</tr>
<tr>
<td>Storage and Distribution Managers</td>
<td></td>
</tr>
<tr>
<td>Tire Repairers and Changers</td>
<td></td>
</tr>
<tr>
<td>Freight Forwarders</td>
<td></td>
</tr>
<tr>
<td>Conveyor Operators and Tenders</td>
<td></td>
</tr>
<tr>
<td>Structural Iron and Steel Workers</td>
<td></td>
</tr>
<tr>
<td>Paving, Surfacing, and Tamping Equipment Operators</td>
<td></td>
</tr>
<tr>
<td>Railroad Conductors and Yardmasters</td>
<td></td>
</tr>
<tr>
<td>Crane and Tower Operators</td>
<td></td>
</tr>
<tr>
<td>Transportation Security Screeners</td>
<td></td>
</tr>
<tr>
<td>Locomotive Engineers</td>
<td></td>
</tr>
<tr>
<td>Rail Car Repairers</td>
<td></td>
</tr>
<tr>
<td>Urban and Regional Planners</td>
<td></td>
</tr>
<tr>
<td>Transportation Inspectors</td>
<td></td>
</tr>
<tr>
<td>Transportation Planners</td>
<td></td>
</tr>
<tr>
<td>Rail-Track Laying and Maintenance Equipment Operators</td>
<td></td>
</tr>
<tr>
<td>Captains, Mates, and Pilots of Water Vessels</td>
<td></td>
</tr>
<tr>
<td>Railroad Brake, Signal, and Switch Operators</td>
<td></td>
</tr>
<tr>
<td>Sailors and Marine Oilers</td>
<td></td>
</tr>
<tr>
<td>Tank Car, Truck, and Ship Loaders</td>
<td></td>
</tr>
<tr>
<td>Rail Yard Engineers, Dinkey Operators, and Hostler</td>
<td></td>
</tr>
<tr>
<td>Hoist and Winch Operators</td>
<td></td>
</tr>
<tr>
<td>Traffic Technicians</td>
<td></td>
</tr>
<tr>
<td>Dredge Operators*</td>
<td></td>
</tr>
<tr>
<td>Subway and Streetcar Operators*</td>
<td></td>
</tr>
<tr>
<td>Ambulance Drivers and Attendants, Except Emergency Medical Technicians*</td>
<td></td>
</tr>
<tr>
<td>Transit and Railroad Police*</td>
<td></td>
</tr>
<tr>
<td>Marine Engineers*</td>
<td></td>
</tr>
</tbody>
</table>

* Estimate not available.
Hourly Salaries for Transportation Jobs in the Midwest

Occupation

- Marine Engineers
- Civil Engineers
- Storage and Distribution Managers
- Transportation Planners
- Logistics Analysts
- Supply Chain Managers
- Customs Brokers
- 1st Line Supvr. of Transp and Material-Moving Machine and Vehicle Operators
- Urban and Regional Planners
- Railroad Brake, Signal, and Switch Operators
- Railroad Conductors and Yardmasters
- Locomotive Engineers
- Transportation Inspectors
- Captains, Mates, and Pilots of Water Vessels
- 1st Line Supvr of Helpers, Laborers, and Material Movers, Hand
- Rail-Track Laying and Maintenance Equipment Operators
- Rail Car Repairers
- Structural Iron and Steel Workers
- Bus and Truck Mechanics and Diesel Engine Specialists
- Truck Drivers, Heavy and Tractor-Trailer
- Crane and Tower Operators
- Dredge Operators
- Transportation Security Screeners
- Operating Engineers and Other Construction Equipment Operators
- Cement Masons and Concrete Finishers
- Freight Forwarders
- Dispatchers, Except Police, Fire, and Ambulance
- Transit and Railroad Police
- Automotive Service Technicians and Mechanics
- Traffic Technicians
- Paving, Surfacing, and Tamping Equipment Operators
- Tank Car, Truck, and Ship Loaders
- Rail Yard Engineers, Dinkle Operators, and Hostler
- Construction Laborers
- Hoist and Winch Operators
- Conveyor Operators and Tenders
- Bus Drivers, Transit and Intercity
- Truck Drivers, Light or Delivery Services
- Highway Maintenance Workers
- Sailors and Marine Oilers
- Bus Drivers, School or Special Client
- Laborers and Freight, Stock, and Material Movers, Hand
- Tire Repairers and Changers
- Taxi Drivers and Chauffeurs
- Packers and packagers
- Cleaners of Vehicles and Equipment
- Ambulance Drivers and Attendants, Except Emergency Medical Technicians
- Subway and Streetcar Operators*

* Estimate not available.
Demand Comparison for Transportation Jobs in the Midwest Region (2022)

% Working with Post-Secondary Education

Starting Salary (Hourly Wage $)

- Transportation
- Architecture and Construction
- Law and Public Safety
- Government and Public Administration

Circles represent job categories, with size indicating demand. Jobs are grouped by industry and listed as follows:

**Transportation**
- Bus Drivers, School or Special Client
- Dispatchers, Except Police, Fire, and Ambulance
- Freight Forwarders
- Traffic Technicians
- Rail Car Repairers
- Cleaners of Vehicles and Equipment
- Sailors and Marine Oilers
- Packers and Packagers
- Tire Repairers and Changers
- Highway Maintenance Workers
- Construction Laborers
- Cement Masons and Concrete Finishers
- Paving, Surfacing, and Tamping Equipment Operators
- Operating Engineers and Other Construction Equipment Operators
- Crane and Tower Operators
- Automotive Service Technicians and Mechanics
- Rail-Track Laying and Maintenance Equipment Operators
- Railroad Brake, Signal, and Switch Operators
- Bus and Truck Mechanics and Diesel Engine Specialists
- Bus and Truck Drivers, Heavy and Tractor-Trailer
- Construction Laborers
- 1st Line Supvr. of Helpers, Laborers, and Material Movers, Hand
- 1st Line Supvr. of Transp and Material-Moving Machine and Vehicle Operators
- Urban and Regional Planners
- Civil Engineers
- Transportation Planners
- Customs Brokers
- Logistics Analysts
- Storage and Distribution Managers
- General and Operations Manager; Software Developer, Applications, and Ship Engineers not shown in chart.
## Job Needs and Priorities Report - Midwest Priority Occupations

<table>
<thead>
<tr>
<th>SOC Code</th>
<th>SOC Occupation Title</th>
<th>Midwest Percent Change 2012-2022</th>
<th>National Percent Change 2012-2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>53-1031</td>
<td>1st Line Supervisor of Trans and Material Moving Machine and Vehicle Operators</td>
<td>8.09</td>
<td>8.6</td>
</tr>
<tr>
<td>49-3031</td>
<td>Bus and Truck Mechanics, Diesel Engine Specialists</td>
<td>7.7</td>
<td>8.6</td>
</tr>
<tr>
<td>17-2051</td>
<td>Civil Engineers</td>
<td>15.2</td>
<td>19.7</td>
</tr>
<tr>
<td>47-2061</td>
<td>Construction Laborers</td>
<td>17.8</td>
<td>24.3</td>
</tr>
<tr>
<td>13-1199</td>
<td>Custom Brokers*</td>
<td>7.7</td>
<td>7.4c</td>
</tr>
<tr>
<td>11-1021</td>
<td>General and Operations Manager</td>
<td>9.6</td>
<td>12.4</td>
</tr>
<tr>
<td>53-3032</td>
<td>Heavy and Tractor-Trailer Truck Drivers</td>
<td>21.3</td>
<td>11.3</td>
</tr>
<tr>
<td>13-1081</td>
<td>Logisticians</td>
<td>20.7</td>
<td>21.9</td>
</tr>
<tr>
<td>53-5021</td>
<td>Mates - Ship, Boat and Barge**</td>
<td>8.6</td>
<td>13.8</td>
</tr>
<tr>
<td>47-2073</td>
<td>Operating Engineers and Other Construction Equipment Operation</td>
<td>14</td>
<td>18.9</td>
</tr>
<tr>
<td>53-5031</td>
<td>Ship Engineers</td>
<td>--</td>
<td>7.8</td>
</tr>
<tr>
<td>15-1132</td>
<td>Software Developers, Applications</td>
<td>18.6</td>
<td>22.8</td>
</tr>
</tbody>
</table>
“Growing our Own”

- Goal: Develop transportation expertise within immigrant groups.

- Where: Twin Cities - immigration gateway

- Tasks:
  - What are the cultural views of transportation jobs?
  - Attract students to pathways in Diesel Mechanics as a start.
  - Develop materials into a path of future technologies- What is probable?

- Initial partners: City of Minneapolis – Fleet Office, U of Minnesota - Center for Transportation Studies, Minnesota DOT
“Disrupting the System”

- Goal: Career Awareness
- Reach students as they are using Career Information Systems Vendor Software

- Tasks:
  - Blogging
  - Identify Transportation content to include in Occupations description
Credentials for Maritime Workforce

Goal: Create stackable credentials for maritime (blue and brown water) workforce

- New practices such as Container-on-Barge, and new technologies in maritime.
- Initial partners: Ohio DOT, Southeast Maritime Transportation Center (SMART)

Initial Tasks:
- Develop questions for Ohio Maritime Study
DOT HR Managers
Community of Practice

- Goal: Convene roundtable discussion meetings to share issues and share practices
- Big Issue: Recruitment of critical jobs, occupations vary from state to state
- Long-term issue: Diversity and inclusion
MTWC Activities Fall 2016

- Facilitated Conversations among Stakeholders
- Continue Success Stories Campaign
- Begin Clearinghouse Campaign
- Webinar
National workforce: FHWA Transportation Workforce Strategic Initiative

- Establish, Engage, and Facilitate Discipline Working Groups
  - Planning, environment, engineering, safety, and operations
  - Public agency and private sector transportation organizations, technical schools, community colleges, and university representatives
  - Inform stakeholder organizations

  - Experiential Learning and Innovative Experiential Learning Programs
  - Needs for 5-15 years
  - Define Career Pathways

- Identify and Document Career Pathways, Conduct Demonstration Programs, and Recommendations for Nationwide Implementation
  - Identify Barriers to Implementation
  - Legislative, Policy, Funding Recommendations
What can planners do?

- Develop a human capital strategic plan.
- Start the conversation about workforce with your industry stakeholders.
- Broaden your transportation plans to include workforce estimates.
- Help build the literature on transportation workforce. Use your SPR dollars for workforce research.
- Be a Mentor.
What can planners do?

- Share your resources or Success Stories so that we can include them in MTWC Clearinghouse.
- Work with your feeder schools to include the skills you need in the university curriculum.
- Look into apprenticeships as a way to get people to work in your organization.
- Increase awareness of planning among young people by contributing an article to Transportation Today WI.
Resources

- Illinois Human Capital Strategic Plan
  

- National Transportation Workforce Summit 2012 (CUTC)
  

- A Plan for Growing Southwest Indiana’s Logistics Sector
  
Midwest Transportation Workforce Center

1415 Engineering Drive #2205
University of Wisconsin - Madison
Madison WI 53706
mtwc.org

Director: Teresa Adams
teresa.adams@wisc.edu
608.263.3175

Program Manager: Maria Hart
maria.hart@wisc.edu
608.262.6639