



National Transportation Career Pathways Initiative

The transportation industry faces several challenges to developing a qualified talent pipeline, among these are loss of experienced workers due to retirement, competitive hiring, workforce diversity, and the adoption of new technologies.

To address these issues, the U.S. DOT Federal Highway Administration (FHWA) funded the launch of a **National Transportation Career Pathways Initiative**, led by the National Network for the Transportation Workforce (NNTW), that:



- Uses labor market data and industry forecasts to identify the top 10-15 critical transportation occupations within 5 focus areas, covering the next 5-15 years
- Identifies the skills, competencies, experiences, and credentialing required for workers to be successful in these critical occupations
- Evaluates the availability, comprehensiveness, and effectiveness of existing educational and training outlets, courses, and materials
- Establishes career pathways, demonstration programs, and work-based learning projects as resources for education/training institutions across the nation.



**CAREER
PATHWAY
TEMPLATES**

**DRIVE
CURRICULUM
AT LOCAL
SCHOOLS**

**LONG-TERM
INDUSTRY/
ACADEMIC
WORKING
GROUPS**

- For critical transportation occupations
- Continue to steer and advise workforces' skills, competencies, job availability, wages, etc.

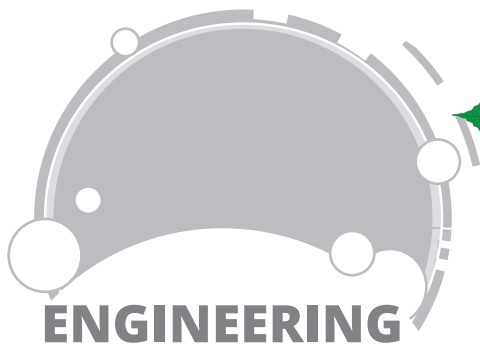
Join the NNTW and contribute your insight and expertise in one or more focus areas of the National Transportation Career Pathways Initiative!

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www.nntw.org/career-pathways



ENGINEERING

Today, transportation agencies are changing their mindset from construction to maintenance thinking. They are assessing roadways across the entire lifecycle; not just construction and maintenance costs, but also environmental and health impacts. New understanding of these impacts is causing us to rethink roadway maintenance, and mitigating these impacts is increasingly the responsibility of maintenance workers.

Another trend is the move toward automated vehicles. Future Highway Maintenance Engineers will use new computerized technologies, such as drones and geographic information systems (GIS). Fortunately, young people today are passionate about environmental sustainability and stewardship. Aligning the needs of this discipline with the up-and-coming workforce is quite feasible.

Learn more: mtwc.org

ENVIRONMENT

Creating Pathways to prepare future workers for new Environmental Roles in meeting Transportation Challenges

From technicians to senior leaders and from certificate programs to advanced academic degrees—new competencies, skills, and rapidly evolving occupational categories are part of the changing face of how public and private organizations are staffing up to meet environmental challenges and apply new technologies.

SMART COMMUNITIES:

- ▶ Traffic Signal Technicians
- ▶ ITS Field Technicians
- ▶ Traffic Operations Engineers
- ▶ Smart City Coordinators
- ▶ Chief Sustainability Officers

SHARED MOBILITY:

- ▶ EV / E-Bike Technicians
- ▶ Mobility Managers
- ▶ Transit Planners
- ▶ Mobility Data Analysts
- ▶ Bike/Car Share
- ▶ Implementation Specialists

CLIMATE ADAPTATION:

- ▶ GIS Technicians
- ▶ Drone Operators
- ▶ Remote Sensing Analysts
- ▶ Chief Resilience Officers
- ▶ Infrastructure Monitoring Designers

Learn more: netwc.org

PLANNING

Transformational technologies are reshaping existing transportation planning occupations and creating demand for new skill sets. Today's transportation planner is focused on the design of infrastructure for the movement of people and goods, but tomorrow's planner will be equally focused on data and statistical analysis to optimize existing infrastructure to transport people and goods in the most efficient ways possible. The Transportation Planning Discipline Working Group (DWG), comprised of planning and GIS professionals and educators, is helping the Southwest Transportation Workforce Center team identify the top few critical occupations over the next 5 to 15 years. Examples of transportation planning occupations the DWG is reviewing includes:

- Cartographers & Photogrammetrists
- Data Analysts/Operations Research Analysts
- Software Developers
- Environmental Planners
- Environmental Scientists & Specialists
- Computer & Information Research Scientists
- Traffic Technicians
- Urban & Regional Planners
- Geospatial Information Scientists & Technologists

Learn more: swtwc.org

OPERATIONS

Industry-Academia Collaborations to Advance Awareness, Interest, and Competencies in Transportation Operations

Skillset and competency requirements for transportation operations occupations are rapidly evolving with continual advances in technology. The Operations Career Pathway project will focus on defining and demonstrating career pathways and core competencies for priority occupations through industry-academia partnerships. The goal is to provide greater transparency of operations career opportunities and experiential learning for post-secondary students.

FREIGHT:

- Commercial Drivers
- Data Science Analyst
- Diesel Mechanics
- Operations Research & Modeling Analysts
- Project & Program Managers

TRANSIT:

- Operations & Environmental Planners
- Project Managers
- Commercial Drivers
- Diesel Mechanics
- Industrial Trainers

TRAFFIC:

- Senior Program Managers
- Program Planners
- Traffic Control Technicians
- Incident Managers
- Field Operators
- ITS Technician

Learn more: memphis.edu/setwc

SAFETY

Industry-led Experiences to Ensure Incoming Transportation Workers Possess The Needed Safety Competencies

Safety knowledge is multi-disciplinary and encompasses road design, vehicle design, road users, human behavior, and infrastructure construction and maintenance worker practices. The complexity of knowledge, skills, and abilities required of safety professionals is often left to on-the-job training and professional development. The Safety Career Pathways project will focus on enhancing education opportunities for students at technical schools and universities through industry-led real world safety project experience.

Learn more: wrtwc.org

CRITICAL SAFETY OCCUPATIONS

Occupational Safety & Organizational Safety Culture

Road Safety

Road Construction & Maintenance Project Safety

SYSTEMS APPROACH TO SAFETY

CORE COMPETENCIES