

Training Course: Highway Planning and Logistics

Instructor and contact information

Dr. Pan Lu
430C Quentin Burdick Building
Email: pan.lu@ndsu.edu

Dr. Denver Tolliver
444E Quentin Burdick Building
Email: denver.tolliver@ndsu.edu

Training description

This training introduces professionals from various backgrounds to shared concepts in highway planning and logistics. Truck traffic is projected to continue to increase during the next 25 years, increasing congestion and creating demands for additional highway capacity and better utilization of existing infrastructure. The capacity and performance of highway systems significantly affects the cost and performance of truck operations and the overall cost and reliability of business logistics and supply chain operations.

In this training, participants will learn about the relationships between industrial traffic, goods movements, and the highway system in a region or corridor and gain a broad understanding of the interaction between industry logistics and highway transportation.

Topics will include fundamentals of highway transportation and freight logistics, including motor carrier economics and operations, the effects of heavy trucks on highway infrastructure, truck size and weight issues and regulations, highway classification systems, highway capacity planning, and level of service.

Training objectives

At the conclusion of this training, participants will have gained:

- A fundamental understanding of the trucking industry, including its organization, types of services offered, operations, and key issues
- A working knowledge of regulations that affect trucking operations, such as hours of service and truck size and weight regulations
- Insights into the costs of trucking operations and how they vary among types of services
- A basic understanding of how truck weights affect the highway infrastructure, including the differing effects of gross truck weights and axle weights
- Knowledge of highway classification systems and the roles of different classes of highway in the overall highway network
- A working knowledge of highway capacity using the Highway Capacity Manual and related software
- A working knowledge of highway level of service and its role in transportation planning

Training Topics

- Introduction to Highway Planning
- Introduction to Motor Carrier Transportation
- Motor Carrier Operations and Costs
- Effects of Trucks on Highway Infrastructure
- Truck Weight Regulations
- Truck Size Regulations
- Introduction to Highway Capacity and Level-of-Service
- Capacities of Freeways and Expressways
- Capacities of Multilane Highways
- Capacities of Two-Lane Rural Highways
- Multimodal Corridor Capacity