



CFIRE

National Center for Freight & Infrastructure Research & Education

Overview

The University of Wisconsin–Madison is the home of the National Center for Freight and Infrastructure Research and Education (CFIRE), a national University Transportation Center (UTC). CFIRE's research, education, and outreach efforts advance technology, knowledge, and expertise in the planning, design, construction, and operation of sustainable freight transportation infrastructure and systems.

CFIRE coordinates the Mid-America Freight Coalition, a consortium of ten states that cooperate on the planning, operation, preservation, and improvement of freight transportation infrastructure and networks in the Midwest.

CFIRE also supports the training and education of the next generation of professionals through the UW Transportation Management and Policy program.

CFIRE's annual budget is approximately \$6.5 million.

Sustainable Freight

The Center conducts research, sponsors training opportunities, develops academic coursework and continuing education programs, and sponsors regional and national conferences that support the CFIRE theme—Sustainable Freight Infrastructure and Systems—and reflect the Center's Signature Technical Areas of Research (STARS).

- Design, Materials, and Construction Processes for Highway, Harbor, and Rail Infrastructure
- Energy and Environment
- Multimodal Systems Planning and Optimization
- Traffic Operations and Safety

The Center also sponsors related research on performance measurements, policy, economic effects, and emergency management.

Freight and the Economy

The vitality of the US economy depends on global trade, which in turn depends on the rapid and efficient movement of goods.

While a significant amount of consumer goods are manufactured internationally, there remains a substantial amount of goods that are produced domestically and moved through the United States for use at home and abroad.

- In 2010, domestic freight movements averaged 52 million tons per day. Imported freight movements averaged 4 million tons per day in the same period.
- By 2020, domestic freight movements will increase by nearly 70 percent above 2003 levels. International freight movements for this same period are expected to increase 85 percent.
- Overall tonnage is projected to increase 61 percent between 2010 and 2040.
- Intermodal ship-rail and truck-rail goods movements accounted for 18 percent of the value of freight transportation in 2007; this is projected to grow to 27 percent by 2040.
- Expenditures on freight itself represent more than \$660 billion (or 6.4 percent of the US Gross Domestic Product) annually.

An efficiently functioning freight system serves as the foundation of the US economy and supports the growth and success of every other industry.

As such, it's crucial that the United States continue to invest in developing and maintaining its freight infrastructure.



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Partner Institutions



The University of Wisconsin–Madison is the CFIRE lead institution and the hub for innovative transportation research and education.



The University of Illinois–Chicago hosts the Urban Transportation Center, which addresses congestion, demand management, freight planning, and land use issues in an urban context.



The University of Toledo is home to both a Tier II UTC and the Intermodal Transportation Institute, which develops technology-enabled transportation systems.



The University of Wisconsin–Milwaukee hosts the Center for Urban Transportation Studies, which focuses on a range of transportation issues.



The University of Wisconsin–Superior is home to the Transportation and Logistics Research Center and the Great Lakes Maritime Research Institute.

Research Affiliates



The UW Construction Materials Support Center helps local, state and federal agencies find timely solutions to project development problems and construction and materials issues.



The Recycled Materials Resource Center is a federal-university partnership that focuses on beneficial use of recycled materials.



The Traffic Operations and Safety Laboratory seeks to improve traffic operations and safety in Wisconsin and across the Midwest.



The Transportation and Urban Systems Analysis Laboratory aims to advance our understanding of the dynamics of transportation systems and their interrelationship with other components of the urban environment.

Mid-America Freight Coalition

The Mid-America Freight Coalition is a regional organization that cooperates in the planning, operation, preservation, and improvement of transportation infrastructure in the Midwest. The ten



coalition states share key interstate corridors, inland waterways, and the Great Lakes. The MAFC is staffed by the National Center for Freight and Infrastructure Research

and Education (CFIRE), a national University Transportation Center (UTC) at the University of Wisconsin–Madison, and coordinated in conjunction with the Wisconsin Department of Transportation (WisDOT).

The Mid-America Freight Coalition began in 2002 as the Upper Midwest Freight Corridor Study and operated as the Mississippi Valley Freight Coalition from 2006 to 2010. For the 2010-2012 period, the coalition will focus its research and outreach efforts on commercial vehicle operations training, economic analysis training, and the creation of a regional freight plan. The departments of transportation of the ten member states provide two thirds of MAFC funding for the MAFC program; one third is provided by CFIRE.