

From the Director



Teresa M. Adams, Director

Major flooding and nearly incessant rains halted freight and passenger traffic on our Interstates and other highways, adversely affecting shipping economies. The ordeal exposed areas where the transportation system was very resilient and other areas where we face critical issues. Overall the events clearly emphasized the need for resiliency in our infrastructure systems. Detours, emergency road connectors, real-time online communication of weather forecasts, road closures and conditions, and alternative routes for freight and passenger vehicles were among the responses to the events.

The transportation agencies did an outstanding job to address matters quickly and

creatively and then communicate plans effectively.

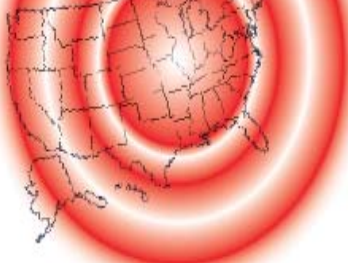
To avoid prolonged closure of Interstate 90-94 in Wisconsin, CFIRE executive committee member and WisDOT secretary Frank Busalacchi authorized construction of two-lane asphalt connectors about five miles long from Johnson Creek to Lake Mills that restored the freeway to “working order.” Until then, traffic from Milwaukee to Madison was diverted through Beloit at the Wisconsin-Illinois line, a 113-mile detour. For Interstate traffic from the Twin Cities to Chicago, Wisconsin Emergency Management advised drivers to take I-94 to State Highway

29 across to Green Bay, then take Interstate 43 south to Milwaukee. DOT also restricted oversize and overweight commercial truck traffic to single-trip permits on 400 center line miles along several routes in the southern half of Wisconsin, with exceptions for delivery of relief supplies to flood victims.

Wisconsin was not alone. Parts of Interstates in Indiana were detoured because of flooding, with some traffic being rerouted from I-70. Illinois closed roads and altered truck routes but like Wisconsin, had real-time data available on an interactive online map.

See Adams, continued on page 2

Moving Ahead . . . 2008 Mid-Continent Research Forum



**Aug. 14-15,
2008**

www.mrutc.org/midcon

Register Now!

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MVFC Renewed

At the July 2008 Mississippi Valley Conference of the American Association of State Highway and Transportation Officials, the Mississippi Valley Freight Coalition (MVFC) was renewed for 2 years at \$750,000.

This renewal will also mark the first time that all ten states of the Mississippi Valley Conference are financially supporting the regional freight coalition.



Adams (from page 1)

The Iowa DOT responded to flooding in the Des Moines and Cedar Rapids areas by diverting freight and passenger traffic. Missouri and Minnesota also felt the impact of high water and made accommodations.

Hundreds of barges carrying the region's commodities were stuck north of La Crosse, unable to get to export or internal markets. Rail lines were also washed out with bypass and reserve track ways being used across parts of Kansas and Iowa. The flooding



Left: Downtown Cedar Rapids, Iowa hit by Iowa floods in June. Photo from Iowa Department of Transportation. Detours affected travel in and around Cedar Rapids and Des Moines.

highlighted the fact that our economy relies on freight -- and specifically freight in motion.

Mother nature has certainly intervened once again, causing not only a broad based challenge to transportation managers, but highlighting the fragility of the system. The already weakened economy will feel long term impacts from the bottlenecks and delays in the movements of freight this Spring. More importantly we must also recognize the long term impact on crops and our region's agricultural

production.

CFIRE is poised to undertake projects looking at the resiliency of the freight system, especially along key corridors. At the Mississippi Valley Conference meeting in Kansas City, the MVFC was approved for renewal. Now more than ever it is essential that we collaborate. Among the Coalition projects is one to explore the system resiliency with respect to freight. The agricultural and manufacturing sectors certainly are impacted by these events.

CFIRE research is focusing on improving our ability to manage and accommodate freight demand. Planning and research, with appropriate levels of funding and support, hold the key to meeting future challenges, particularly with today's tight margins, high fuel costs, and uncertain federal revenues. The alternative is an outmoded system that costs everyone in shipping delays and fuel losses that adversely affect not only freight but the economy and the environment.

CFIRE RFPs Submitted; Project Awards to be Announced Soon

CFIRE recently completed its first formal research solicitation. The Center solicited proposals leading to significant transformational impacts on freight infrastructure and operations. CFIRE also requested Letters of Intent on areas outside of the formal RFPs.

The CFIRE advisory committee posted the RFPs in April based on project ideas generated from the 2007 *Sustainable Freight Transportation Infrastructure & Systems* workshop held November 16 in Madison. At that workshop transportation planners, researchers, and stakeholders created research roadmaps and ranked freight-related concerns under the four Signature Technical Areas of Research (STARs). These roadmaps will be revisited during the 2008 Research Workshop on August 13th 2008.

Proposals are subject to a peer review process and will be underway in fall 2008. The RFPs and letters of intent concern the following (in priority order by STAR):

Design, Materials and Construction Processes for Highway, Harbor, and Rail Infrastructure

1. Rapid replacement/construction of bridges to enhance freight
2. Bridge analysis and evaluation under overload vehicles
3. Reconstruction of railroads and highways with In-Situ reclamation materials
4. 3-D design terrain models for construction plans and GPS control of highway construction equipment

Multimodal Systems Planning and Optimization

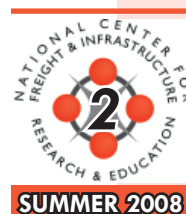
1. Understanding and modeling freight stakeholder behavior
2. Understanding the land use-freight transportation connection
3. Methodology for improving metropolitan-area freight transportation demand forecasting

Freight Traffic Operations and Safety

1. Traffic management of heavy vehicles in work zones
2. Truck driver simulators and highway safety
3. Expand intermodal connections to Great Lakes ports

Energy and Environment

1. Environmental sustainability for freight transport
2. Short-term, low-cost strategies to reduce freight emissions
3. Characterizing and reducing risks of transporting hazardous materials



For more information, check the CFIRE Web site.

NEWSLETTER

Community Maps Pilot Site

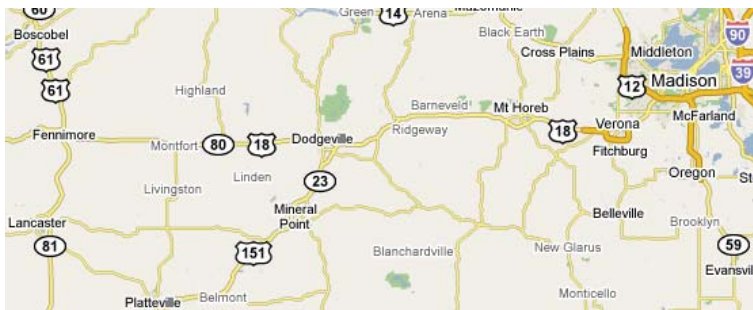
The click of a link is providing vital travel information in five southwestern Wisconsin counties, thanks in large part to the efforts of CFIRE, the Midwest Regional University Transportation Center (MRUTC), the Wisconsin Traffic Operations and Safety Laboratory (TOPS) and the Southwestern Wisconsin Regional Planning Commission (SWWRPC).

The Community Maps Pilot Site, covering Grant,



manager Joni Graves said, “is the value of local knowledge. With a visual image, local officials can identify inaccurate or outdated information and make appropriate changes.”

MRUTC secured NHTSA funding for the project through the Wisconsin Traffic Records Coordinating Committee. To complete the project, CFIRE is working with



Community Maps Pilot covers this five-county region west of the Madison WI metropolitan area

Green, Iowa, Lafayette and Richland counties in Wisconsin - employs a Google map interface to identify roadwork areas and locations where motor vehicle collisions have occurred involving fatalities, injuries, or property damage. Users get valuable information about individual highways and streets or to plan trips and avoid delays. “The most important thing,” SWWRPC program

Graves and TOPS Lab’s Steven Parker. “The MRUTC deserves all the credit in the world, because they provided support when this promising project could easily have been dropped for lack of resources” Graves said. The Community Maps Pilot link is <http://transportal.cee.wisc.edu/partners/community-maps/>

Rep. Kagen Visits CFIRE, Wisconsin Research Labs

U. S. Representative Steve Kagen (D-Green Bay) visited CFIRE and the Wisconsin Research Labs May 2. Center Director Teresa Adams helped coordinate the tours.



U.S. Rep. Steve Kagen (D-Green Bay) will play a key role in the 2009 federal reauthorization of SAFETEA-LU as a member of the House Transportation and Infrastructure Committee.

Kagen, a member of the House Transportation and Infrastructure Committee, learned first-hand about CFIRE’s research commitment to safe and efficient movement of commercial freight and its education and outreach programs. Kagen was introduced to UW and public-private partnerships that increase awareness and develop cooperative strategies in addressing Midwestern transportation issues, and the resources available for developing safe, efficient, and environmentally-sound transportation modes.

Kagen toured the Wisconsin Structures and Materials Testing Lab and was briefed on the asphalt pavement research program. Staff also briefed Kagen on the Transportation Management and Policy (TMP) graduate program which provides students with opportunities to research topics of their choice and present them as part of their coursework.

CFIRE Hiring Researcher Position

CFIRE is recruiting for a 100% researcher position to work closely with the excellent students and faculty across campus.

Key areas of responsibility include:
Freight Transportation Research,
Professional Course Development & Presentation,
External Relations & Program Development,
and Program Integration.

Salary: \$60,000-\$90,000 DOQ

Excellent benefits. Details at cfire.wistrans.org.



NEWSLETTER

CFIRE , MVFC Truck Parking & Bottlenecks Surveying Moving Ahead at Trucker Shows

CFIRE and MVFC researchers are collecting interactive survey data from freight stakeholders to determine locations and possible solutions for alleviating freight bottlenecks and expanding truck parking availability in the 10-state Mississippi Valley region and in Wisconsin.

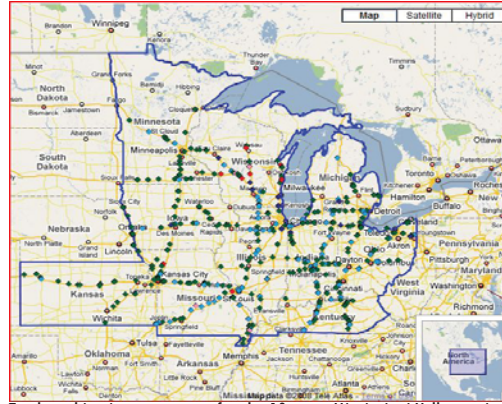
CFIRE researchers Jessica Guo and Bruce Wang, and Teresa Adams are leading research teams on these efforts.

MVFC's technical committee approved the projects in 2007, along with the expanded regional truck parking initiative. Stakeholders will nominate critical bottlenecks in a Web-based survey that will help researchers establish a ranking system and identify strategies for alleviating freight bottlenecks. Meanwhile, CFIRE and MVFC researchers are completing interactive truck parking surveys to address shortages in Wisconsin and the Mississippi Valley Region and develop low cost strategies to increase availability. Among the key initiatives has been data collection at Iowa and Wisconsin trucker's conventions and trade shows. Consultant Libby Ogard has been a tremendous resource in the surveying phase. Researchers worked exhibit booths to gain invaluable survey data, industry contacts, and overall project input.

CFIRE graduate students Ravi Pavuluri and Praveen Srivastava created an innovative application of a Google Maps interface and GIS technology to collect stakeholder data from highway patrols, freight planners, and truckers. The next steps are to identify which major freight corridors need to be addressed first, do a regional inventory of truck parking spaces, and select survey participants to identify trouble spots in the region



Survey markings showing truck parking problem areas in the Midwest



Truck parking inventory map for the 10-state Mississippi Valley region.



Researchers collect data at the 2008 Iowa Trucking Jamboree

Researcher Bruce Wang said Wisconsin truckers are limited in making timely deliveries because of some strict local ordinances, making convenient, safe parking all the more important.

Final reports are expected in January 2009 on both projects.



Logistics 101

CFIRE researchers developed a logistics short course that's offered online. Researchers Bruce Wang and Ernie Wittwer developed the course along with CFIRE director Teresa Adams. A pilot was conducted at the recent Mississippi Valley Freight Coalition (MVFC) meeting in Indianapolis.

The course helps the public sector better understand the needs of the freight community, and the driving forces behind the ebb and flow of freight on the roads. The first day covers the concepts of transportation and logistics management. The second day covers contemporary T&L management issues, such as operations, applied technologies, challenges, and public policy concerns.

"Our pilot was very successful," CFIRE researcher Bruce Wang

Continued on next page....



CFIRE's Bruce Wang presents the Logistics 101 course at MVFC Meeting in Indianapolis on April 2

N E W S L E T T E R

Join the CFIRE Team: Post-Doc Researchers Wanted!

Research opportunities are expanding rapidly within the freight environment. The University of Wisconsin is actively seeking recent graduates for post-doctoral researcher positions for freight related activities.

Candidates will help design and conduct Center research and outreach projects, identify opportunities for external research funding and outreach, assist in writing research proposals, soliciting for external funding, develop outreach opportunities, and assist faculty associated with the Center. Consider joining the CFIRE team!

CFIRE research crosses a broad spectrum of engineering, economics, policy, and planning. For more information, contact CFIRE director Teresa Adams.

Logistics 101, continued

said. "Some of the results will be added to Wisconsin DOT's size and weight limit study and CFIRE's current load size research."

Suggestions from the pilot inspired the CFIRE research team to add a customer survey to the online version, which is available free at <http://wistrans.org/cfire/Research/research.htm>.

Participants are able to download lecture notes, view narrated PowerPoint presentations, watch live interviews with experts, and provide course feedback to the CFIRE

FHWA EAR Projects Named

Five FHWA Exploratory Advanced Research (EAR) Projects related to transportation practices and innovation have been selected:

- Properties of Fly Ash in Hydraulic Cement Concrete for Pavement Layers and Transportation Structures;
- Volumetric Particle Image Velocimetry System for experimental Bridge Scour Research;
- Flexible Skin Areal Shear Stress and Pressure Sensing Systems;
- Behavior and Design Requirements of Geosynthetic Reinforced Soil Structures;
- Advanced Digital Imaging for Accident Prevention and Reducing Traffic Congestion.

Comments should be directed to FHWA Docket No. FHWA-2008-0070 by October 6, 2008.



The Mississippi Valley Freight Coalition (MVFC) has released its 2-year work plan after receiving approval for renewal at the July 8, 2008 Board of Directors meeting in Kansas City, MO. The work plan focuses on enhancing



The Great Lakes Mega-Region (from Plan 2050)

multimodal regional freight transportation systems and expanding education and outreach efforts to policy makers and the general public.

The MVFC work plan calls for \$750,000 in funding -- \$500,000 from the ten member states and \$250,000 from CFIRE, which leads MVFC research projects.

More information at: mississippivalleyfreight.org.



MVFC Plan 2008-2010

Six recommendations for 2008-2010 are:

1. Develop and disseminate outreach materials to enhance freight investments in the Region. The project would develop quality written and illustrated materials to educate elected officials and the general public about freight concepts and the importance of multimodal freight networks to the Mississippi Valley Region's economy.

2. Develop regional recommendations for reauthorization. MVFC supports a broad regional message for federal reauthorization emphasizing multijurisdictional freight cooperation and regional consistency in freight plan-



ning. Key areas are the impacts of mega-regional growth, technological advances, and railroad crossing safety issues on freight movement.

NEWSLETTER

MVFC Plan (from page 5)

3. Commodity & Industry Profiles for the MVC

This project identifies the multimodal commodity flows of manufactured goods, agricultural products, and chemical and mineral shipments. Researchers will analyze and identify the modes, routes, costs, and delivery times of shipping processes to determine which freight corridors have the most significant impact on commodity shipments, develop a standard profile template for commodity freight using GIS technology, and fa-

studies of the American Transportation Research Institute (ATRI), and use performance data from the I-70 dedicated truck lane corridor project to test the evaluation tool.

5. Resiliency of MVFC Freight Corridors

Researchers will rank key nodes and sections within the MVFC freight network that could be most affected by freight capacity losses resulting from the lack of alternative routes. The project team will develop a regional freight network



AASHTO Freight Capacity Data

ilitate multi-state regional cooperation.

4. Performance measures for evaluating projects.

With the development of large-scale projects such as Corridors of the Future and others, performance-based evaluation will educate communities on the benefits of multi-state projects and the evaluation process for investment decisions. The project team will coordinate its efforts with ongoing

model with a map identifying sites with the greatest need for alternative or modified routes.

6. Member Services

MVFC will hold an annual meeting and workshop; produce a quarterly newsletter; and start a state-by-state web blog covering current and potential freight activities, among other activities.

ATRI New Drivers Study Focuses on Safety

Performance

The American Transportation Research Institute (ATRI) recommends performance-based training for commercial truck drivers.

The study responded to concerns about training methods for drivers with up to 18 months experience. ATRI analyzed effects of training hours, curriculum, and learning environment on driver safety performance and found that total hours spent in training alone did not have a significant effect on new drivers' safety performance.

Six motor carriers provided data on 17,000 drivers to a technical advisory committee of training experts from private and public training programs and representatives of motor carriers and driver groups. ATRI president and chief operating officer Rebecca Brewster serves on the CFIRE research advisory and executive committees.

ATRI conducts research related to freight's role in maintaining a safe, secure & efficient transportation system.

MCDI Grants Announced

EPA Region 5 has received approximately \$5 million for Midwest Clean Diesel Initiative (MCDI) projects designed to reduce diesel emissions in five Midwestern states. Applicants from Wisconsin, Illinois, Minnesota, Michigan, Indiana and Ohio had until June 12 to submit proposals to the Environmental Protection Agency (EPA) for competitive grant funds to subsidize projects involving vehicle retrofitting or idle-reduction technologies, cleaner fuel use, engine upgrades, vehicle or equipment replacement, or innovative financing programs. EPA Region 5 expects to receive funds for between 10 and 20 projects ranging from \$100,000 to \$750,000, based on funds availability and the quality of proposals received. EPA makes final selections in the fall. The project period begins in January and is expected to last until December 2010.



CFIRE 21st Century Transportation Workforce Summit Scheduled for December 8-9, 2008
 Visit cfire.wistrans.org for more details

NEWSLETTER

CFIRE Sponsors REES Summit



Teresa Adams and the attendees at the 2008 REES Symposium

The American Railway Engineering and Maintenance of Way Association (AREMA), the Federal Railroad Administration (FRA), and the Association of American Railroads (AAR), organized the

symposium out of concern over the disappearance of railroad engineering from most engineering curricula in the U.S. and Canada. CFIRE was a sponsoring organization.

CFIRE director Teresa Adams participated in the symposium along with 33 professors from across the country and from as far away as Nigeria. The following seven topics were covered:

- Introduction to Railroad Engineering
- Introduction to Railway Infrastructure
- Railroad Power, Acceleration, and Traffic Control
- Railroad Intermodal Transportation
- Transit/Commuter/Intercity Rail Transportation
- Railroad capacity and
- Railroad Engineering Design Project

Other topics were covered during the two days of class instructions included a vision for the importance of providing Railroad Engineering Education in engineering classes, the current and future needs for capacity expansion, an overview of North American railroad engineering course offerings and research programs, and panel discussions on railroad engineering education and recruitment needs.

Course materials were distributed to encourage professors to add railroad topics to transportation classes or to develop new railroad engineering courses at the undergraduate and graduate levels.

After two days of instruction, participants toured the Norfolk Southern rail yard in Decatur, Illinois to provide a first-hand look at railroad operations.

The historic symposium made professors aware of the importance of railroad engineering to freight movement and the resources required for rail freight mobility. Railroad company representatives indicated that railroad education commands competitive salaries in today's market.

“The next step is for the participants to convince their colleagues to find room for material in already crowded engineering undergraduate curriculums,” Adams said. “The US freight rail system is the envy of the world. Think about what we could accomplish if we have a new generation of US engineers interested in this mode.”

TRANSPORTATION PROGRAM COURSE OFFERINGS THROUGH:

DEPARTMENT OF *Engineering Professional Development*

The following transportation short-courses are being offered by the University of Wisconsin–Madison. Please refer to the EPD course web pages for more information: <http://epdweb.engr.wisc.edu/> Click on “Courses” then “Civil and Environmental Engineering Courses”.

Title	Course Number	Date(s)	Location
Engineering Fundamentals of Rail Freight Terminals, Yards, and Intermodal Facilities: Current Practices in Design and Construction	J942	Sept. 15-16, 2008	Philadelphia, PA
Freight Railroads: Best Operating Practices <i>Scholarships Available from CFIRE</i>	K111	Oct. 21-22, 2008	Madison, WI
Fundamentals of Railway Train Control and Signaling Systems	J943	Sept. 17-18, 2008	Philadelphia, PA
Fundamentals of Seismic Design	K 024	Apr. 27-29, 2009	Madison, WI
Designing and Constructing Sanitary Sewer Systems	K064	Sept. 22-24, 2008	Madison, WI
Soil Engineering for Roads and Pavements	K011	Oct. 28-29, 2008	Las Vegas, NV
Improving Public Works Construction Inspection	K118	Dec. 8-9, 2008	Las Vegas, NV,
Managing Snow and Ice Control Operations	K119	Oct. 6-7, 2008	Madison, WI
Municipal Engineering Fundamentals for Non-Engineers	J950	Nov. 3-4, 2008	Las Vegas, NV

Adams and Bittner Tour BNSF Yard

CFIRE Director Teresa Adams and Deputy Director Jason Bittner were given a behind the scenes tour of BNSF's Argentine Yard following the MVC Annual Meeting in July. Special thanks to Drew White who provided the tour and Melodi Tripp who arranged the tour from BNSF. The Hump Yard is a site to see for classification on unit trains.



U P C O M I N G E V E N T S

August

- **Wisconsin Transportation Center Annual Mid-Continent Transportation Research Forum**, August 14-15, 2008, Madison, Wisconsin. <http://www.mrutc.org/midcon/>
Sponsored by CFIRE
- **FTR Associate's Freight Transportation Conference**, Aug 26-28, 2008, Nashville, Indiana. www.ftrassociates.net

September

- **Ohio Conference on Freight**, September 15-17, 2008, Toledo, Ohio, <http://www.tmacog.org/ocf.htm>
- **North American Freight Flows Conference: Understanding Changes and Improving Data Sources**, Washington, DC. September 22-23, 2008. www.trb.org/calendar
- **National MQA Peer Exchange and Workshop on Highway Asset Inventory and Data Collection**, Sept. 24-26, 2008, Durham, NC, <http://www.mrutc.org/outreach/MQA>
Sponsored by MRUTC
- **Great Lakes Maritime Research Institute Annual Meeting** Sept. 25-26, 2008, Superior, Wisconsin and Duluth, Minnesota.
- **Wisconsin Freight Rail Day 2008** "Improving the Freight Rail Environment" Sept. 29, 2008. Wausau, Wisconsin.

October

- **Council of Supply Chain Management Professionals Annual Meeting**, October 5-8, 2008. Denver Colorado.
- **CFIRE USDOT Site Visit**, October 16, 2008. Madison
- **Sustainable Supply Chain Management Summit**, October 15-17, 2008, San Francisco, California <http://www.eft.com/green/>
- **Freight Railroads: Best Operating Practices**, October 21-22, 2008. Madison, Wisconsin. See Page 7 for info.

November

- **Railroad Environmental Conference**, November 4-6, 2008, Urbana, Illinois. hagemann@uiuc.edu for info.
- **IANA Intermodal Expo, NITL Annual Meeting, and 26th Transcom**, Nov. 16-18, 2008, Fort Lauderdale, FL
- **Wisconsin Freight Rail Conference**, November 19, 2008, Madison, Wisconsin.

December

- **21st Century Transportation Workforce Summit**, December 8-9, 2008, Madison, WI
Sponsored by CFIRE, Federal Highway Administration (FHWA), Wisconsin Department of Transportation, and AASHTO.

The National Center for Freight and Infrastructure Research and Education (CFIRE) at the University of Wisconsin-Madison is one of ten National University Transportation Centers. The CFIRE consortium includes the University of Wisconsin-Milwaukee, University of Illinois at Chicago, University of Toledo, and University of Wisconsin-Superior. CFIRE's mission is to advance technology, knowledge, and expertise in the planning, design, construction and operation of sustainable freight transportation infrastructure through education, research, outreach, training, and technology transfer. Our vision is to be an internationally recognized authority and resource that creates knowledge, advances understanding, develops technologies, and prepares leaders to meet the nation's need for safe, efficient and sustainable infrastructure for the movement of goods. CFIRE has four signature technical areas of research as noted below.

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