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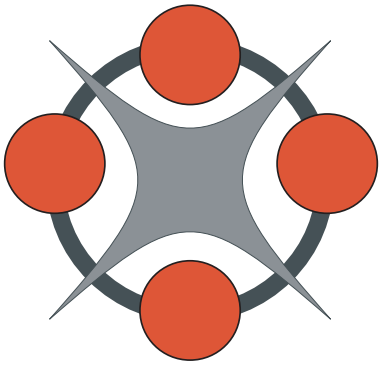

In this issue

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Improving Elderly Mobility in Wisconsin

In the next 25 years, the number of elderly residents in Wisconsin is projected to grow by 90 percent or nearly three quarters of a million people. By 2035, residents over 65 will make up nearly a quarter of the Wisconsin population. The 2003 US DOT National Household Travel Survey found that personal vehicles accounted for more than 90 percent of trips taken by elderly citizens. As such, the overwhelming majority of Wisconsin's elderly residents will be accustomed to driving.

According to the recently published AASHTO report "Connecting Rural and Urban America," in 2008 almost one in eight people over 65 lived in rural areas. This population, which exceeds 9.6 million people nationwide, continues to grow and is increasingly electing to "age in place"—all of which increases the need for transportation services targeted at this population, especially public transit in the form of vans, buses, and carpools as these drivers are forced to stop driving or self-regulate their driving in response to declining abilities and safety concerns.

"We haven't before seen a generation that has become so used to driving—and expecting to be able to do so," says Jason Bittner, CFIRE Deputy Director. "The connection between mobility, the economy, and overall health is of the utmost importance. WisDOT should be commended for tackling this project in such a proactive manner."

The Wisconsin Department of Transportation (WisDOT) currently operates four specialized programs for elderly residents—the Specialized Transportation Assistance Program, Tribal Transportation for Elders, Elderly and Disabled Transportation Capital Assistance Program, and the New Freedom Initiative—together costing nearly $20 million annually. In addition, other state agencies operate programs that provide transportation services used by the elderly: non-emergency medical transportation and specialized medical vehicle expenditures in Medicaid-related programs, client transportation services under the Older Americans Act and Wisconsin Senior Employment program, and transportation for veterans under the Department of Veterans Affairs. Elderly residents also frequently use public transportation services not specifically targeted at a specific age demographic. Public transit services, tribes, and local bodies receive more than $100 million from state and federal agencies.

The Addressing Elderly Mobility Issues in Wisconsin (CFIRE 04-05) project, conducted by project PI Bittner, CFIRE Researcher Bob Gollnik and research assistants Patrick Fuchs and Tim Baird, seeks to help increase the efficiency and improve the performance of WisDOT's elderly transit services. The research team will begin by compiling an inventory of current WisDOT programs and a review of literature concerning these programs; this will be published as a technical memorandum for WisDOT. They will also complete a demographic analysis of the existing and future transportation needs of elderly Wisconsinites. Researchers will then use these interim results as the framework for gathering feedback

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From the Director's Chair

During a visit to Milwaukee on Labor Day, President Obama and US DOT Secretary LaHood unveiled a proposal for $50 billion in transportation infrastructure investments over six years to rebuild 150,000 miles of roads, construct and maintain 4,000 miles of rail, rehabilitate 150 miles of runway, and modernize the air traffic control system. This program would also create an infrastructure bank to administer funds using performance measurement and a competitive project selection process. Improvements to the rail system would improve both existing Amtrak infrastructure and include new high-speed rail programs.

The Obama administration's plan came as a pleasant surprise to transportation industry groups and set off a scramble for more details and speculation on whether the proposed $50 billion is a standalone measure or part of a long-term reauthorization bill. Either way, most of the public debate likely will be about funding, specifically the future of the Highway Trust Fund and how to pay for the new spending, with much less attention focused on policy and vision. There will be tug and pull to find a revenue source for the inter-city passenger rail program and to sort out the details of how the infrastructure bank will work.

The President's announcement is also an important step toward a new transportation policy agenda that focuses on reducing petroleum-based fuel use and greenhouse gas emissions while boosting livability through housing, jobs, and increased transportation options. However, we need to consider how this policy will account for the movement of goods as well as people. Freight plays a crucial part in our nation's economy. We have an opportunity to create a freight policy as part of this program that increases capacity, maintains existing and creates new infrastructure, and creates economic opportunity—while also supporting sustainability and livability.

According to the economic historian Correlli Barnett, as David Brooks writes in his recent column ("The Genteel Nation," *New York Times*, September 9, 2010), we have reached something of a crossroads. "After decades of affluence, the US has drifted away from the hardheaded practical mentality that built the nation's wealth in the first place," writes Brooks. Here at the University of Wisconsin-Madison, both the students in the Transportation Management and Policy program and the researchers at CFIRE are excited about what the future brings for transportation policy and research. I believe new thinking about the role of transportation for contributing to our nation's economic development, livability, and environmental sustainability is the catalyst for our students' seeing today's transportation challenges as career opportunities and as a return to that practical mentality.

This excitement and practicality was evident at our recent Mid-Continent Transportation Research Forum held this August, with the theme *Meeting Tomorrow's Transportation Challenges*. The conference covered transportation economics and planning, sustainability and livability, safety, maintenance and operations, and construction and materials—all the US DOT's strategic goals. Researchers presented topics that were nearly unheard of two years ago, such as how recycling pavements in poor condition can create a new pavement with lower overall life-cycle cost and carbon footprint, and the impacts of the Panama Canal expansion on Midwest grain and agricultural exports.

CFIRE staff, students, and associated researchers made a significant contribution to this year's conference with presentations on collaborative research through cloud computing, freight in megaregions, air quality, benefit-cost analysis of transportation funding, and other freight- and infrastructure-related research projects. Presentations about performance measures for transportation funding and for evaluating multistate projects put the Center at the forefront of this important area of transportation research and policy.

In addition to round-up of activities at the 2010 Mid-Continent Transportation Research Forum, this edition of the CFIRE News contains articles about ongoing and recently completed projects, a listing of newly awarded projects in the Center's fourth grant year, and information about this semester's Transportation Management and Policy colloquium that focuses on livability in transportation.

Teresa Adams, PhD
CFIRE Director

Workforce Transition and Succession Planning Strategies

Current estimates project that up to 50 percent of the transportation workforce will retire within the next ten years. Enrollments in science, mathematics, and engineering programs continue to stagnate, making it increasingly difficult to recruit qualified candidates for transportation-related jobs. At the same time, methods and technologies continue to develop at an ever-increasing pace. These factors combine to present a major challenge to public sector transportation agencies and private contractors as more and more of their existing workforce approaches retirement age. This challenge is all the more acute for a transportation organization, where the retirement or departure of a senior specialist before new employees are hired or fully trained leaves a serious gap in knowledge and experience.

The Best Practices Guidance for Workforce Transition and Succession Planning (CFIRE 04-03) project, led by CFIRE Researcher Ernie Wittwer and CFIRE Director Teresa Adams, aims to help ease the transition at the Wisconsin Department of Transportation (WisDOT) as the current generation of senior transportation specialists retires and younger professionals take up their responsibilities.

"As the baby boom generation retires many organizations are going to face challenges in finding sufficient numbers of trained workers. Those that succeed will find ways of retaining and sharing the knowledge held by retiring workers," said Wittwer.

The research team has evaluated and constructed an inventory of knowledge management strategies applicable to workforce transition and succession planning, and selected a small group of low-tech, low-complexity strategies for further consideration and pilot testing. These strategies have been presented as an interim brief and discussed in a series of small meetings. Researchers are reviewing these strategies with WisDOT staff in order to identify and then eliminate, overcome, or reduce possible challenges to their implementation.

"We're trying to develop and demonstrate low-cost strategies that agencies can use to retain and share institutional knowledge," explained Wittwer.

Now that researchers have identified strategies for pilot testing and addressed implementation challenges, they have begun to conduct a pilot project to implement these strategies in WisDOT's Rail and Harbor Section. This pilot project aims to refine the tools needed for knowledge capture and transition at WisDOT and document them in an easily understandable and accessible form so that they can be replicated in other agency sections.

The results of the pilot test combined with feedback from the pilot participants and the research team's recommendations for further work will be added to the documented series of tools and strategies for knowledge transfer and provided to WisDOT in several formats for further dissemination and use throughout the agency.

For information about this and other CFIRE research projects, visit cfire.wistrans.org.

Elderly Mobility, continued from page 1...

from elderly residents. The research team will use focus groups, individual interviews, and a basic survey at sixteen forums located around Wisconsin to obtain input from elderly residents about their transportation habits, their awareness and use of existing WisDOT services, their mobility concerns, and their concerns about gaps in services. The first forum will take place in the Fall of 2010; the rest will be held in the first half of 2011.

The research team will also document best practices for addressing the challenges of elderly mobility in the US and internationally and provide a detailed assessment of the best practices that might be used in Wisconsin.

"A wide variety of programs exist—the challenge will be to coordinate them and make use of those that can help get the most people to the most places to maintain a sense of livability in later years," said Bittner.

The analysis and policy recommendations of this project will allow WisDOT to improve the operations of specialized and public transit services used by elderly Wisconsinites. The research team also expects to provide an array of policy recommendations in the area of alternative transportation to highlight successful public, non-profit, and private programs from across the country and detail the techniques other states utilize to encourage their development and operations.

For information about this and other CFIRE research projects, visit cfire.wistrans.org.

Contributors

Content and photographs for this edition of the CFIRE News were contributed by Teresa Adams, Jason Bittner, Patrick Fuchs, Bob Gollnik, Jessica Guo, Dadit Hidayat, Steve Wagner, Greg Waidley, and Ernie Wittwer.

2010 Mid-Continent Transportation Research Forum

The 2010 Mid-Continent Transportation Research Forum was held on August 19-20 in Madison, Wisconsin. More than 200 transportation researchers attended the forum, which included more than 60 presentations on a wide array of transportation research topics ranging from regional freight transportation and economic development to rapid construction of bridges. Speakers provided private, local, state, and federal perspectives.

The forum opened with welcoming remarks from CFIRE Director Teresa Adams, WisDOT Research and Communication Services Section Chief Daniel Yeh, and FHWA Wisconsin Division Administrator George Poirier. US DOT Chief Economist Jack Wells and SHRP 2 Implementation Coordinator Jerry DiMaggio each gave keynote addresses during the opening plenary session. Joshua Coran, Director of Operations for Talgo, Inc., gave the lunchtime keynote address. David Kuehn, Progam Manager for the FHWA Exploratory Advanced Research Program, gave the forum's closing address.

This year's forum also included two special features, both of which were available to all forum attendees. Special topic forums focused on how to better implement and disseminate research results in five areas: freight; environment, sustainability, and planning; pavements, materials, and construction management; maintenance and infrastructure asset management; and, safety and traffic operations. The Transportation Engineering and Road Research Alliance (TERRA) hosted an Innovation Day series event that provided alternate programming for attendees on day two of the forum.

The 2010 Mid-Continent Transportation Research Forum was sponsored by CFIRE, the Construction and Materials Support Center, the Wisconsin Traffic Operations and Safety Laboratory, and the Wisconsin Transportation Center in conjunction with the Institute for Transportation, the Great Lakes Maritime Research Institute, Materials in Sustainable Transportation Infrastructure Center, the Transportation Development Association of Wisconsin, the Wisconsin Highway Research Program, the Wisconsin Department of Transportation, and the Iowa Department of Transportation.

Clockwise from upper-left: Teresa Adams, Jack Wells, Jerry DiMaggio, Joshua Coran, George Poirier, and Daniel Yeh.

CFIRE staff and students, in collaboration with the University of Wisconsin–Madison Department of Engineering Professional Development, coordinated the conference. Many WisDOT staff members, as well as staff and faculty from the University of Wisconsin–Madison, served as session moderators.

For more information about the 2010 Mid-Continent Transportation Research Forum, including the final program and proceedings, visit the forum website at mrutc.org/midcon.

Freight Bottlenecks in the MVFC Region

In 2002, 2.5 billion tons of truck-borne freight traveled through the ten states of the Mississippi Valley region. Current estimates indicate that truck traffic will increase by 62 percent nationwide. Regional freight bottlenecks effect the efficiency of the freight network and create additional costs for shippers, carriers, and the general public.

The Assessment of Multimodal Freight Bottlenecks and Alleviation Strategies for the Upper Midwest Region (MVFC 05) project, conducted by CFIRE Associate Director Jessica Guo, aimed to identify high priority freight bottlenecks in the Mississippi Valley region, assess their relative severity, and recommend strategies for alleviating these bottlenecks.

The research team used both quantitative and qualitative data to create an inventory of regional freight bottlenecks and determine where potential future bottlenecks exist. This process produced an inventory of truck bottlenecks on urban and rural freeways and other principal arterials, rail bottlenecks, heavily trafficked ports, and delays in the lock network.

As a result of this project, researchers recommended a number of steps to support the study and analysis of freight bottlenecks in the Mississippi Valley region. The lack of suitable data is a major obstacle for freight bottleneck research on the rail and maritime modes. The researchers recommended the development of freight advisory committees to improve data collection for freight planning efforts, the establishment of federal requirements for reporting and collecting freight modal data, and the creation of a regional data standardization project to support corridor planning.

Researchers also see the need for additional research about the size and type of commodities carried by trucks in order to quantify the types, amounts, and values of goods stuck at bottleneck locations; this would allow for a more precise and refined categorization of the severity of bottlenecks backs on economic impact.

For information about this and other CFIRE research projects, visit cfire.wistrans.org.

MISSISSIPPI VALLEY FREIGHT COALITION

ASCE Distinguished Service Award

CFIRE affiliate researcher and Professor of Civil and Environmental Engineering Tuncer B. Edil has received the Distinguished Service Award from the Wisconsin Section of the American Society of Civil Engineers (ASCE). This award recognizes Edil's leading work as a geotechnical engineer and as an educator.

CFIRE provides funding for four of Dr. Edil's research projects: Assessing Environmental Impacts Associated with Bases and Subgrades Stabilized with Coal Combustion Products (CCPs) (CFIRE Project 01-03); Reconstruction of Railroads and Highways with In-Situ Reclamation Materials (CFIRE Project 02-04); Recycled Unbound Materials (CFIRE Project 03-04), and A Novel Approach to Mitigating Ballast Fouling and Enhancing Rail Freight Capacity (CFIRE Project 04-07).

Professor Edil was presented with this award at the 2010 ASCE Wisconsin Section Fall Annual Conference.

Kohl Aide Visits CFIRE

On August 24, 2010, CFIRE hosted a meeting with Christopher Hickling, legislative assistant for transportation for Senator Herb Kohl (D-WI). CFIRE Deputy Director Jason Bittner gave an overview of the Wisconsin Transportation Center and CFIRE research, outreach, and education efforts. Dr. Michael Corradini provided an overview of the UW Energy Institute and Dr. Tuncer B. Edil talked about the work of the Recycled Materials Resource Center.

The group, which also included COE Associate Dean Deanna Dietrich, CFIRE researcher Bob Gollnik, and CFIRE Communications Coordinator Steve Wagner, discussed upcoming transportation legislation, funding for energy research, truck size and weight regulations, and the use of recycled materials in transportation infrastructure projects.

CFIRE Grant Year 4 Projects

CFIRE awarded funding to the 22 projects for Grant Year 4 (October 1, 2010 to September 30, 2011). These projects focus on a wide range of freight, mobility, and sustainable infrastructure issues.

- CFIRE 04-01: Compass 2009 Data Analysis and Reporting (Teresa Adams, University of Wisconsin–Madison)
- CFIRE 04-02: Great Lakes Maritime Education for K-12 Teachers (Joan Chadde, Michigan Technological University)
- CFIRE 04-03: Best Practices Guidance for Workforce Transition and Succession Planning (Ernie Wittwer & Teresa Adams, University of Wisconsin–Madison)
- CFIRE 04-04: Southeast Wisconsin Freight Access and Mobility Study (Jason Bittner, University of Wisconsin–Madison)
- CFIRE 04-05: Addressing Elderly Mobility Issues in Wisconsin (Jason Bittner, University of Wisconsin–Madison)
- CFIRE 04-06: Impact of Overweight Vehicles (with Heavy Axle Loads) on Bridge Deck Deterioration (Jian Zhao & Habib Tabatabai, University of Wisconsin–Milwaukee)
- CFIRE 04-07: A Novel Approach to Mitigating Ballast Fouling and Enhancing Rail Freight Capacity (Tuncer Edil & James Tinjum, University of Wisconsin–Madison)
- CFIRE 04-08: Feasibility Study for a Freeway Corridor Infrastructure Health Monitoring Instrumentation Testbed (Hani Titi, University of Wisconsin-Milwaukee)
- CFIRE 04-09: Superhydrophobic Engineered Cementitious Composites for Highway Bridge Applications: Phase I (Konstantin Sobolev, Habib Tabatabai & Jin Zhao, University of Wisconsin–Milwaukee; Michael Oliva, University of Wisconsin–Madison)
- CFIRE 04-10: Improving Log Transportation with Data Based Monitoring and Analysis in Northern Wisconsin and Upper Peninsula of Michigan (Richard Stewart, University of Wisconsin–Superior; Pasi Lautala, Michigan Technological University; Libby Ogard)
- CFIRE 04-11: Air Cargo in the Mississippi Valley Freight Coalition Region (Jason Bittner, University of Wisconsin–Madison; Jeffrey Warner & Jeffrey Borowiec, Texas Transportation Institute)
- CFIRE 04-12: Freight Routing for Efficient, Sustainable and Reliable Travel (Tito Hollem-de-Mello, University of Illinois at Chicago; Marco Nie, Northwestern University)
- CFIRE 04-13: A GPS-Based Survey of Freight Movements in the Midwest Region (Kouros Mohammadian & Kazuya Kawamura, University of Illinois at Chicago)
- CFIRE 04-14: Measuring Shippers' Value of Delay on the Freight System (Teresa Adams, University of Wisconsin–Madison; Bruce Wang, Texas Transportation Institute)
- CFIRE 04-15: Developing Safety Risk Index for Truck Preferred Arterial Corridors (Xiao Qin, South Dakota State University; David Noyce, University of Wisconsin–Madison).
- CFIRE 04-16: Development of an Areawide Estimate of Truck Freight Value in the Urban Mobility Report (Jessica Guo, University of Wisconsin–Madison; William Eisele & David Schrank, Texas Transportation Institute)
- CFIRE 04-17: Heavy Vehicle Performance During Recovery from Forced-flow Urban Freeway Conditions Due to Incidents, Work Zones, and Recurring Congestion (Yue Liu & Alan Horowitz, University of Wisconsin–Milwaukee; Alex Drakopoulos, Marquette University)
- CFIRE 04-18: Development of Next Generation Intersection Control (Madhav Chitturi & David Noyce, University of Wisconsin–Madison; Mihalis Golias, University of Memphis)
- CFIRE 04-19: Evaluation of the Effect of Gate Strategies in Drayage Related Emissions (Mei Cao, University of Wisconsin–Superior)
- CFIRE 04-20: Freight From Space: Evaluating Freight Activity and Emissions Trends from Satellite Data (Tracey Holloway, University of Wisconsin–Madison)
- CFIRE 04-22: Does Natural Gas Make Sense for Freight? Environmental and Resource Implications of the "Pickens Plan" (Paul Meier & Tracey Holloway, University of Wisconsin–Madison)
- CFIRE 04-23: Maximizing Freight in Local Food Movements (Bob Gollnik & Michelle Miller, University of Wisconsin–Madison)

Upcoming Events

Freight Transportation Conference
September 14-16, 2010, Indianapolis, Indiana
www.ftrassociates.com

AASHTO Standing Committee on Rail Transportation Annual Meeting
September 19-22, 2010, Jacksonville, Florida
www.transportation.org

2010 APA Upper Midwest Planning Conference
September 22-24, 2010, Mankato, Minnesota
www.plannersconference.com

12th National Conference on Transportation Planning for Small and Medium-Sized Communities
September 22-24, 2010, Williamsburg, Virginia
www.trb.org

ARTBA National Convention
October 3-6, 2010, New York City, New York
www.artba.org

Global Soybean & Grain Transport 2010
October 4-6, 2010, Minneapolis, Minnesota
events.soyatech.com

Wisconsin Motor Carriers Association Annual Convention
October 13-15, 2010, Wisconsin Dells, Wisconsin
www.witruck.org

Transportation Systems for Livable Communities
October 18-19, 2010, Washington, DC
www.trb.org

Indiana Logistics Summit
October 26-27, 2010, Indianapolis, Indiana
www.indianalogistics.com

AASHTO Annual Meeting
October 28-November 3, 2010, Biloxi, Mississippi
www.transportation.org

Commodity Flow Survey Workshop
November 16, 2010, Washington, DC
www.trb.org

Fleet and Asset Management USA 2010
November 17-18, 2010, Atlanta, Georgia
www.telematicsupdate.com/fleet/

7th International Bridge Engineering Conference
December 1-3, 2010, San Antonio, Texas
www.trb.org

90th Transportation Research Board Annual Meeting
January 23-27, 2011, Washington, DC
www.trb.org

Professional Development Courses

For more information about transportation-related professional development courses available through the University of Wisconsin–Madison Department of Engineering Professional Development, visit their website at epd.engr.wisc.edu/courses. Courses marked with an asterisk (*) are eligible for CFIRE scholarships.

Proven Strategies for a Successful Rail Operation*
October 12-13, 2010, Madison, Wisconsin

Engineering Fundamentals of Rail Freight Terminals, Yards, and Intermodal Facilities*
October 14-15, 2010, Madison, Wisconsin

Effective Concrete Bridge Repair
November 8-9, 2010, Madison, Wisconsin

Engineering Fundamentals for Modern Mass Transportation Systems: Light Rail-Rapid Transit-Commuter Rail*
November 15-17, 2010, Madison, Wisconsin

Maintaining Asphalt Pavements
December 6-7, 2010, Las Vegas, Nevada

Highway Bridge Design
December 6-8, 2010, Madison, Wisconsin

Railway Bridge Engineering*
December 9-10, 2010, Madison, Wisconsin

Traffic Engineering Fundamentals
December 14-16, 2010, Madison, Wisconsin

Maintain Asphalt Pavements
January 11-12, 2011, Madison, Wisconsin

Soil Engineering for Roads and Pavements
February 7-8, 2011, Madison, Wisconsin

Pavement Design: New Approaches
February 10-11, 2011, Madison, Wisconsin

About CFIRE

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–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.

Fall 2010 TMP Colloquium

Each Fall and Spring Semester, the Transportation Management and Policy (TMP) program sponsors a topic-driven colloquium for students working on their TMP certificate. These colloquia provide students with the opportunity to gather in a small-group setting and discuss various transportation issues with leaders in the field.

The theme for the Fall 2010 TMP Colloquium is "Delivering Livability: What it Means for Transportation." Students will consider livability and transportation within a broad and varied context, and participate in specific discussions about the US DOT vision of transportation in livable communities, the place of bicycles in a livable community, sustainable transportation infrastructure, climate change and air quality in transportation, community design and land use, ecology and public health, funding for sustainable transportation, and energy systems. Students will also participate in a group project related to the colloquium's theme and given a presentation to communicate the results of their work to other students, staff, and faculty.

The Transportation Management and Policy program is housed in the Nelson Institute for Environmental Studies and administered by the CFIRE Deputy Director Jason Bittner and CFIRE Research and Education Coordinator Greg Waidley. CFIRE Director Teresa Adams serves as program chair.

For more information about this program, visit the Nelson Institute of Environmental Studies.

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