MISSISSIPPI VALLEY FREIGHT COALITION

FREIGHT NOTES

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In this issue

Redeveloping Inland Navigation on the Missouri River

Ernie Perry, MoDOT

Consider that the longest river in the US and the fourth longest river in the world has been nearly devoid of freight traffic for 10 years. Consider that if we are not using the Missouri River to move freight, we are missing the opportunity to move 70 tractor-trailers or 16 railcars on one barge, or take 560 trucks off of I-70 with just one river tow of eight barges. Waterway shipping can move one ton of freight 576 miles on one gallon of fuel, compared to 413 ton-miles for rail and 155 ton-miles for trucking. Given the logistical and environmental benefits of inland navigation, how can we not use the Missouri river as part of the nation's freight system?

In response to the tremendous freight development opportunities with the Missouri River, the Missouri Department of Transportation kicked off the Missouri River Freight Corridor Development project in December 2009 to identify strategies to return freight traffic to the river. Part planning and part market development, the purpose of the Missouri River Freight Corridor Development project is to re-establish the river as a freight corridor with logical market nodes and reliable service that supports a sustainable market and logistics system.

Background. The Missouri river is a significant but untapped freight transportation asset for the state of Missouri and the United States. In 1977, more than 3.3 million tons of freight were shipped on the river. In 2008, less than .35 million tons were shipped. In 1977, commercial shipping (excluding sand and gravel) shipped bulk products worth $950 million. In 2008, the value of shipping had dropped to $525 million; nearly 80 percent of that value comes from project cargo such as power plant components.

From 2001 to 2008, the decreased and unstable water levels caused by river management strategies and continued drought conditions resulted in high-

risk, low-reliability shipping on the river. This prolonged period of instability and risk pushed traditional river freight to other modes—rail and highways—as well as to other river systems. Now, additional pressure from upstream states to re-evaluate the authorized purpose of the Missouri River's management adds even more uncertainty in the marketplace. Upstream states tend to favor water management for recreation and fisheries. And while both climatological factors and man-induced actions caused high-risk operations during this period, current transportation system loads, environmental issues, and the expectations for transportation in the future again point to the Missouri River as a potential transportation solution and economic development engine.

Manitowoc 7000 crane headed up the Missouri river for a Kansas City bridge job.

Current Efforts. The transportation system of today—and tomorrow—will need to address congestion and environmental impact while also serving continued economic development. The nation's waterways can play a significant role in balancing the congestion in the transportation system, provide for community and economic development, and ensure transportation is environmentally sound.

MoDOT Chief Engineer Kevin Keith addresses the Missouri River freight forum.

To kick off the Missouri River development efforts, a Missouri River freight forum and partnering meeting was held in December 2009 at Rocheport, Missouri. This stakeholder and agency forum was not only informative and productive; it laid the groundwork for future collaboration for re-developing commerce on the river. Nearly 90 people attended the all-day forum. Attendees represented the full spectrum of waterways and freight industry sectors, with representatives from barge lines, shippers, commodity groups and producers, co-ops, researchers, economists, developers, as well as state and federal agencies.

Morning sessions at the forum provided agency and industry perspectives on navigation issues. In the afternoon, attendees were divided into three groups to discuss what they had heard during the morning and to identify opportunities and strategies to support river shipping and drive freight to the river.

During the final session of the day the groups summarized their areas of concern and identified potential changes to support river operations.

- Reliability for Navigation. Address navigation issues including channel depth and predictable season.
- Communication and Advocacy. Portray river shipping as a viable option, go on the offensive, and address the loss of historical and institutional knowledge.
- Data. Defend the benefits of river shipping with facts, explain the economic benefits, and market our products using facts and data.
- Infrastructure. Address the need for a freight facility inventory, intermodal connectivity, and specialized solutions (low flow, COB, docks, etc.).
- Environmental. Capitalize on the green benefits of river shipping and address concerns regarding proposed federal environmental regulations and the impact of these regulations.
- Economic. Configure operations on the river so that they make good business sense for all parties.

The most important outcome of the all-day forum was the commitment and momentum that attendees generated to continue forward with efforts to re-establish a freight corridor on the Missouri River.

Next Steps. The Missouri River Freight Corridor Development project will begin with a market and infrastructure assessment. This major research and development effort will look at three areas to re-develop the freight industry on the river. First, the assessment will look at traditional markets and goods movement on the river in order to determine strategies that

A Global Connection

Efforts to return freight to the Missouri River and ensure adequate river flows supports the entire Mississippi Valley and the Midwest's connection the global economy. In times of drought, the Missouri River's contribution to the Mississippi River—the breadbasket of the world—constitutes up to 70 percent of the flow in the Mississippi between St. Louis and the confluence with the Ohio River. This interdependence with the Mississippi River provides global connectivity to the Midwest and Mississippi Valley states. This global connectivity is a transportation asset that we should not take for granted.

encourage freight movement on the river and result in a concept of operations approach for re-establishing market nodes. The assessment will also consider ways to expand to new markets and commodities. Project cargo, containers, and new global trade links with the expansion of the Panama Canal point to new business development possibilities for river shipping. The assessment will also inventory the port and waterway infrastructure along the Missouri River. This information will then be combined with the traditional and new market assessments to develop and prioritize the most productive and cost-effective approaches to re-establishing freight shipping on the river.

Forum attendees also identified the need to raise awareness of the benefits of inland navigation. The cost efficiencies, the green benefits, and the tremendous loads that can be moved all need to be shared within the freight world—and with the general public. Waterways and inland navigation are almost unnoticed components of the transportation system. This needs to change. We must raise awareness in order to garner the infrastructure investment and market attraction needed to re-introduce inland navigation to supply chain and logistics patterns.

Barges headed downstream at Hermann, Missouri.

The Missouri River is not only a historic transportation route, it also holds the possibility for freight transportation in the future. It simply makes too good of sense for the nation's transportation system—and therefore the US economy—not to support and fully develop a natural transportation corridors such as the Missouri River.

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The Future of Interstate Coalitions

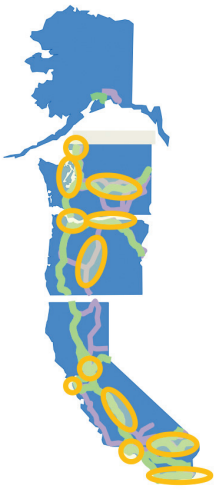
Ernie Wittwer, MVFC Facilitator

At the Transportation Research Board Annual Meeting in January 2010, I had the opportunity to take part in a panel on the future of interstate coalitions. Suzann Rhodes, of Wilbur Smith, moderated the sessions. The panelists included:

- Greg Nadeau, Deputy Administrator of FHWA
- Todd Kohr, Director of Highway Policy for the House Highway and Transit Subcommittee
- Jim Gosnell, Executive Director of the West Coast Corridor Coalition
- Eric Kalivoda, Assistant Secretary of the Louisiana Department of Transportation
- George Schoener, Executive Director of the I-95 Corridor Coalition
- Ernie Wittwer, Facilitator of the Mississippi Valley Freight Coalition

Greg and Todd began the discussion with an overview of the challenges facing the freight moving community and outlined the policy thrusts of the Oberstar Bill. The four panelists from coalitions then spoke about what we were doing and how the draft legislation might help or hinder these efforts.

Ninety minutes was not enough time to do much to clarify the future of coalitions, but the diversity of the existing coalitions and the manner in which the Oberstar Bill deals with coalitions is informative nonetheless.



The West Coast Corridor encompasses I-5 from the Canadian to the Mexican borders, with Alaska appended via sea routes to the north. The coalition includes the four states, many MPOs, major ports, regional planning organizations, and major rail and trucking companies. The West Coast Corridor is unique in one aspect: the planning agencies have been the major drivers of the effort.

Since it's founding in 2001, this corridor has:

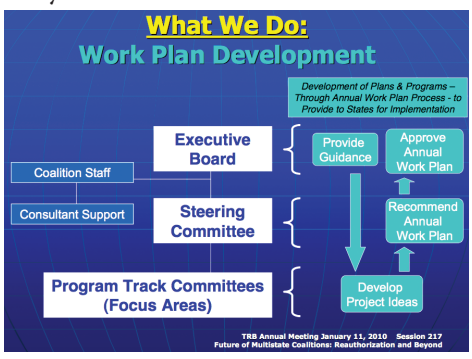
- Identified the bottlenecks across each of the states.
- Applied for a short sea shipping corridor designation.
- Contracted with a consultant to look at trade and transportation in the corridor to better define challenges.
- Embraced and is fostering the ideas of clean and green, looking at best practices in these areas. As part of this

effort, they are sponsoring a conference on climate change and moving ahead with an alternative fuels corridor.

The I-10 corridor stretches from California to Florida across the southern tier of the US. These states have looked at the economic importance of the region, which is huge because it includes three of the largest states in the country. They have also defined the choke points along the corridor and forecasted future congestion. They are currently considering a range of options, including widening, intelligent transportation systems (ITS), and multi-modal solutions to the problems of the corridor.

The I-95 corridor runs from north of the Canadian border through Florida. It is made up of all of the state and provincial agencies along the route, federal agencies, planning agencies, law enforcement, port authorities, and trucking and rail companies. The I-95 corridor is the oldest and most established of the corridors.

The I-5 corridor has the most sophisticated governance structure, with dedicated staffing and consultant support, an executive board, and steering and program committees. They have identified bottlenecks across the region, implemented ITS programs, sought marine corridor designation, and conducted logistics training programs. They have also done three freight system plans for the major regions within the corridor.



The Mississippi Valley Freight Coalition (MVFC) is fundamentally different from the others coalitions because it does not focus solely on a corridor, but rather on an economic region. The MVFC consists of ten state departments of transportation, with staff support from the National Center for Freight and Infrastructure Research and Education (CFIRE) at the University of Wisconsin–Madison. While many planning agencies and private sector companies have taken part in MVFC projects, they are not members in the same manner as in the I-5 or I-95 corridors.

From a regional perspective, the MVFC has done many of the same things as the corridor coalitions: identifying bottlenecks, cataloging truck parking issues, defining commodity flows, developing performance measures, and freight-related training.

With the framework of these four coalitions (though many more exist), it is interesting to review the treatment given corridor coalitions in the Oberstar Bill. This bill has not yet been introduced, but it gives insight into the thinking to the Chair of the House Committee responsible for drafting the next federal transportation bill.

The draft legislation allows the Secretary of the USDOT to designate and make grants to corridor coalitions that are composed of a minimum of the following:

- State departments of transportation.
- Metropolitan planning organizations.
- Each major mode of freight-related transportation operating in the corridor.
- Any major port located in the corridor.
- A representative cross-section of private sector stakeholders, shippers carriers, or freight-related associations.

To be designated, an applicant must submit an application that outlines the major activities of the corridor and defines the purpose and structure of the coalition. The application must also demonstrate that coalition members have the legal and financial capacity and the support to be successful. It must also include a budget and staffing plan.

The Secretary of the USDOT may designate up to ten corridors. Each designation will require the consent of the governor of each state involved in the coalition. In reaching a decision on designations, the Secretary is to consider:

- The importance of the corridor to the national transportation system and economy.
- The economic and environmental consequence of congestion in the corridor.

- Whether improvements to the corridor will have significant national benefits.
- Whether the applying organization has the legal, financial, and political support to be successful.

The Secretary may also make grants to designated corridors to cover operating expenses. The federal share of these grants is 80 percent and the amount of the grants is unknown. Within one year of designation, the applicant will have to complete a plan that is multi-modal in nature, defines the freight assets and challenges of the corridor, and identifies and ranks specific projects. The plan must include project cost estimates and funding sources. It must also define the roles of the entities in the coalition in carrying out the plan, which has to be consistent with state and metropolitan plans.

In short, the Oberstar bill would allow the Secretary to make grants for planning in designated corridors. It would place specific requirements on the planning process, content, and outcomes, but it would not directly provide funding for implementation. It is likely that the national freight program, which the bill would also establish, would fund the implementation of these projects.

For more information, see the Oberstar Bill and the Future of Interstate Coalitions panel presentations.

Local Food Production and Consumption

Ernie Wittwer, MVFC Facilitator

Eating locally produced foods seems like the environmentally right thing to do, but you might be surprised by a recent study done by researchers at Washington State University, Cornell University, and Elanco Animal Health. They conclude that the supermarket production and distribution system actually produces fewer greenhouse gases than a local farmer-market model.

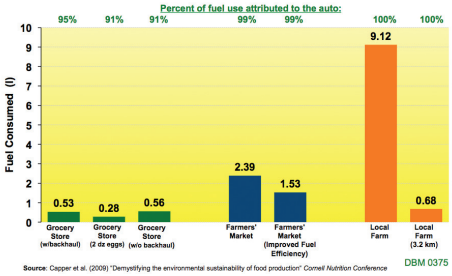
Essential to Assess Impact per Unit of Output Rather Than per Unit of the Production Process

	Vehicle 1	Vehicle 2	
Fuel Burned in 5 hrs:	70 gal	10 gal	Production Process
Distance Traveled:	350 mi (5 mpg)	350 mi (35 mpg)	
Passengers:	50	4	Output
People Miles:	17,500	1,400	
People MPG:	250	140	

The right denominator is the key to understanding this seeming paradox. The researchers used the analogy of the bus that gets five miles per gallon but carries 50 passengers compared to the Mini Cooper that gets 35 miles per gallon but carries four passengers. For a 350-mile trip, the bus gets 250 people miles per gallon, while the Mini gets only 140. The bus uses seven times the amount of fuel while producing more than twelve times the people miles.

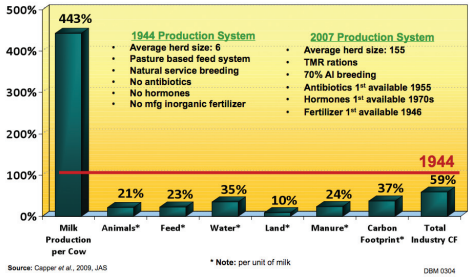
The same concept applies to food. It is best understood with eggs, which are easily measured. If you drive to a local farm, as I do, to get eggs, the capacity of your vehicle is one or two dozen eggs. By comparison the tractor-trailer that transports eggs to the supermarket has a capacity of 23,000 dozens. Therefore, while your trip may be much shorter, and the emissions produced by your car may be much lower, the capacity means that the emissions per dozen eggs is lower when they are delivered by tractor-trailer and purchased in the supermarket.

Fuel Consumed per Dozen Eggs to Move Eggs from Source to Home



This same research compared the emissions from milk production from 1944 to 2009. Most of the greenhouse gases associated with milk production are in the form of methane produced by cows. The modern cow, with modern genetics and drugs, produces as much as four cows did in 1944. Moreover, in terms of work done, the team of horses used for fieldwork in 1944 actually produced more greenhouse gases than a tractor. As such, the modern dairy industry produces significantly less carbon per gallon of milk than the dairy industry did in 1944.

Environmental Impact of Milk Production Has Been Considerably Reduced Since 1944



All of this does not mean that we should buy our food exclusively at the super-market. Concerns over freshness, farm practices, and the treatment of animals might still compel you to buy locally. One critic of the study asked whether anyone asked the chickens which model they liked best? This research does suggest, however, that there's more data to help us make fully informed decisions.

MVFC Project Updates

MVFC Staff

The Mississippi Valley Freight Coalition has four active projects in the current authorization period. Each of these projects is making good progress.

Reauthorization. Existing federal transportation authorizing legislation has a profound impact on the direction of transportation policy and investment; the past authority expired on October 1, 2009. In preparation for that reauthorization, the states of the Mississippi Valley Freight Coalition reviewed freight-related issues and formed conclusions about what policies would best meet the needs of moving freight through the region.

The coalition urged the adoption of policies that would bring planning for all modes closer together, make progress on performance management, recognize the importance of regional transportation organizations, and make the movement of freight more efficient. Investment should be increased and funds should be provided specifically for freight. The revenue stream for freight should be expanded beyond highways to include rail and water, in order to expand capacity and modernize those modes. This broader funding arrangement is in keeping with a vision of a truly interconnected intermodal transportation system.

The recommendations are now in the hands of policy staff from the several states. MVFC and CFIRE will publish the final report from this project in Spring 2010.

Transportation Profiles of Commodity Flows. This project seeks provide information about what products are moving across the region, where they are moving, and why they move as they do. To accomplish this goal without purchasing data, MVFC developed a collaboration of five universities: Universities of Wisconsin–Madison, Wisconsin–Milwaukee, and Wisconsin–Superior, University of Illinois–Chicago, and University of Toledo. Researchers from these five universities developed a four-pronged approach to the issue:

The Freight Analysis Framework (FAF), a tool and data system developed and supported by the Federal Highway Administration, was interrogated to extract relevant information.

The data in the FAF was disaggregated and assigned to routes to provide commodity specific information, which is now being added to the Midwest Freight View. At the MVFC Conference and Annual Meeting in April 2010, researchers from the University of Toledo and the University of Illinois–Chicago will demonstrate how this information can be accessed and manipulated.

Two case studies outline how specific industries move products. The first used the new Chrysler Jeep facility in Toledo to outline how materials and finished products are moved to and from this facility. The second examined the taconite industry of Northern Minnesota that uses Great Lakes shipping to support the steel industry in Michigan, Indiana, Ohio, and Pennsylvania.

Finally, we are developing a micro-simulation of commodity movements in the region. This approach, which uses base information on economic activity and knowledge about the operating procedures of industries to develop probabilities of how products will move, has been used at the small urban area level. It has never been done at the state or multi-state level. Initially, we are focusing on a few commodities as a proof of concept.

Performance Measures for Evaluating Multi-State Projects. This project aims to develop a tool and metrics to assign the benefits of an improvement to the transportation system to specific adjoining states.

We are using Chicago's CREATE project to demonstrate this tool with real-world rail and highway data. To date we have gathered much information on previous effort to define the benefits of projects and much information on CREATE. Over the next months, we will bring that information together to develop a method and apply that method to CREATE.

Outreach Materials to Enhance Freight Investments in the Mississippi Valley Region. This project aims to summarize production and distribution patterns for each of the selected commodity groups so that someone unfamiliar with freight transportation can easily understand how goods move throughout the MVFC region. MVFC member states decied to focus on grain, corn, machinery, wind energy components, retail distribution, and automotive supplies. We aim to produce a series of handouts, presentations, and a website based on data collected, further input from member states, surveys targeted at industry trade groups, and focus groups with the general public.

To date, the project team has reviewed dozens of federal, state, local, and private sources to assemble background data and information for the selected commodity groups. The team has collected nearly all of the data necessary for the agricultural groups for each county throughout the ten-state region and is in the process of creating maps for each. In the coming weeks the team will focus on accurately characterizing freight movements for the agricultural groups, as well as rounding out the machinery portion with data from the economic census, surveys, and querying other potential data sources.

For more information, visit mississippivalleyfreight.org.

13th Annual Freight and Logistics Symposium

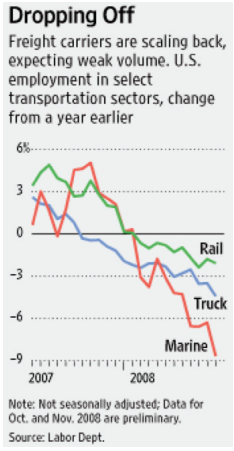
Ernie Wittwer, MVFC Facilitator

The 13th Annual Freight and Logistics Symposium was held in Minneapolis, Minnesota in December 2009. This four-hour event examined the freight moving system after economic recovery. The most thought-provoking speaker was Richard Murphy, Jr., President and CEO of Murphy Warehouse.

Murphy noted that logistics cost every person in this country $4,483 in 2009: $1,403 in warehousing; $2,267 in trucking; $613 for all other modes; and $200 for administration and related costs. He used these data to drive home the significance of logistics and the impact that changes in the system might have.

All modes of freight transport are cutting capacity. Employment in rail has fallen by nearly 2 percent; in trucking by 5 percent; and in marine by nearly 9 percent. As a result, the nearly decade-long truck driver shortage has become a driver surplus—a surplus that will evaporate when the economy recovers.

This reduction in employment is one indication of the change in industry capacity. Every mode has made short-term reductions in capacity. In the case of trucking, parcel, and express shipping, cuts in capacity can be expected to linger into the long term. Equipment has been sold, and firms have gone out of business. Even as the economy recovers, these industries are not expected to have the resources to quickly or easily replace that lost equipment. Constrained trucking capacity is therefore expected to be a long-term impact of the recession.



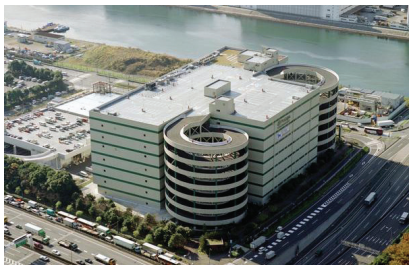
In the case of rail, ocean, and barge shipping, companies have parked equipment wherever they have found space. Their challenge will be to remobilize that equipment when it is needed. As that equipment is remobilized, the rail industry will likely be constrained by track capacity. We can expect the ocean shipping industry to continue to be over capacity. Ship lines ordered many new vessels before the recession, many of them much larger than the existing fleet. New L class 14,000 TEU vessels are being built and delivered. They cannot be sold or scrapped to reduce capacity.

Issues of capacity are subject to changes in demands. The melting of the polar icecap is making the Northwest Passage a reality and vessels used it in 2009. The Northeast Passage from Russia around the pole to the Bering Strait is also likely to be navigable in the near future. These new routes could make the American East Coast and Europe much more accessible by water from Asia. The expansion of the Panama Canal will also make direct water routes to the East Coast more attractive.

Perhaps the more significant change may be the adoption of near sourcing, rather than outsourcing. According to Murphy, corporations have begun to appreciate the importance of landed cost and are no longer so fixated on labor costs. As fuel prices continue to rise—he noted one prediction of $200 per barrel crude by 2013—the cost of transport will assume a much larger place in evaluating landed cost. The result will be more manufacturing in North America. Because of labor costs, Mexico will likely be a beneficiary of near sourcing, but the US will also likely see a significant increase in manufacturing.

Rising fuel costs will also force some companies to rethink distribution systems. Higher prices will force the creation of more distribution centers, allowing shorter hauls to the retailer. Green logistics practices may also contribute to changed distribution networks. Minimizing the carbon footprint of logistics will also require more distribution centers, more load consolidation, and greater lead times for delivery.

Rising land prices will also likely change the look of warehouses. To conserve land, they will be multi-story. Multi-story warehouses are already in use in Asia.



Environmental practices may also change how a warehouse looks. Green roofs can reduce the need for air conditioning and contain rainwater runoff. The large spaces on top of roofs also are ideal for wind and solar energy production. Solar panels or small fan-like windmills add little weight to the roof and could make the buildings at least energy self-sufficient.

All of these factors will force the logistics firms to be flexible and innovative. Murphy, who is a trained landscape architect, suggested that training in design might be a useful thing for logistics people, since it fosters a more creative mind set.

Visit the 13th Annual Freight and Logistics Symposium website for more information about the symposium and all of the presentations.

Mississippi Valley Freight Coalition Conference and Annual Meeting

April 27-29, 2010 • Cincinnati, Ohio

Do you have a vested interest in improving freight efficiency in the MVFC and the surrounding regions? Join us in Cincinnati and meet with representatives from federal, state, and local planning agencies; trucking, railroad, maritime, and logistics professionals; academics and researchers; and others engaged in freight transportation issues in the public and private sectors.

This two and a half day conference includes expert speakers from the freight transportation industry, panel discussions, and workshops.

This conference will also host a peer exchange for state and MPO freight planning practitioners, a freight operations site tour, and a planning session for MVFC member states.

Panel Topics

- AASHTO Reauthorization
- TIGER Grants
- Water & Rail Transportation
- Economic Development

MISSISSIPPI VALLEY FREIGHT COALITION

Workshops

- Corridor Resiliency
- Commodity Profiles
- Project Impact Analysis
- Midwest Freight View

The 2010 MVFC Conference and Annual Meeting will be held at the Millennium Hotel in Cincinnati, Ohio. The hotel is located in the heart of downtown Cincinnati in the midst of hundreds of shops, restaurants, and entertainment venues and near several museums, as well as both Paul Brown Stadium and Great American Ballpark.

For more information about registration and accommodations for the 2010 MVFC Conference and Annual Meeting, as well as the latest conference program, go to mississippivalleyfreight.org.

Register Today for the 2010 MVFC Conference and Annual Meeting

The 2010 MVFC Conference and Annual Meeting is hosted by the Kentucky Transportation Cabinet and the Ohio Department of Transportation.

Mn/DOT I-94 & I-90 Corridors Study

John Tompkins, Mn/DOT

The Minnesota Department of Transportation (Mn/DOT), along with the University of Minnesota's Center for Transportation Studies, conducted a study with travel time data supplied by American Transportation Research Institute (ATRI) to measure freight travel time reliability on the I-94/I-90 corridor from Minnesota through Wisconsin to Illinois. In particular, this study analyzed travel time reliability between the Twin Cities and Chicago. Mn/DOT's Office of Freight & Commercial Vehicle Operations was interested in using freight performance measurement data to study the growing freight activities along these corridors.

This study documents the movement of heavy trucks (mostly class 8 trucks over 20,000 lbs.) traveling along the I-94 and I-90 corridors. Truck location data collected by private data providers from May 2008 to April 2009 was obtained from ATRI. General traffic data along the corridors was also acquired from corresponding state DOTs for comparison.

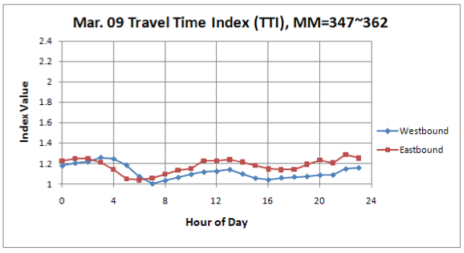


Figure B.6 Travel Time Index between Belvidere and Marengo Toll Plaza, Mar. 09

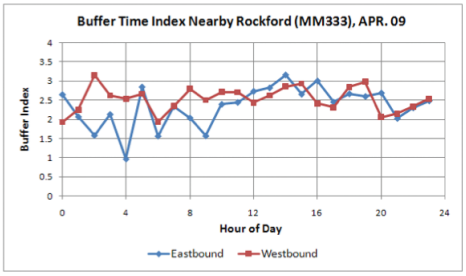


Figure B.25 Buffer Time Index at MM333 nearby Rockford in Apr. 09

Current Travel Time Index and Buffer Time Index data provides important performance indices at the route or link level. However, performance indices based on given origin and destination region, from the user's perspective, will provide more valuable measures to public and private agencies for freight scheduling, planning and operations.

This freight analysis on heavy trucks can help surface freight planners identify freight bottlenecks, truck stop locations, destinations, infrastructure improvement needs, and operational strategies to promote efficient freight movement.

The final report for this study can be found at Mn/DOT Freight Planning.

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Call for Presentations

2010 Mid-Continent Transportation Research Forum

Hosted by the Wisconsin Transportation Center
August 19-20, 2010, Madison, WI

Researchers are encouraged to focus their efforts on projects that demonstrate a significant return on the investment of the sponsoring agencies, specifically state DOTs. Submitters are encouraged to partner and jointly present their material with practitioners. Please confine the abstract to one page, including the following information: Author(s) and affiliations(s), mailing address, email. Authors of accepted abstracts can prepare a complete paper for inclusion in the conference proceedings.

Abstracts for presentations are due March 19, 2010.
Papers are not required, but full papers are due June 18, 2010.
Submit abstracts to Jason Bittner (bittner@engr.wisc.edu or 608-262-7246).

www.mrutc.org/midcon

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Content for this edtion of the MVFC Freight Notes was contributed by Kaushik Bekkem, Bob Gollnik, Ernie Perry, John Tompkins, Steve Wagner, and Ernie Wittwer.

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