Introduction

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Freight in the Upper Midwest States is a very complex issue with many factors that influence the development of public policy. In an effort to crystallize these of these issues and generate thought and discussion, *eleven* white papers were written on important factors that influence freight and public policy. The authors are members of the research team for Phase II of the Upper Midwest Freight Corridor Study. This document is a compilation of those papers. The logic of their selection and order is simple:

Defining the Problem

The Challenge Ahead is a short paper that draws on the findings of the first phase of the Upper Midwest Regional Freight Study to define why a problem exists, or is in the making, that requires some actions on the part of governments in the region. Growing travel, growing freight movements, congestion, and international competition threaten our economic wellbeing.

Trade between China and the Upper Midwest States is a short monograph on one key aspect of growing freight movements, trade with China. It provides insights for those who have a particular interest in the topic.

Finding Solutions

Solutions can be found in highways, rail and water. Since highway is the mode that is most directly influenced by public agencies, five separate papers are dedicated to it:

- In *The Null Alternative in Highway Capacity and Management*, the author describes the future if no actions are taken. More congestion, slower freight movement, continued fragmentation and economic slow-down are the probable conclusion.
- In *Applying Regular Federal Aids to Highway Freight Capacity Issues*, the paper provides an overview of existing federal programs that might be tapped by the region.
- The paper, *Creating Capacity,* reviews the federal dollars that come to the region, how they are used and the possible impacts of diverting them to freight-related projects.
- In *The Role of Tolls in Moving Freight***,** the author explores the current federal rules on the use of tolls, the experience of other states and regions and the potential for using truck-only lanes as toll facilities.
- In *Using Technology*, the authors explore a number of technologies that might be employed to better manage and utilize existing highway capacity.

Rail transportation and many of the issues related to it are covered in *Railroads and Freight in the Future.* The current state of the rail industry, its probable direction and the possible public policy options to influence that direction are covered.

Maritime issues on the Great Lakes are described in *Great Lakes Maritime Transportation System*. The paper provides a historical perspective, current usage, constraints and public policy options related to the continued and possible expansion of the Great Lakes Marine Transportation system in the Midwest freight corridor.

Intermodal issues are covered in the paper *Encouraging Development of Intermodal Freight Facilities*. Intermodal here refers primarily to truck/rail. The paper looks at the possible benefits of moving more freight by rail using trailer or container on rail. It also outlines some of the constraints that may hinder intermodal expansion and some of the policy options that might deal with those constraints.

Finally, a perennial issue in transportation policy in the public sector relates to investing public funds in non-revenue modes or in facilities that are not owned by the public sector. This paper*, Investing in Non-Revenue Modes*, outlines some of the arguments for and against such investments

Individually, these papers provide the essential background on specific aspects of freight in the upper Midwest. Taken together, as they were intended, the papers provide a primer on freight issues and the policy options that must be considered to deal with those issues. The papers form the basis for regional freight agenda, which is the final product of the Phase Two study.

The Challenge Ahead

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Introduction and Summary

The Upper Midwest faces a significant challenge over the next few years. How the states and the nation respond to this challenge will have a major influence on their economic health in the Twenty-First Century. The freeways, railroads and waterways that have moved the product of our farms and factories for the past forty years are at, or nearing, capacity. This is happening at a time when freight ton-miles (metric ton-kilometers) are projected to increase by as much as 80% over the next fifteen years; and when automobile mileage continues to grow at more than one percent per year. While the resulting grid-lock will be costly, wasteful and inconvenient for the commuter and business traveler, it will be devastating for those businesses that are dependant on reliable, inexpensive transportation to move their raw and finished products.

Figure 1: The Upper Midwest

Freight, which is closely correlated to a healthy economy, moves beyond state and national borders. Our traditional post-interstate era approach to freeway capacity expansion has individual states making some modest improvements to small stretches. It also has each state implementing traffic management and traveler information systems independently. Our traditional approach to rail and water-borne freight is to let the market dictate the services offered. All of these traditional approaches will not meet the challenge that we face over the next decade. They will not produce the capacity or the efficiency needed to move the freight—and people—we will have to move to maintain our economic position.

The states of the Upper Midwest (Figure 1), with the cooperation of the Federal Highway Administration and neighboring Canadian Provinces, have undertaken an effort to define a regional agenda for freight. This includes a review of national policies that might benefit the region, a look at state policies that might be better coordinated, and an effort to better develop plans for regional, complimentary traffic information and management systems, particularly as they relate to commercial vehicle operations. Developing this agenda is one first step in meeting the challenge ahead.

Freight and the Economy

Historically, the volume of freight has tracked very closely with Gross Domestic Product (GDP) and employment. Figure 2: Freight and Economic Activity outlines the experience of the last thirty years of freight and economic activity. Ton-miles (metric ton-kilometers) of freight and total employment track very closely (blue and tan lines). Intercity truck mileage and gross domestic product also track very closely (the red and green lines).

The tie of freight and manufacturing is even greater than that of freight and the general economy. This is significant for the Upper Midwest because the region is more dependent on manufacturing than is the balance of the nation. In fact, 27% of the nation's manufacturing jobs are located within the seven states. The region's reliance on manufacturing is also illustrated by the top commodities shipped, as measured by value. All ten of the commodities are manufactured products, starting with motorized and other vehicles and ending with printed materials.

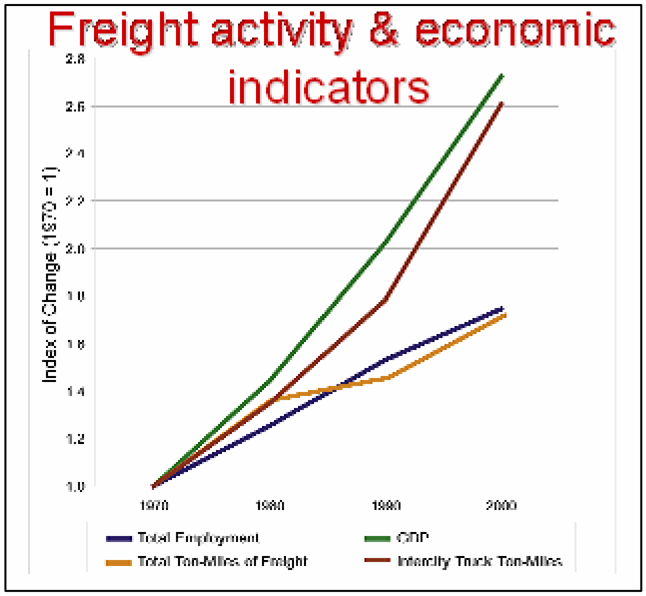

Figure 2: Freight and Economic Activity

Agriculture is also a major force in the regional economy. A look at commodities from the perspective of ton-miles (metric ton-kilometers) illustrates their importance. Five of the ten top ton-mile (metric ton-kilometers) commodities are agricultural, starting with cereal grains and ending with animal feeds.

In total the region has a major role in the national economy. Situated as it is in the center of the country, it connects the coasts and the growing economy of Ontario to the rest of the nation. Overall in the range of 30% of the nation's freight is either destined to or starting from the region. All modes, whether measured by value, tons (metric ton) or ton-miles (metric ton-kilometers), show the same pattern.

The reliable and efficient movement of freight is vital to the economic health of the region. A challenge to that movement is a challenge to our economic wellbeing.

Modal Shares

Freight moves by one mode or another because of one or more of several factors:

- The value of the freight
- The weight of the freight
- The length of the haul
- The dependability of service required

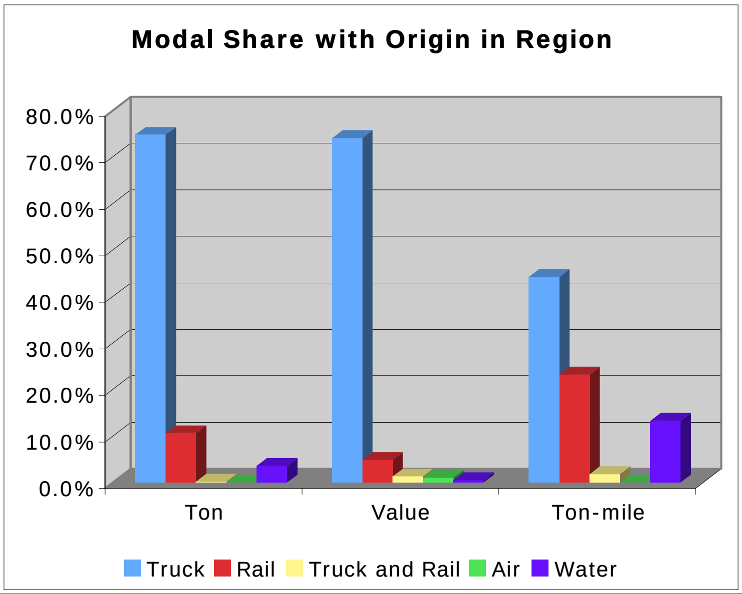

Figure 3: Modal Share with Origin in Region

Typically, high value freight with a high service requirement moves by air or by truck. High weight freight with low service requirements moves by rail or water.

As Figure 3: Modal Share with Origin in Region illustrates, freight in the region is moved predominately by truck. Whether measured by tons (metric ton), value, or ton-miles (metric ton-kilometers), truck is the major mode, carrying 40% or more of the total.

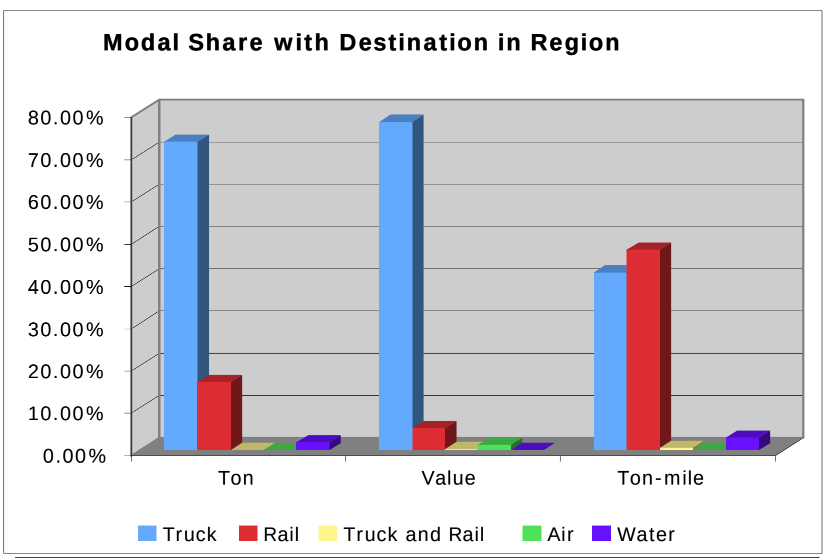

Figure 4: Modal Share with Destination in Region

Perhaps the most striking element in Figure 3: Modal Share with Origin in Region and Figure 4: Modal Share with Destination in Region is the height of the yellow bar representing truck-rail, or intermodal. It now carries a very small proportion of the total freight. The share with an origin in the region is largely the auto industry and largely destined for Texas and California.

The notion of a seamless, truly intermodal, transportation system has gained support in recent years. Unfortunately, current public and private policies make that vision difficult to attain. The rule-of-thumb used by most shippers is that a haul must be at least 500 miles (805 kilometers) in length before it is economically feasible to use rail. Chicago transit times are also a determining factor for intermodal in this region. That transit time is now measured in days. To be attractive for shippers who have higher service standards that measure must be reduced to hours.

Water is the other mode to be pointed out from the above figures. Despite the fact that the Upper Midwest is blessed with the Great Lakes, the Mississippi, Illinois, Missouri and Ohio Rivers, water carries very small amounts of freight.

Projections of Freight

A number of factors combine to increase the amount of freight moving in our economy. First of all, world trade is growing. Figure 5: Freight and Economic Activity provides an overview of the change in imports and exports for the US and its major trading partners for the ten years ending in 2002.

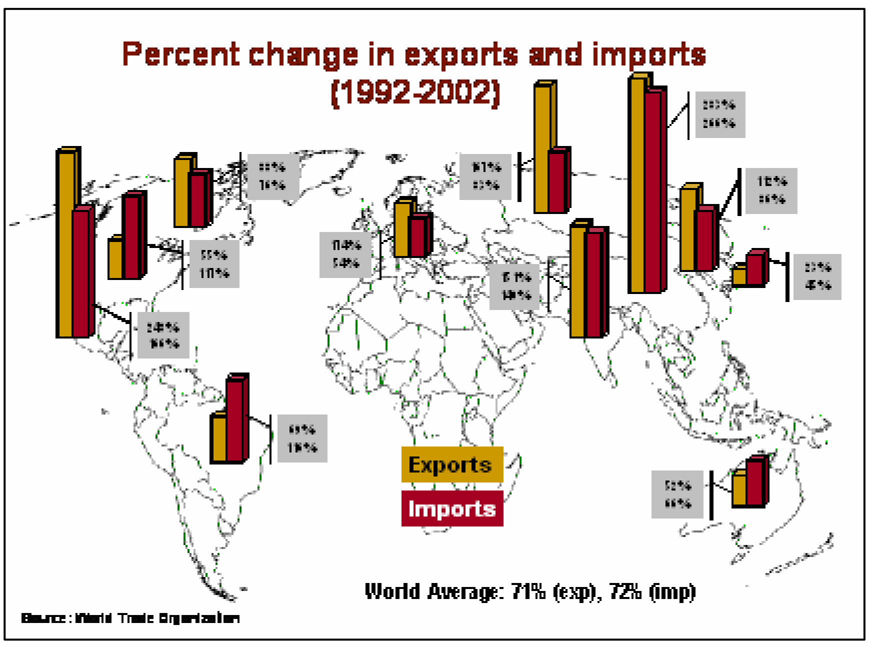

Figure 5: Freight and Economic Activity

For our region the impact of the growing of Ontario economy is significant. Each week thousands of trucks leave Ontario for the states of the Upper Midwest.

Another major change that has taken place is in the nature of manufacturing. Historically, manufacturing was geographically consolidated. The Ford plant at River Rouge in the early Twentieth Century was a good example of such consolidation. Raw materials, in the form of iron ore and coal, entered one end and finished automobiles emerged form the other. Now manufacturing is largely distributed across wide regions. Auto engines might be made in one state, transmissions in another, instrument packages in still another, bodies in a forth, with assembly in a fifth. All of this requires more extensive and complex freight movements.

Finally, the efforts of retailers and manufacturers to minimize warehousing costs by timing shipments, the just-in-time approach, have placed higher service demands on the transportation system. This in turn has forced more freight to the modes that support higher service levels; generally, this means truck.

The Federal Highway Administration and several states in the region have done estimates of future freight. Those estimates suggest growth to 2020 in the range of seventy to eighty percent. As noted earlier, freight movements closely track with economic indicators. Recent projections of those indicators for 2020 show a range of growth from 19% to 78%. If the observed correlation holds, growth in the range of 80% would be on the high range of probability, but growth in excess of 50% would seem likely.

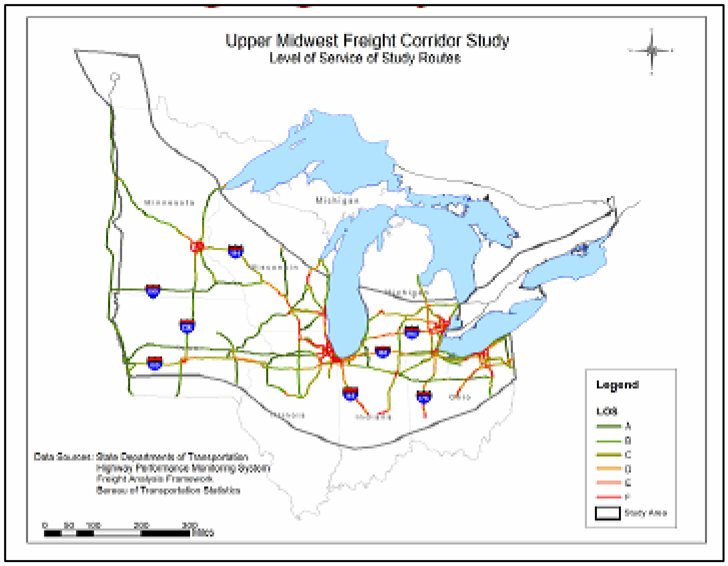

Figure 6: Freeway Capacity

Capacity

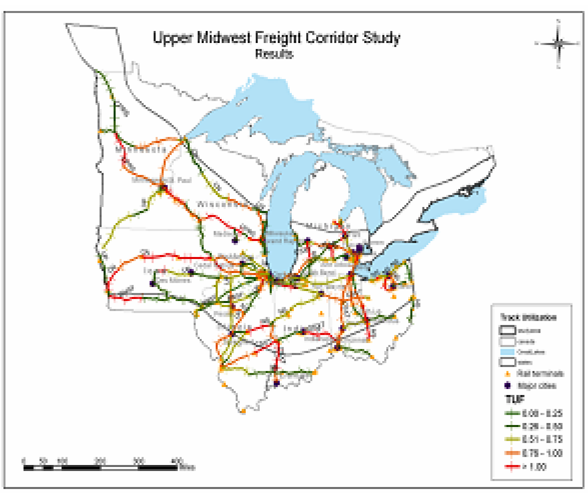

Figure 7: Rail Track Capacity

The first phase of the Upper Midwest study measured the current capacity of the freeways (I-80-90-94), railroads and waterways through the region. All three modes show many links at or beyond capacity.

We would expect red lines, indicating constrained capacity, in the urban areas; but now, as shown in Figure 6, orange and red lines are appearing in the rural portions of the region as well. The rural links that connect the major business centers of the region are nearly all operating at or near capacity. And this is using 2002 and 2003 data.

Figure 7: Rail Track Capacity provides similar information for the class one railroads in the region. Again, much of the system shows capacity constraints. Both this and the highway measures are conservative. They do not consider terminal constraints or operational features, such as interchanges, that can limit capacity.

The inland waterways also show capacity constraints. Since the locks are the primary capacity constraint, it is a good indicator of the operations of the rivers. Delays of up to four hours per transit are common at each lock on the Upper Mississippi and Illinois. Lack of investment and federal statutes and regulations have also effectively limited the capacity of the Great Lakes.

Conclusions

Pulling all the parts together paints a depressing picture. The demand for the movement of freight is growing. Increasingly, service requirements limit the modal choice to truck. Intermodal movements are very small. And capacity is already constrained.

Figure 8 tries to portray data that is largely unknowable. But let us assume that relative modal capacity relates closely to current utilization. The blue, red, and yellow show that approximate distribution for each of the modes. Together, they represent the total freight capacity available in 2000. Then let us assume that capacity changes as well or slightly better in the next 20 years than it did in the previous 20. In the diagram, both rail and truck show slight increases to the year 2020. Previously, we have seen the growth in freight projected to be in the 50 to 80% range. Exactly how much of current capacity is used is unknown, but a conservative guess would place it at about 85% of highway, rail, and water capacity. Plotting all of these lines produces a conceptual deficit in capacity over the next one or two decades. The question is: Will it become real? And the challenge is to avoid it or manage it.

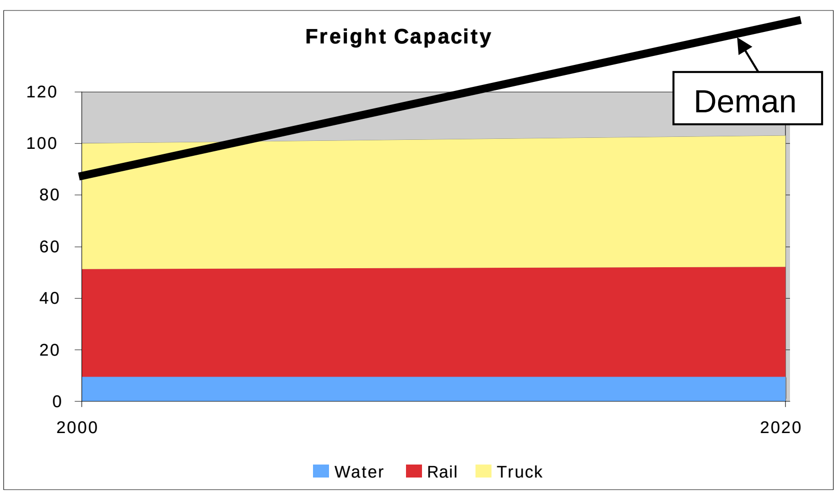

Figure 8: Conceptual Future Capacity

As the region the region considers the future of freight, it will have to evaluate a number of options, many of which will represent major departures from existing policy. Our creativity and courage will determine how well the challenge is met.

The Null Alternative in Highway Capacity and Management

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It has been said that one of the truest forms of insanity is repeating the same actions and expecting a different outcome. In this paper, the writer attempts to envision the most likely outcomes for highway freight transport if current policies and processes are continued in the Upper Midwest. Past experience is the primary guide to the future along with the projections of experts in the field of energy and environment. With this guidance, the outlook is not good. We can expect congestion to get worse, our competitive position to be diminished, fuel consumption to increase, and pollution to be needlessly high.

Capacity

The US has what is often called a system of state-administered, federally assisted highway transportation. Under this system, the federal government provides aids to the states along with broad guidance as to how those aids can be used. Each state makes the decision as to how federal aids and state raised funds will be used to maintain and improve its highway system. In making those decisions, state transportation, and political leaders usually seek to maximize the benefit to their citizens and the impact to their state. They make the best possible decisions for transportation within their borders. Consultation and planning for issues beyond their borders is minimal. Problems that exist within a state are to be dealt with by that state, without regard to the impact that those problems might have for other states. The result for the region and the nation may be less than optimal.

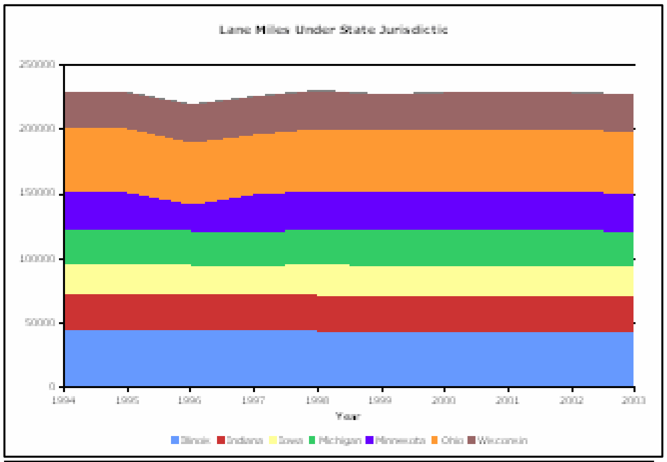

Figure 1: Lane Miles under State Jurisdiction (*1*)

Since the completion of the Interstate Highway System, no mechanism has existed to either facilitate or compel states to develop projects or routes that are consistent and complimentary across state borders. Indeed, since the completion of the Interstate System, much of the emphasis of state departments of transportation has turned to maintaining their highway investments through rehabilitation, reconstruction, or replacement. The result has been a marginal change in highway lane miles. Figure 1 provides an overview of the change in overall highway lane miles, regardless of facility type, under state jurisdiction in the Upper Midwest. For the past ten years, overall mileage has not changed.

The picture for limited access lane miles (kilometers) is somewhat better. Over the past ten years, limited access lane miles (kilometers) have increased, but at a rate much smaller than overall traffic mileage has increased. This is illustrated in Figure 2.

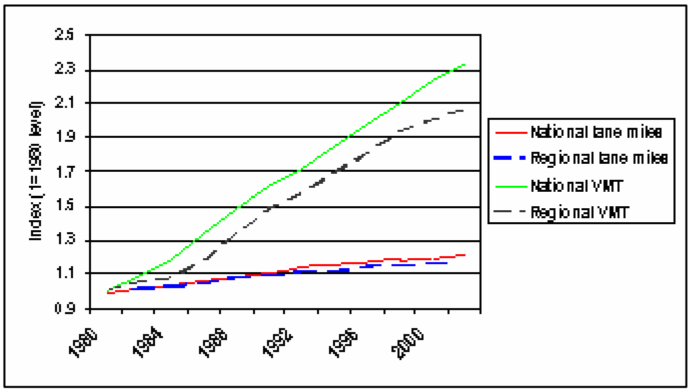

Figure 2: Freeway Lane Miles and changed Vehicle Miles of Travel (*1*)

We might expect this trend to continue into the future under the assumptions of a null alternative. The only major plan currently being implemented within the region that might provide a slight increase is that of the Illinois Tollway Authority. Under this plan, additional lanes will be added to 117 miles (188 kilometers) of toll ways in Northern Illinois and toll collections will be modernized to eliminate many of the currently required stops. Both of these efforts will add to capacity in Northern Illinois, which will benefit much of the region.

We can, therefore, expect under this alternative a very modest increase in highway lane miles (kilometers) through the year 2020. During those same years, even if annual increases continue at what are historically low rates in the range of 1.5%, automobile travel can be expected to increase by about one-third. If freight ton-miles (metric ton-kilometers) increase in those years by 50% or more, as they are now project to do, we can expect nearly twice the number of truck miles (kilometers) on our highways.

Operational Improvements

Freeway
- Transportation management center operations
- Incident management
- Event management
- Ramp metering
- Lane controls
- Managed lanes
- Real-time traveler information
- Electronic toll collection
- Work zone management
- Road weather information systems
- Variable speed limits
- Ramp closures
- Bottleneck removal

Freight
- Vehicle tracking
- Real-time freight information
- Roadside electronic clearance programs

Figure 3: Operational Improvements (*2*)

Technology

Many have argued that highway capacity alone is not the issue. Our focus should be on how well existing capacity is managed and how the factors which contribute to demand are managed. Figure 3, which is an edited version of an FHWA Office of Operations graphic (portions of the original were deleted to focus on operational tools), illustrates this thinking and what options might be considered. Most of the options shown are Intelligent Transportation System (ITS) tools. Indeed, national studies indicate that these tools could contribute to the reduction in congestion in the region. However, the states of the region have not come to agreement on which tools should be implemented, how they should be implemented or what standards should be employed.

The Government Accounting Office, in its review of the FHWA's progress in implementing a national ITS system, concluded that:

> Generally, the promise of ITS as an integrated tool for managing congestion has not yet been met. Although we recognize that [US] DOT cannot always influence ITS investments, limitations of DOT's efforts in goal setting, measuring, and other activities such as evaluating outcomes have reduces DOT's ability to facilitate state and local governments' strategic investment in ITS.

Stated another way, ITS tools may hold promise, but implementation has been slow and inconsistent. Nothing on the horizon would suggest change in the near or mid-term future.

Energy

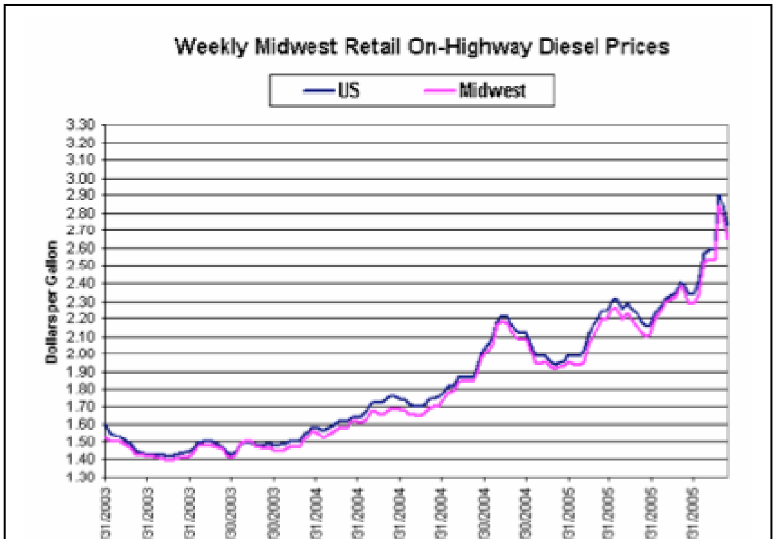

Figure 4: Change in the price of Diesel fuel, 2003 to 2005 (*3*)

If a bright spot can be found in the recent surge in fuel prices, it is in its potential impact on congestion. With fuel prices increasing, people may choose to drive fewer miles (kilometers), canceling trips, or using other modes.

A recent informal poll of fuel retailers reported in the New York Times found that sales were off an average of 10%. This was when gasoline prices were well over $3.00 per gallon ($0.79 per litter). If the data is sound, this may translate to a 10% reduction in miles (kilometers) of travel. More probably it means that the Hummer stayed in the garage and the Prius got more miles (kilometers), or the tank on the Hummer got refilled at near empty rather than at half full.

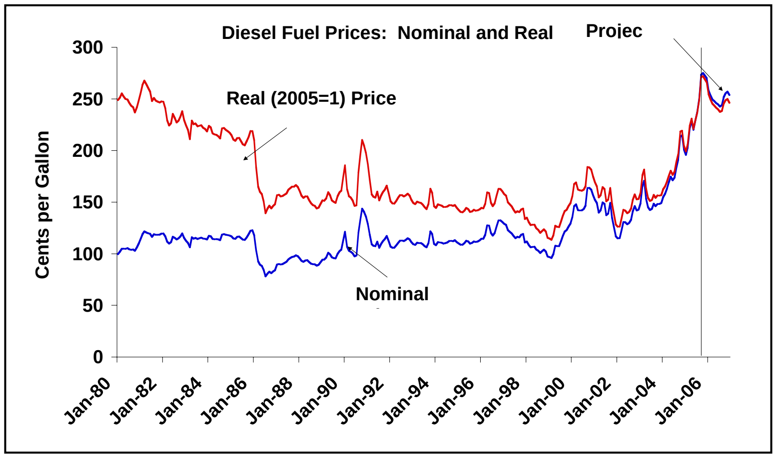

Figure 5: Real versus Nominal: Price of Diesel Fuel (*3*)

We would normally assume that a price jump of about 100%, as illustrated in Figure 4, would bring about significant changes in behavior. In fact, fuel prices are much higher than they have been in the recent past, but they are comparable to historic levels. Figure 5, contains information on the nominal (the-current or actual dollar value) and real (inflation adjusted value) price of diesel over the last 25 years. In 1980, the real price of a gallon (litter) of diesel was $2.50 ($0.66), not much less than it is in 2005.

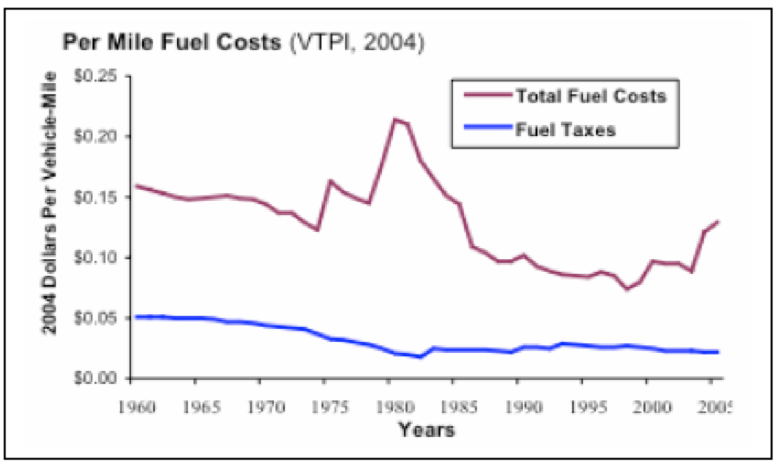

Figure 6: Per Mile Fuel Costs (*4*)

Another way to look at price is how much we spend to drive a mile (kilometer). Again, as shown in Figure 6, we are at historically low levels. The real price of fuel is comparable to what it was in the past and our vehicles—at least automobiles—are much more efficient.

Finally, to understand the consequence of rising fuel prices on travel, we have to consider the economic concept of elasticity. How much does a change in price change consumption? The answers in the literature are all over the map, but Goodwin and Hanly (Transport Review, May 2004) did a review of past empirical studies of the issue and found that a real, continuing, price increase of 10% would cause:

- Traffic to fall by 1% within a year
- Traffic to fall by 3% in about 5 years
- Fuel consumption to fall by 2.5% within a year
- Fuel consumption to fall by 6% in the long run

The reason for the smaller change in traffic than in fuel consumption is the expected increase in the efficiency of fuel use—the Hummer is parked.

All of these changes provide a new base from which growth will occur. At this point it is impossible to tell what the continuing price rise will be. Production has risen and prices are falling. But even a 30% lasting real rise would produce only about a 10% real reduction in traffic in the long run. Therefore, it does not seem reasonable to rely on price change to cure traffic congestion.

Air Quality

The Upper Midwest has a number of areas that are classified by the Environmental Protection Agency as non-attainment that is they have dirtier air than the federal standards deem to be healthy. Figure 7 is a map showing non-attainment and maintenance counties in the US.

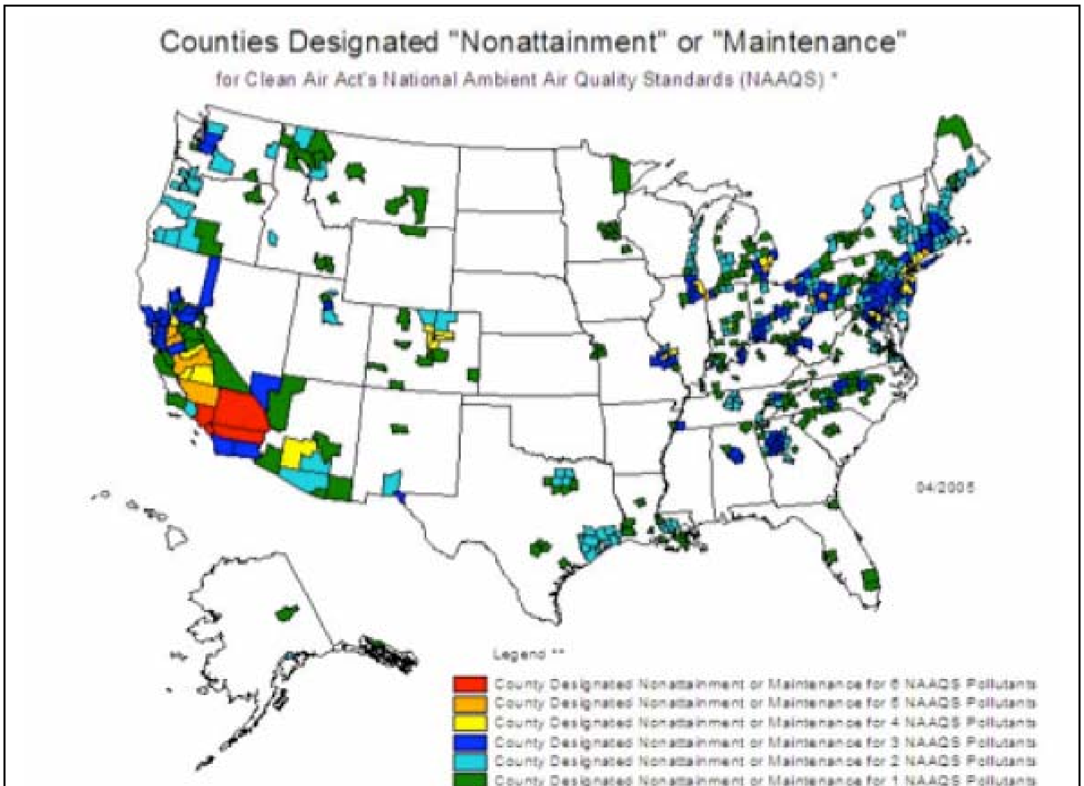

Figure 7: Air Quality Non-attainment or Maintenance Areas (*5*)

From the perspective of freight, the major pollutants are nitrous oxides (NOx) and particulates, the product of diesel engines. Chicago, Detroit, Indianapolis, St. Louis, and much of the Ohio River Valley are non-compliant with particulate standards. NOx is one of the gases that produce ozone, so it is problematic in many parts of the region.

The EPA did a study of the impacts of freight on air quality in several urban areas around the country, including Chicago and Detroit. Figure 8, which outlines the proportion of road pollutants attributed to trucks, is from that study.

Comparison of Heavy-Duty Truck Emissions in the Six Study Regions, 2002

Region	NOx (tons)	as % of total on-road NOx	VOC (tons)	as % of total on-road VOC	PM-10 (tons)	as % of total on-road PM-10	CO (tons)	as % of total on-road CO
Baltimore	29,081	49.7%	1,416	5.8%	734	N/A	13,232	3.9%
Chicago	96,291	57.4%	6,500	10.9%	**2,641**	**62.6%**	58,330	6.0%
Dallas-Ft. Worth	53,718	50.4%	2,174	4.1%	884	38.3%	20,229	2.3%
Detroit	**98,195**	**62.8%**	5,374	8.8%	2,382	N/A	62,805	5.6%
Houston	64,590	54.7%	2,408	5.6%	1,256	47.7%	20,117	2.7%
Los Angeles	130,341	49.4%	**14,839**	**11.0%**	2,210	31.3%	**121,776**	**9.1%**

Figure 8: Pollutants Attributed to Trucks (*6*)

Note that in Chicago and Detroit, 57% and 63%, respectively of the road-derive NOx is attributed to trucks. In Chicago, 63% of the road-derive particulates are attributed to trucks. In both cities, about 6% of the on-road carbon monoxide, a greenhouse gas, comes from trucks. So trucks are major contributors to unhealthy air.

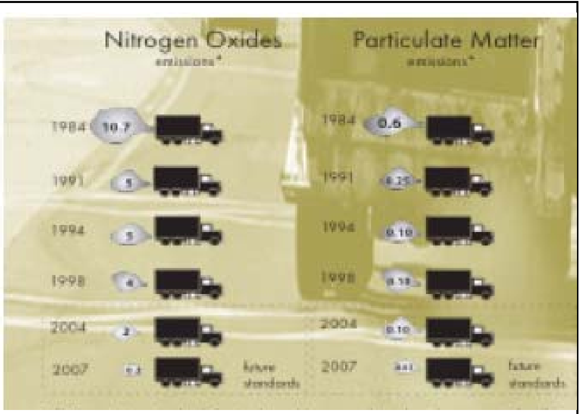

Figure 9: Truck Pollutants (*7*)

Logically we can expect more trucks operating in more congested conditions to be a greater source of pollution. Fortunately, better engines and cleaner fuels are reducing the pollution caused by trucks. Figure 9 graphically illustrates the past and projected change in pollution by trucks. By 2007, emissions from individual trucks will be only a small fraction of what they were in the past. But more trucks, operating under less favorable conditions will pollute more than they might under better operating conditions.

We have all experienced the problem of exhaust when we were driving in a cue during rush hour or at a highway crash or work zone. The amount of exhaust in those situations is not only a function of the number of cars and trucks. It is a function of how they are operating. An engine operates most efficiently from both the perspective of fuel consumption and of emissions at slightly below highway speeds. At low speeds and at very high speeds, engines pollute much more than they do at moderate speeds. Congestion will cause more pollution.

Greenhouse gases are another type of pollutants. These gases, primarily CO and CO2 from transportation, contribute to global warming. According to the Department of Energy and the EPA, the US contributes 23% of the total World emissions of carbon. Thirty-two percent of the US total comes from transportation. (Note this is 1995 data. Current allocation will be somewhat different.) As shown in Figure 10, freight trucks account for 16% of the transportation emissions, which is larger than what is the case in the large cities, shown in Figure 8. Water and rail transport account for another 5%.

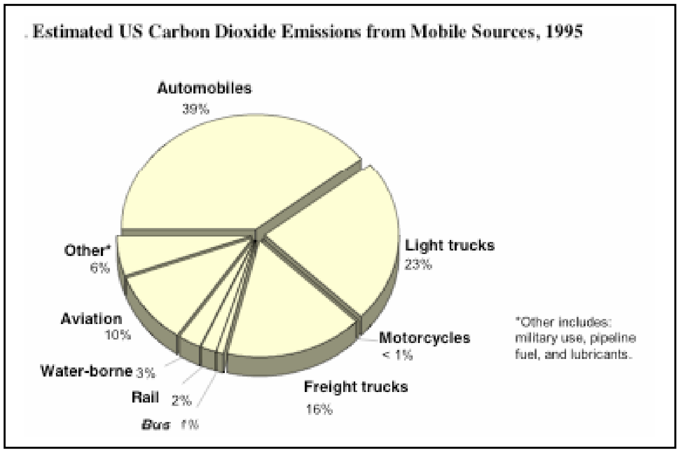

Figure 10: US Carbon Dioxide Emissions from Mobile Sources

Engines and fuels are getting cleaner, particularly as it relates to the precursors of ozone. But progress has been slower in reducing greenhouse gases. More vehicles and more congestion will serve to frustrate—not totally cancel--the progress of technology in meeting this challenge. We may not have as much gunk in the air as we might have had, but we will have more than we want to have.

Conclusions

Using the past to glimpse the future is somewhat risky, but it's the best tool we have. The region has not kept pace in providing highway capacity to meet demand in the past. Under the null alternative, we have little reason to expect a change in the future. The region has not implemented (or even agreed on what should be implemented) technologies to manage congestion. Following existing policies and processes, there is little reason to expect a change in the future.

Therefore, as truck and auto volumes of travel increase, it is reasonable to assume congestion will also increase.

Some have argued that increased fuel prices will act as an unintended congestion pricing mechanism, delaying or reducing congestion. The real price of fuel, which is within historic bounds, and the continuing decline in the energy cost of driving do not support this position, nor does the little that we know about the price elasticity of fuel. Therefore, we should expect congestion.

Motor vehicles emit toxins into the air. Nitrous oxides, and volatile organic compounds cause ozone and carbons cause global warming. Technology has reduced the amounts emitted by autos and trucks and is expected to continue to produce cleaner vehicles into the future. Unfortunately, more vehicles operating under more congested conditions will tend to offset much of the advances to technology.

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Existing Federal Programs

SAFETEA-LU includes a variety of programs and tools that could assist in creating additional capacity for freight in the Upper Midwest. A regional coalition must become familiar with funding, project approval processes, and the impact of guarantee dollars on the ability of our transportation system to meet the region's freight shipping demands.

National Corridor Infrastructure Improvement (Corridors) Program (§1302)

Capacity improvement and congestion management for the Interstate Highway System create some of the greatest opportunities for managing highway solutions that facilitate and improve the flow of freight along the nation's highways. The Corridors Program allocates funds to the states to make improvements in nationally significant corridors that are likely to promote economic growth and foster trade. States must apply to the federal government in a competitive bid process to be awarded funds through this program. Funding levels for the Corridors Program are appropriated from the Highway Trust Fund. Authorized funding levels in SAFETEA-LU are as follows:

- $194,800,000 for fiscal year 2005;
- $389,600,000 for fiscal year 2006;
- $487,000,000 for fiscal year 2007;
- $487,000,000 for fiscal year 2008, and;
- $389,600,000 for fiscal year 2009.

Project approval process

Under the Corridors Program, projects on the National Highway (Interstate) System that promote national and international trade and economic growth, and can be completed within a five-year period are given priority for funding. Selection factors considered in the legislation during the approval process include:

- The extent to which the project corridor provides a link between two existing segments of the Interstate System;
- The extent to which a project will facilitate major multi-state or regional mobility and economic growth;
- The extent to which commercial vehicle traffic in the project area is projected to increase;
- The volume of international freight traffic in the corridor;
- The extent to which the improvement will decrease congestion;
- The anticipated reduction in travel time through the freight corridor as a result of the project;
- The value of cargo moving through the area
- The extent to which federal funds are leveraged by the project.

But projects funded through this program are earmarked in SAFETEA-LU. Five projects of particular interest to Upper Midwest Freight stakeholders are:

- IL Construction of the U.S. I-80 to I-88 North-South Connector in Illinois - $152,000,000
- IL Construction of Route 34 Interchange and improvements in Illinois – $55,000,000
- IN I-80 Improvements - $10,000,000
- MN Falls-to-Falls Corridor - $50,000,000
- WI Construction and reconstruction of the U.S. Highway 41 corridor between Milwaukee and Green Bay, Wisconsin - $30,000,000

Many of the criteria noted in the project approval process portion of this discussion are met by the challenges and opportunities currently manifest in the Upper Midwest, making the region a good candidate for funding through the Corridors program Particularly, provisions to encourage capacity building in areas with significant international trade should draw the attention of states along the Canadian border. A regional freight coalition's proposed projects would be attractive under the criteria for the promotion of multi-state regional economic growth.

Projects of National and Regional Significance (§1301)

In a manner similar to the Corridors Program, this program provides funds for projects that include efforts to improve freight mobility and thus provide regional and national economic benefits. To achieve this goal, SAFETEA-LU establishes a program to award grant money to states, on a competitive basis, to address the need to complete transportation projects that result in economic benefits and improve the safe and secure flow of goods, people, and services along the National Highway System.

Project approval process

Eligible projects under this section of SAFETEA-LU include those that will incur costs expected to equal or exceed either $500,000,000, or seventy-five percent of federal highway funds apportioned to the state in the most recent fiscal year for the state in which the project is located. This program provides funding for any surface transportation project that is eligible for federal assistance and includes freight rail as well as highway freight transportation projects.

Projects are awarded in a competitive bid process; however, special consideration is given to proposals that effectively do the following:

- Leverage federal investment by incorporating non-federal funding into the budget, including monies from public/private partnerships.

- Use new technologies, including ITS.
- Help protect the environment.

In addition, funding is available over the life of a project, beginning with preliminary engineering through construction.

Projects funded through this program are already earmarked. Five projects designated through SAFETEA-LU are of particular interest to Upper Midwest Freight stakeholders:

- IL Construction of O'Hare, Bypass/Elgin O'Hare Extension - $140,000,000
- IL Mississippi River Bridge - $150,000,000
- MI Planning, design, and construction of a new American border plaza at the Blue Water Bridge in or near Port Huron, MI - $20,000,000
- VA, WV, OH Heartland Corridor Project including multiple intermodal facility improvements - $90,000,000
- WI Reconstruction of the Marquette Interchange, Milwaukee, WI - $30,000,000

As the above list displays, states in the Upper Midwest have already begun to take advantage of this program. Regional stakeholders should continue to take advantage of this program, particularly since it focuses on capacity building and congestion reduction with an eye towards economic development and freight movement.

Truck Parking Facilities (§1305)

This program addresses the shortage of long-term parking for commercial motor vehicles (trucks) on the nation's National Highway System. This program seeks to construct new parking facilities and to increase available parking at existing sites, including highway rest stops, park and rides, or other similar facilities. Funding for the Parking Facilities program comes from the Highway Trust Fund. SAFETEA-LU earmarks $6,250,000 per year from 2006 through 2009 for this program.

Increasing available truck parking on the National Highway System will benefit capacity by providing truck parking spaces for the increasing numbers of trucks that will be entering the highways in the Upper Midwest. These funds are not yet earmarked, which provides an opportunity for Upper Midwest freight stakeholders to take advantage of this program.

Freight Intermodal Distribution Pilot Grant Program (§1306)

The purpose of the Freight Intermodal Distribution Pilot Grant Program (FIDPG) is to facilitate and support intermodal freight transportation initiatives at the state and local levels to relieve congestion and improve safety and to provide capital funding to address infrastructure and freight distribution needs, primarily at inland ports and intermodal freight facilities. SAFETEA-LU sets funding levels for the FIDPG program at $6,000,000 for each fiscal year from 2006 through 2009.

Project approval process

To receive monies through this program, states must submit a grant application to the Secretary of Transportation. Priority is given to funding projects which:

- Reduce congestion into and out of international ports in the U.S.
- Demonstrate ways to increase the likelihood that freight container movements involve freight containers carrying goods, and;
- Establish or expand intermodal facilities which encourage development of inland freight distribution centers.

By reducing congestion, increasing the number of containers actually carrying freight, and improving or constructing new distribution centers, the FIDPG program may facilitate the improvement of freight-carrying capacity for highway-system freight as well as intermodal freight. These funds are not yet earmarked, which provides an opportunity for regional freight stakeholders to take advantage of this program.

Coordinated Border Infrastructure Program (§3203)

The coordinated boarder infrastructure program seeks to distribute funds to border states to improve the mobility of freight and motor vehicles across the border between the United states and Mexico and the United states and Canada. Funding from this program can be applied to a number of eligible uses, including:

- Improvements to existing transportation and support infrastructure;
- Construction of highways and related safety facilities;
- Operational improvements (electronic data interchange, telecommunications, etc.) that expedite freight movements;
- Modification to regulatory procedures that expedite cross-border freight movement, and;
- International coordination of freight movements pertaining to cross-border movement of freight and motor vehicles.

Funding Levels and Eligibility Criteria

Funding for this program is distributed by formula. The funding breakdown by year is as follows:

- $123,000,000 for fiscal year 2005;
- $145,000,000 for fiscal year 2006;
- $165,000,000 for fiscal year 2007;
- $190,000,000 for fiscal year 2008, and;
- $210,000,000 for fiscal year 2009.

Projects funded through this program are already earmarked. Two projects, one in Michigan and one in Minnesota are of particular interest to Upper Midwest Freight stakeholders. The funding levels are as follows:

- Michigan $20,871,373
- Minnesota $3,749,666

Funding is available for projects in Canada or Mexico, if a U.S. border state proposes a project to facilitate cross-border trade. Facilities may be constructed in these countries if the appropriate local government in Canada or Mexico can guarantee that the facility will be constructed using equivalent U.S. construction standards and that the new infrastructure will be properly maintained to facilitate trade. States in the Upper Midwest sharing borders with Canada can capitalize on this program to improve efficiency and infrastructure at their border crossings.

Freight Planning and Capacity Building Program (§5204)

This new program funds research, training, and education to support freight transportation planning. Funding for this program comes through the Training and Education funds and is set at $875,000 a year from 2006 to 2009.

Research targeted towards strategic planning for infrastructure improvements, congestion mitigation needs, and technologies to enhance freight movements across the country would be of particular interest and benefit to a regional freight coalition in the Upper Midwest. This program could potentially interact with the National Cooperative Freight Transportation Research Program (§5209). The development of a national research agenda for freight offers numerous opportunities to develop recommendations for capacity-building programs.

National Cooperative Freight Transportation Research Program (§5209)

Could potentially interact with the Freight Planning and Capacity Building Program. An advisory committee chosen to represent the different stakeholders in freight transport will be selected to develop a national research agenda for this program. The advisory committee should work cooperatively with researchers involved in the Freight Planning and Capacity Program to promote programs that aid in creating capacity for the freight industry. This program is funded at $3.75 million per year for 2006-2009. The funding comes from Surface Transportation Research funds.

Impact of Formula Funding

The question of the impact of formula funding on the states of the Upper Midwest is a complicated one that is not easy to answer. In short, formula funding refers to the formula the federal government uses to determine the amount of money from the federal gas tax it returns to the states. This tax, collected in the individual states at the pump, funds the Highway Trust Fund. According to FHWA staff, a full analysis of the impact of this money on freight programs has not yet been completed but eligibility relative to freight has not changed from TEA-21. However, FHWA has issued a summary of how these monies will be distributed. Selections from this summary are included here to help in considering funding levels and options for building freight capacity. For a more detailed discussion of funding through SAFETEA-LU, please visit http://www.fhwa.dot.gov/safetealu/summary.htm.

Equity Bonus – Federal-aid highway funds for individual programs are apportioned by formula using factors relevant to the particular program. After those computations are made, additional funds are distributed to ensure that each state receives an amount based on equity considerations. In SAFETEA-LU, this provision is called the Equity Bonus (replaces TEA-21's Minimum Guarantee) and ensures that each state will be guaranteed a minimum rate of return on its share of contributions to the Highway Account of the Highway Trust Fund, and a minimum increase relative to the average dollar amount of apportionments under TEA-21, and that certain states will maintain the share of total apportionments they each received during TEA-21. An open-ended authorization is provided, ensuring that there will be sufficient funds to meet the objectives of the Equity Bonus.

Relative Rate of Return – Each state's share of apportionments from the Interstate Maintenance, National Highway System, Bridge, Surface Transportation, Highway Safety Improvement, Congestion Mitigation and Air Quality Improvement, Metropolitan Planning, Appalachian Development Highway System, Recreational Trails, Safe Routes to School, Rail-Highway Grade Crossing, Coordinated Border Infrastructure programs, the Equity Bonus itself, along with High Priority Projects will be at least a specified percentage of that state's share of contributions to the Highway Account of the Highway Trust Fund. The specified percentage, referred to as a *relative rate of return*, is 90.5% for 2005 and 2006, 91.5% for 2007, and 92% for 2008 and 2009.

Concluding Thoughts

Table 1, below, shows the range of federal programs available through SAFETEA-LU. From the perspective of creating new capacity for freight, there are a wealth of possibilities. For example, Projects of National and Regional Significance and the Corridors Program, although fully earmarked in the legislation, include projects that promise to improve capacity for freight movement in the Upper Midwest. There is clearly a fair amount of funding available that could be used to enhance the region's freight capacity. However, the manner in which this funding is currently being used focuses on the efforts of individual states. While projects constructed by individual states may improve infrastructure, they are unlikely to address system-wide deficiencies or capitalize on opportunities across the region. Projects proposed by a multi-state coalition, such as a regional coalition of the Upper Midwest Freight stakeholders, hold greater potential for funding projects that not only get constructed, but contribute to enhancing freight movement at a regional level.

Table 1: Freight Capacity-Building Programs in SAFETEA-LU

Program	Section	Infrastructure	Congestion Mitigation	ITS/Data Management	Highway	Multi-modal	International	Research
Projects of National and Regional Significance	§1301	X			X			
Corridors Program	§1302	X	X		X			
Coordinated Border Infrastructure Program	§3203	X	X	X		X	X	
Freight Intermodal Distribution Pilot Grant Program	§1306	X	X	X		X		
Interstate Discretionary	§1113	X	X	X	X	X		
Bridge Discretionary	§1114	X	X	X	X	X		
Truck Parking Facilities	§1305	X	X		X			
Freight Planning and Capacity Building	§5204							X
National Cooperative Freight Transportation Research	§5209							X

Reference

1. Adapted from FHWA SAFETEA-LU summary:
http://www.fhwa.dot.gov/safetealu/summary.htm