Teresa M. Adams Bio

Teresa M. Adams, Ph.D., is a Professor of Transportation Engineering and City Planning in the Department of Civil and Environmental Engineering at the University of Wisconsin-Madison. She is Director of the National Center for Freight and Infrastructure Research and Education and Director of the Midwest Regional University Transportation Center, both funded by the USDOT.

Dr. Adams has 17 years experience working with state and federal transportation agencies on freight transportation and infrastructure issues. She has conducted research for the seven states of the Upper Midwest Freight Corridor Coalition led by the Ohio Department of Transportation and is the principal investigator for the Mississippi Valley Freight Coalition, a ten-state coalition expanding on the Upper Midwest group to include Missouri, Kansas, and Kentucky.

Dr. Adams assisted the Wisconsin Department of Transportation in scoping an integrated enterprise application to manage the agency's oversize / overweight permit processing and built a geographic information system for automated routing and evaluation of bridge restrictions. She is currently coordinating the development of a guide for commercial truck drivers in Wisconsin and co-teaching the University of Wisconsin's Practicum on Transportation Management and Policy course focused on Freight Planning for Metropolitan Planning Organizations.

The mission of the National Center for Freight and Infrastructure Research and Education at the University of Wisconsin 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. The Center's focus is *Sustainable Freight Transportation Infrastructure and Systems.* CFIRE conducts research, sponsors training opportunities, and develops academic coursework and/or continuing education programs in four signature technical areas: Design, Materials, and Construction Processes for Highway, Harbor, and Rail Infrastructure; Planning, Multimodal Systems Optimization and Multi-hazard Preparedness & Mitigation; Traffic Operations and Safety; and Energy and Environment. Additionally, the Center sponsors research on performance measurements, policy, economic effects, and emergency management across these specialties.

Dr. Adams is a member of the Board of Directors for the American Road and Transportation Builders Association, Research and Education Division and a member of the Committee on Intermodal Freight Transport for the Transportation Research Board. She is also Chair of the Transportation Management and Policy graduate certificate program and a faculty affiliate of the Gaylord Nelson Institute for Environmental Studies.

Presentation to National Surface Transportation Policy and Revenue Study Commission

Freight User Perspectives and Solutions

Teresa Adams Ph.D.
Director, National Center for Freight and Infrastructure Research and Education (CFIRE)

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Commission Testimony

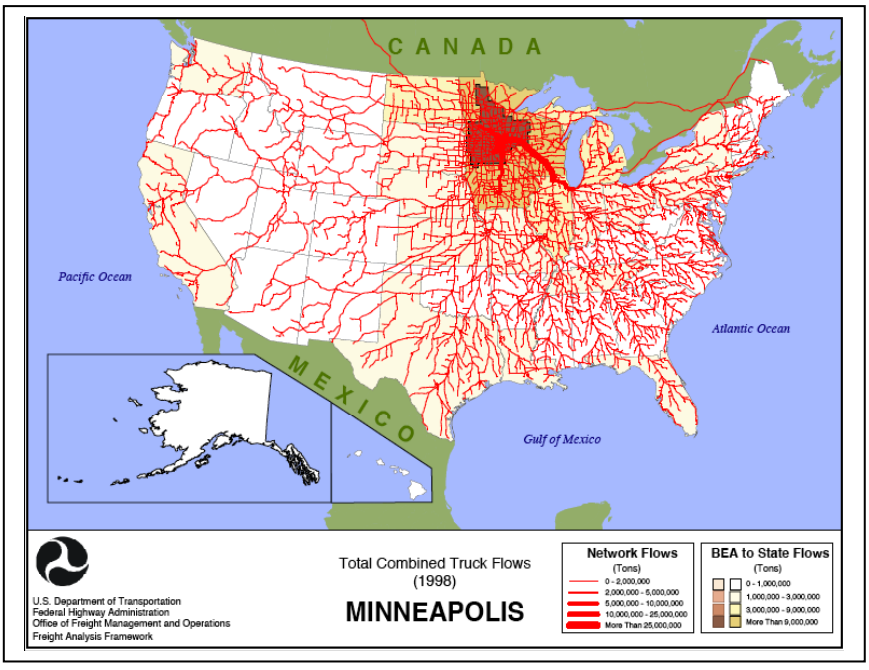
Thank you for allowing me to take part in this important discussion. My name is Teresa Adams. I am the Director of the National Center for Freight and Infrastructure Research and Education at the University of Wisconsin.

The Center has been working with the states of this region on issues related to freight for the past four years. This effort was recently formalized as the Mississippi Valley Freight Coalition. In this Coalition, the ten states of the region agreed to cooperate to find ways of improving the flow of freight through the region. The Center serves as facilitator for and partially funds this coalition effort.

Through this effort we have learned the serious implications of congestions on our freeways and major rail corridors. As freight and passenger volumes continue to grow, congestion will get worse, and performance will deteriorate even further. It has become easy to see that we do not have a single transportation system. What we have are several systems that are not adequately integrated across modes or jurisdictions. Good planning, engineering and lots of money will help, but if we desire to maximize utilization as a means to relieve congestion, we must deal with the institutional issues that cause us to have several systems.

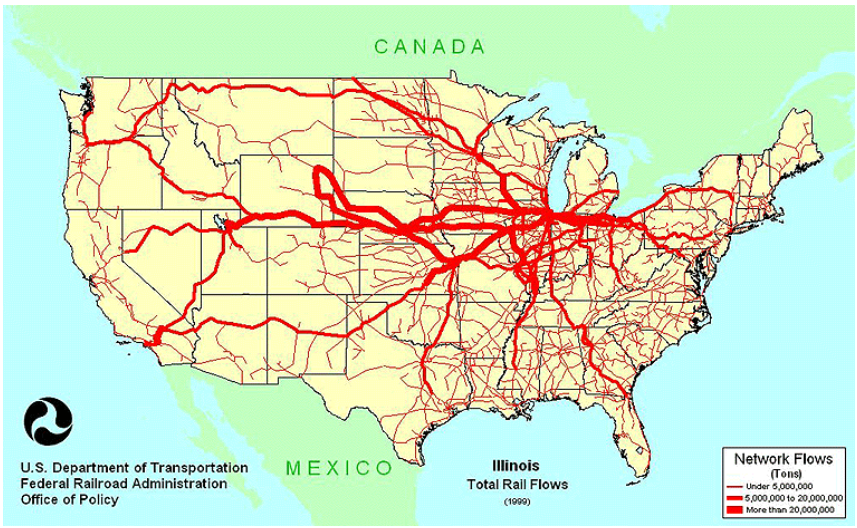
Most of the institutional issues I refer to, issues of jurisdiction, ownership and responsibility, evolved over time to support a different economy than we have today. Manufacturing was more regional in nature. Competition was also within a region, or at least within the nation. Agriculture was also more tied to regional markets. Global trade was largely in high value products. In short, our institutional arrangements reflect a time when distance was a much more significant barrier than it is today.

Freight does not respect political boundaries, nor does it respect infrastructure ownership. For example, if you look at the flow of freight moving to and from Minneapolis, you will see that it depends on the freeway conditions in Wisconsin and Illinois to a far greater degree than it depends on the conditions in Minnesota.



Another example is the border crossing at Detroit-Windsor. The problem lies within Michigan, but failure to address the problem will impact the entire nation.

A final example is the rail traffic in Chicago. The problem lies in Illinois and specifically in Chicago and the traffic flows on all the class I rails, but the impact falls to the entire nation.



In each of these cases, we can ask: Who is responsible? If that shipper in Minneapolis has trouble getting his product to market because the freeways in Wisconsin are failing, does he register his concerns with the Minnesota Department of Transportation? Or does he have to travel to Madison? If a need is apparent to upgrade I-94 from Detroit to Minneapolis, how are decisions made? How is consistency assured between states both in terms of design concept and in terms of the execution of the process?

If an auto manufacturer is Ontario finds the delays at the border too burdensome and decides to source more components in Ontario, to whom does the supplier in Ohio raise a concern for his lost business?

Finally, who can provide relief for the intermodal trucker who cannot move his product through Chicago on steel wheels? The drayage through the city costs time and money. Do the class I rails have the sole responsibility? Is the state of Illinois responsible for bringing the players together to solve a real problem? Or does the state of California, where much of the freight originates, have a responsibility for action?

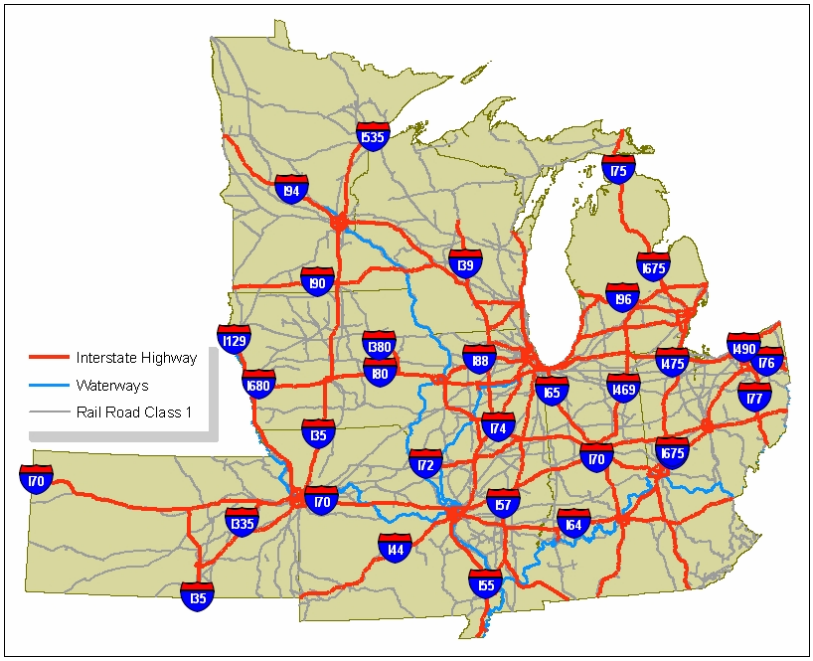
We operate highways with a theory of a federally-aided state operated highway system. The states have the primary responsibility for building, maintaining and operating highways, including Interstate routes. In the past, issues of state responsibility were not a major problem. The Interstate was constructed with 90% federal funding that could not be transferred to other projects. The states either built Interstate routes as approved by the federal government and to federally defined standards, or they did not take part in this major federal funding program. The Interstate gave us a vision of a nationally consistent and connected highway system. The funding provided a carrot to get the states to build it. When the Interstate system was built in the 1960's and 70's, the nation had sufficient capacity so that the type of issues raised above, did not come up; or if they did, they could be dealt with in manageable sized projects. This is no longer the case. Large segments of our freeway system are now approaching their design capacity. Many people also question whether the transportation tools now used are entirely appropriate for the future.

The question we face is what to do next. It seems clear from the maps above that what we do next should be similar from state to state and region to region. Our economy will suffer if we have truck-lanes in the West, added general-purpose lanes in the Midwest, some version of pay-for-service lanes in the East, and some states with no additional capacity. We need a national system. This will force us to reconsider or make changes to our institutional arrangements.

In the world of rail, we operate within the theory of the marketplace. Rail companies are private companies and they must make a profit to survive. At some point, we must ask if what is best for the rail companies is necessarily what is best for the nation. Are there situations in which rail service, or intermodal service, may not make economic sense to a private company, but where it could make great sense to the nation? Are there rail problems that are not within the economic means of the rail companies to solve that should be solved to meet the needs of the country? Certainly, Chicago congestion falls into that second category. But now we really have no institutional arrangements that would bring the public and private sectors together to address a major rail problem.

Let me use another, more manageable, example. One of the areas we have explored in the region is the greater use of technology to get the most value from our existing highway capacity. Generally, we think of these technologies as Intelligent Transportation Systems. The one that seems to have the most immediate value for freight is advanced traveler information systems. Such a system would provide up to date information on the condition of the freeway system to truckers, and automobile drivers, early enough so that they could make alternative route choices, avoiding work zones or other incidents.

This map illustrates the Interstate system in the Mississippi Valley region. It also illustrate that advanced traveler information must be available beyond the boundaries of a given state if travelers are to make good route choices. We are trying to solve this problem by establishing a multi-state traffic operations program, or MSTOP, that will cover the region.



An MSTOP immediately runs into other challenges. First of all, what is the appropriate region? It may be clear from the perspective of Wisconsin, but Minnesota, Iowa and Kansas have strong ties to the plains states. Kentucky and Missouri have as much orientation to the South as to the Midwest. Ohio is equally oriented to the East. And Michigan has close ties to Ontario. Any region sliced out of the whole just pushes some of the problems to new borders. It is an improvement, but it is not a total solution.

The next issue is allocation of costs and responsibilities. Are the costs and benefits for each state equally shared across the region? If the answer to this question is no, as it almost certainly will be, we are faced with an issue of how to pay for something located and operated in one state for the primary benefit of other states. The interstate corridor coalitions such as Gary-Chicago-Milwaukee, I-95 or I-10, have been successful because new federal money came to the regions for that specific purpose. None have really solved the allocation of costs issue. Without special federal funding, the activities of these corridors would be very limited.

My message is to urge you to consider the need to update our institutional arrangements for the twenty-first century. Some solutions to consider are these:

1. **A National Vision:** We need to develop, articulate and agree upon a vision of what we want our transportation system to look like in the future. This vision must address the role of highway travel; the configuration of our future freeways; the role of rail, water and air; and the connectivity between the modes. The vision cannot be handed down from on high. It must be developed through an open, interactive process involving all levels of government, the private sector and the public. The vision must also have the support of the elected decision makers in Washington and the State Capitols.

   This will not be an easy task. Essentially, it suggests that we do at a national level what individual states have difficulty doing. Some might argue that we did not do this

when we built the Interstate or when the transcontinental rail was laid, so why do it now? Those people forget that within the context of their time, both of these previous major transportation initiatives had a good deal of airing before they began. True, that airing was not in formal context of a planning process, but political leaders and business leaders all discussed them for many years before the actual work began. Within the processes of their times, the visions of the past were accepted. We have to deal with the vision for the future within the processes of our times. This Commission could be the catalyst for beginning that process. The USDOT must be the leader in carrying it out.

2. **Funding Programs:** The federal government must develop programs that actually implement the defined vision. The need for federal funding is obvious, but the structure of the funding is also important. As they were at the time of Interstate construction, dollars must be focused on implementing the key elements of a national transportation vision. They must also provide the states an incentive to implement the national vision, as 90%, non-transferable, funding did during the Interstate era.

   In the rail world, we also have to develop methods of helping the rail companies provide the services and capacity needed for the public interest. This may be through the tax code, tax credits or accelerated depreciation, or it may be through direct federal investment in needed rail infrastructure.

3. **Facilitate Partnerships:** The phrase public-private partnership has gained wide use over the past few years. Generally, it is seen as a tool to get private money into traditionally public projects. We need to broaden our view of partnerships to include public-private and public-public as well. We also need to appreciate that a partnership is made up of many more things than the exchange of money.

   Consider the power that a public-private partnership might have if it involved the major rail companies and the USDOT and if that partnership could get to the point of seriously discussing ways of attaining mutual goals and solving real transportation problems facing the country. Such a partnership was formed between the class I railroads, the city of Chicago and the State of Illinois in the CREATE project. Unfortunately, it has not gotten wide support among all the public sector groups that could be affected, including the federal government. But it could serve as a model for future efforts.

   We do not often think about public-public partnerships, but consider the case of the MSTOP outlined above. A facility is located and operated in one state that provides a significant benefit to other states. Those other states have an interest in contributing to the cost of ownership and operations. With current institutions, it is difficult for those other states to contribute, both for legal reasons and reasons of perception. Finding a way for such a partnership to work would be in the public interest.

   The USDOT should assume a leadership role in facilitating partnerships. In some cases, they should become directly involved in the process. The USDOT should examine the rules that govern federal funding to find ways to overcome the real and perceived barriers to true partnerships. For example, it is possible for multiple states to partner on research and planning through what is known as a pooled fund project. Could a similar approach be used for construction or operations?

4. **Joint Ownership:** Another aspect of the public-public partnership is the ownership of facilities. Consider, for example, a regional traffic operations center. It would be supported by several states in a region, but located in one state. If all the states contribute to the bricks, mortar and equipment, should they not have a method of jointly owning the facility? Current rules of things such as interstate compacts are extremely cumbersome. There should be a better way. Such a way could be facilitated by federal transportation statutes.

5. **Federal Standards:** The federal government needs to take a stronger role, working with organizations such as AASHTO, in developing standards for such things as technology. As was illustrated earlier, to be effective, technology related to freeway information and management must be implemented over a wide region, but it must be interoperable and conceptually compatible over that entire region. To make it so, standards must be developed. These standards will have to be reviewed regularly to reflect changing technologies, but as they are reviewed and changed, change should be evolutionary, so that the goals of interoperability are maintained.

6. **Keeping the Public in Public-Private Partnerships:** Many states seem to be interested in finding options for public-private partnerships. Their goal of bringing additional money into their investment programs is good, but as those partnerships are developed, we must be assured that the long-term public interest is maintained. If a private company controls a key link in a freeway network, how can the public be assured that the vision of continuity and connectivity of a total system will be implemented? Without some safeguards, the growth of private facilities could further fracture the decision and responsibility processes. Just as the state and federal governments are going to have to learn to work with private rail companies, they should consider how they want to work with private road companies.

7. **Tolls:** The huge financial requirements of our transportation system seem to be leading many people to embrace tolling to be imposed by private companies or by public agencies. When tolls are imposed, we must recognize that they are rarely part of a true free market transaction. Both the public and commercial motorists are captives of the toll authority. Therefore, we need some standards to ensure maximum mobility and that user groups pay an equitable share.

   The federal government should conduct cost allocation studies that result in standards that can be applied to corridors to determine what reasonable tolls should be imposed and to equitably balance auto and truck tolls. These could be benchmarks based on location and utilization characteristics, not hard rules, but the benchmarks would help to keep tolls within some realm of uniformity.

   The other aspect of tolling that requires federal attention is the technology of toll collection. If tolls are gong to proliferate in the future, we need to make them as painless as possible. That means some effort, which only the federal government can reasonably undertake, to standardize collection methods so that a transponder used by one state will work across the nation.

Thank you for offering me this opportunity to contribute. I will be happy to answer any questions.