National Freight Transportation Workshop Proceedings

September 12-14, 2000
Bloomington, Minnesota

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National Freight Transportation Workshop

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This document contains summaries of the presentations from panel discussions, participants' questions and comments, and breakout group discussions. Panelists' papers are presented in their entirety in Appendices B–K.

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FHWA National Freight Transportation Workshop

Executive Summary

Transportation experts from various Metropolitan Planning Organizations (MPO's), local private sector businesses, State transportation officials, and Federal representatives from the U.S. Department of Transportation met in Bloomington (Minneapolis), Minnesota, on September 12-14, 2000. The purpose of the Workshop was to elicit and consider the varied experiences of the attendees related to intermodal freight planning, policy, performance measurement, and investment. The Workshop served as a forum for proactive public officials and industry to consider both: (1) priority needs for Federal and State planning and assistance programs that can enhance freight productivity and mobility in the next decade and beyond; and (2) ways to increase the growing partnership efforts between the public and private sectors that can improve intermodal freight transportation performance and efficiency.

In preparation for the Workshop, both presenters and other attendees were requested to bring to the table their freight-related experiences for Federal, State, MPO, and private industry consideration. Similarly, they were asked to identify areas where future investment was needed and could be cost-effectively applied to transportation planning and provision of services. Participant discussions centered on:

- Describing the current state of intermodal freight planning, policy, and investment, as they are undertaken by, and affect the conduct of, both government and industry transportation administration and operations;

- Identifying "best practices" being employed by States agencies and others that could address current and emerging transportation challenges;

- Considering means to bring the public and private sector's planning and decision making processes closer in line with one another; and

- Describing successful applications of performance measurement as a means to judge the effectiveness of transportation activities.[1]

Not surprisingly, attendees at the Workshop voiced a common consensus: namely, that the current means by which freight transportation improvement programs and projects are conducted must change. Change must focus on enhancing: the general public's understanding of freight and intermodal freight transportation and its role in citizens' lives; program responsiveness; public-private sector interaction and cooperation; and access to, and delivery of, financial resources. These were underscored in presentations, break-out sessions, and informal interactions during the workshop.

<u>Partnerships and Outreach</u>
Participants recommended that the public sector, at all levels, improve its understanding of shipper, carrier, broker and transportation industry leaders' needs, and incorporate these needs into the freight planning, financing, and development process. Partnerships between the sectors are key to the success of freight planning and programming. Facilitating freight users' and suppliers' involvement in the public

[1] Due to time constraints, this part of the discussion was unfortunately limited in scope. Some presenters at the Workshop did describe in their papers how performance measurement had been used in their planning and operational activities. The reader is encouraged to review the papers for this information.

sectors' deliberations will enhance the Nation's ability to move freight seamlessly across transportation modes and borders.

Delaying the development of partnerships is the public sector's limited understanding of the private sector's business demands and decision-making timetables, and the private sector's inadequate understanding of the governmental process. The private sector moves far more rapidly in its planning and implementation activities, having a shorter time line to satisfy. The public, by contrast, moves to a multi-year pace, with legislative approvals, hearings, etc. required to ensure public accountability and objectivity of service application.

The public sector must produce planning and program services that can accommodate the private sector's time frame, and nurture trusting relationships that encourage mutual sharing of the risks, responsibilities, and costs of needed projects, as well as their rewards. Similarly, the private sector needs to be encouraged to rethink its traditional antipathy to government association with its business activities and, thus, facilitate the provision of public assistance better attuned to marketplace demands.

The expansion of interstate trade movements and increasing international trade and competitiveness means that freight policy must see beyond the immediate local correction project. Public sector outreach efforts are needed to encourage more trade corridor-based, multi-jurisdictional partnerships that span geographic boundaries and facilitate satisfaction of more "global" freight transportation needs. Broad-reaching programs like those now supporting discretionary funding of innovative border and corridor projects must be expanded and others created.

As part of the outreach efforts, the experience of university transportation centers may be drawn upon in the creation of regional centers of excellence where freight issues may be regularly confronted and solutions considered by involved public and private officials. Outreach also should enable the public to know not only how goods move from point to point, but also to understand the responsibilities that this movement places on the public.

Data Analysis and Dissemination

Participants consistently called for better data collection tools and procedures to ensure timely, accurate, and accessible freight data for users. More resources need to be devoted to data collection, analysis, and dissemination. While a number of States are seeking to develop reliable data on freight movement, recommendations were made for more nationally focused freight data initiatives to help illuminate and forecast freight movements in the national and international arenas.

More industry generated data need to be made available for public sector planning and forecasting activities. However, private sector concern about data confidentiality and possible public sector disclosure of competitive information is limiting this expansion. This situation will change only with the continuing development of trust between the public and private sectors though dialogue, and by the development of incentives to promote information sharing.

Funding and Financing

Participants at the Workshop acknowledged that Federal law in the past decade has tried to encourage innovative financing for intermodal transportation projects, to leverage public spending through the encouragement of partnerships with private sources, and to make funding programs more flexible to meet emerging intermodal freight needs. Yet, participants also felt that consistent State or MPO procedures are lacking to help their officials identify and choose priority freight projects needing resources. Basically, freight does not compete well against other local transportation initiatives when project planning and funding are discussed.

Participants see a great need to advocate, test, evaluate, and implement innovative freight financing programs (e.g., like the current border and corridor program) that will: give freight an equal share when transportation resources are allocated, foster partnerships, and ultimately enhance the movement of goods. New pilot programs are needed to demonstrate innovative techniques and opportunities. Most importantly, any innovation must seek out matching opportunities among public and private interests.

Sustaining Mobility

Participants confirmed other forums' call for better connectivity between the various segments of the freight transportation system. They also decried the inability of the current surface infrastructure investment to keep up with increasing traffic demand. To increase transportation system effectiveness, some participants recommended increased consideration of "operations strategies," activities designed to improve traffic flow without major infrastructure improvements (e.g., special purpose traffic lanes at terminals, value pricing, greater use of new information technologies).

Part of the problem was attributed to the current nature of planning for enhanced mobility. For example, planning has sometimes failed to distinguish between automobiles and truck needs, with the latter assumed to be addressed with car-focused roadway improvements. Also, there has been no public discussion or encouragement of new transportation modes that might help mitigate system congestion and relieve capacity concerns.

Public policies may be confounding resolution in some areas. Proposed changes to commercial vehicle hours-of-service rules, while aimed at improving road safety, may diminish desired productivity improvements by raising the specter of increased motor carrier cost, schedule expansion, and diminished profit margins. Similarly, the failure of Federal and State agencies to take needed steps to ensure there are adequate places for commercial driver rest, especially at night, confound the carrier's efforts to effectively construct and access a pool of alert drivers.

Correction in these instances can be achieved by policymakers recognizing and weighing the competing national priorities of safety, productivity, and mobility improvement. The solution ultimately depends upon coordinated public and private sector investment and innovation, with a committed, sustained dialogue among government and industry to identify resources and promote a greater understanding of freight transportation's dynamics and contemporary needs.

Workshop Agenda

FHWA National Freight Transportation Workshop
September 12-14, 2000
Sheraton Inn Airport, Bloomington, Minnesota

Tuesday, September 12, 2000

8:00-8:30 **Welcome and Introduction** Nancy Melvin
Opening Remarks
Richard Stehr, Minnesota Department of Transportation
Alan Steger, FHWA Minnesota Division Administrator
Harry Caldwell, FHWA Office of Freight Management and Operation

8:30-9:45 SET I
Moderator: **Chris Hallekson** Retired, CH Robinson Company
Panelists: **Carol Sanger**, Arizona Department of Transportation
F. Gerald Rawling, Chicago Area Transportation Study

10:00-12:00 Set II
Moderator: **John Hauslauden**, Minnesota Trucking Association
Panelists: **Steve Kale**, Oregon Department of Transportation
Donna Brown, Wisconsin Department of Transportation
Dilara Rodriguez, California Department of Transportation

Wednesday, September 13, 2000

8:00-8:30 Logistics for the day
Harry Caldwell, FHWA
Nancy Melvin, Minnesota Department of Transportation

8:30-9:45 Set III
Moderator: **Bruce Hocum**, Rubenstein Freight Consultants
Panelists: **John Brown & Rand Marshall**, Pennsylvania Department of Transportation
Jack Foster, Texas Department of Transportation

10:00-12:00 Set IV
Moderator: **Tim Penny**, Himle Horner, Inc., Chair, Minnesota Freight Advisory Committee
Panelists: **Nancy Melvin & Mark Berndt**, Minnesota Department of Transportation
Alan Harger, Washington Department of Transportation
Jerry Nagel, Northern Great Plains Initiative for Rural Development

1:30-4:30 Breakout Work Groups

Thursday, September 14, 2000

8:00-11:30 Breakout Work Groups

11:30-12:00 Slide Presentations from Two Work Groups
Q & A

1:00-4:00 FHWA Presentation
Freight Analysis Framework
National Freight Flows
Key Issues Affecting Freight
Trends in Freight Transportation
Q & A

Proceedings from Day One: A Summary of Workshop Issues and Findings

Opening Remarks

***Richard Stehr, Mn/DOT*:** We face many challenges at the state Department of Transportation. We have an aging infrastructure, a daunting number of large bridges to replace, increasing congestion, many bottlenecks to deal with, inadequate funding to address these needs, and difficult investment decisions to make as consumers continue to demand travel alternatives.

On top of all of these needs, there is a gap of understanding between shippers and carriers and planning and operating infrastructure. At Mn/DOT we are trying to better recognize freight transportation needs with four strategic objectives: 1) recognizing and using multimodalism 2.) streamlining program delivery systems to deliver projects on time and on budget. 3.) using interregional corridors linking regional economic centers is crucial to meeting Minnesota's economic needs; and 4.) treating information as a product. The impact of delays or uncertain delivery can be mitigated with proper information.

But Mn/DOT can't do it alone. We work with shippers, educators, cities, counties, chambers, and professional organizations. This workshop provides another learning avenue—a way for us to discuss what works and what doesn't work. This workshop provides the chance to share learning techniques, including performance measures. I expect our learning to result in some change and this workshop will make a difference in our future decisions.

Alan Steger, FHWA Minnesota Division Administrator: How many were here yesterday (at the symposium)? Most of you. Good. If not, you have some catching up to do. If you were here, you got a prelude of things to come. I was impressed with Chris Lofgren's model for supply-chain effectiveness. That established a good framework for today. The two panels at yesterday's symposium did an excellent job of laying out the issues we should deal with today, perhaps even off the table, and then gave us some good, practical solutions.

My experience is not in the area of freight planning or transportation planning. My freight experience dates back to college. But allow me to offer a few perspectives from a layperson. First, I think the attention to this subject is well overdue. Many of you in the private sector understand the economic impacts of transportation. Those of us in public sector have all but ignored freight transportation issues in the past few years. We assumed that if we took care of cars, we were taking care of the trucks. How wrong we were. I think if you think about how we got into that situation, all government decisions are political. And freight doesn't vote, people vote—people drive cars. We have a long way to go. Yesterday, Harry Caldwell gave a poignant example referencing the economy and proposed transportation legislation. We have a big job to do in efforts to educate the public and legislators on transportation and issues.

Second, we in the public sector think of transportation as an end itself rather than a means to the end. We often look at our vision as something like achieving the best transportation systems in the world or at least in the United States, but we should look at transportation as a means to achieving quality of life and economic prosperity. I was pleased to hear yesterday about taking the cost out of the supply chain to increase people's quality of life. Transportation is about access to jobs, education, and all the things that make quality of life for people including quality of goods.

The issues affecting transportation were of two distinct types: policy issues (hours of service, insurance, truck size, etc.) and the other side, technical issues (freight planning, etc.). That's on the table for today. The key to this is performance measure. This is where the public and private sector need to get together.

Finally, we need to establish partnerships. Alan Harger presented a great model to do this. We need to first look at sharing information, and then begin to talk about the risks and rewards. In true partnerships, all parties bring their individual knowledge and experience to the table and leave their corporate identities at the door in order to form a new identity.

Our goal is to look at the best practices and develop a national strategy. There are the right people in the room today. I'm sure that we'll put together our collective energy and put together the solutions we need.

Harry Caldwell, FHWA Office of Freight Management and Operations: We need to develop a small family of performance measures to present at a conference coming up in Irvine in October. If you want to participate, let me know, today. I think this performance measure conference in Irvine will cover a lot of things and we want to make sure transportation gets the attention it needs.

The conference this week is one of several meetings to be held prior to reauthorization. This is our time to think through what we want this to look like. You have been living and thinking of freight for some time. We want to get these ideas out on the table after the conference. Feel free to share your comments with us to reinforce what the perspective ought to be with regard to reauthorization. There will be a meeting in April to discuss freight finance. We want to address that issue early on and not leave that to political process.

I handed out a sheet that diagrams a sort of business plan for our freight productivity program. You'll see the quarters, if you drop down, you'll see a little diamond. That represents this event. All the diamonds across the sheet represent the major events to be held before reauthorization. (Harry discussed some of the upcoming events outlined on his chart.)

We will layout broad concepts before reauthorization over the next few months, then come back and layout a very firm plan, and finally drill down and develop specific program initiatives.

We'll have a three-hour session on Thursday in which I'll do a core dump on you to show an approximation of freight flow. If we have time, we'll discuss the national highway freight connectors report— this is waiting transmission to congress. It will be a full week but it's a great opportunity to engage and look at the analysis of what's been done today.

I have a philosophy that says there are three ways to get things done: encourage, enable, and direct them. ISTEA and TEA-21, but particularly ISTEA, did a lot of "encouraging," but that's all it did. TEA-21 went a little further; it did more directing. But we should be enabling states and local governments and we should help facilitate and provide seed funding to do this.

SET I — Panel Summaries

Moderator: **Chris Hallekson** Retired, CH Robinson Company

CANAMEX: A Case Study In Trade Corridor Development

Presented by: **Carol Sanger**, Executive Director, CANAMEX Corridor Project, Arizona Department of Transportation

Overview

In this paper, I will trace the development of the CANAMEX Corridor to illustrate what it means to develop a trade corridor, and what has worked and not worked in the last ten years. In the course of describing what we are doing and why we are doing it, it is my hope that there are useful lessons for other corridors and/or regions of the country.

In 1993, Arizona developed a trade corridor study (see definition in the paper). We didn't realize how important the information piece is becoming to us and everyone else. We want to enhance global competition and increase safety. But the world is changing; stuff doesn't just go from Mexico to Arizona to Canada. It goes everywhere. We want to enhance global competition, not just going north and south. Since tourism is an important part of this corridor, we can't just think about transportation.

There are only ten million people in these five states and a lot of public land in these five states. This presents certain development and transportation challenges. Some of these areas are very isolated. But, Arizona and these other states are transitioning economies from natural resources to service. All the governors of these states see things in many of the same ways, which is a great strength.

Summary and Conclusions

Development of a Trade Corridor requires considerable patience and a long-term view. As the CANAMEX experience has shown, there is a need to prove the concept again and again. The Mexican devaluation, the alternative investment opportunities in the United States, the Asian Economic Flu, authorization of TEA-21, and reauthorization of whatever is coming next are factors that have significant effects on the pace and development of the CANAMEX Corridor.

CANAMEX has been assisted by the involvement of the Governors and their staffs. This has been accomplished by the warm personal relationships, consistent policies, and values of the sitting CANAMEX Governors. **Participation by the private sector is invaluable** to such an effort for the vision, energy, and direction they bring to the effort. Their fresh perspective and willingness to take risks are essential ingredients for any bold action.

CANAMEX has also been helped by virtue of the fact that no one state dominates the region economically. While Arizona is the largest state in terms of its population and economy, it does not overwhelm its neighbors like a New York, Texas, or California does. This helps to maintain credibility of the effort.

It is vitally important that each participant in this effort acts openly in its own best interest. At the beginning of this process, it was stated and restated that not all CANAMEX initiatives have equal value to each state. There may be international border issues that are important to Montana and Arizona, and winter road issues that are important to Montana, Idaho, and Utah. While all states must approve the CANAMEX Corridor Plan, all states do not have to support each initiative equally.

Overall, each state must feel that it has benefited from being part of the Coalition for regional collaboration to continue. The issues before the CANAMEX states is how this cooperation will continue

once the federal grant supporting the Corridor Plan runs out. It is an issue that the CNAMEX Corridor Coalition will begin to address this fall, with discussion continuing through the Spring when the Plan is published. With the economic case for the plan elements behind us, the states will decide together the form of continued organization and support.

Are We Still Eligible for the Yellow Jersey? Taking the Pulse (Again) of MPO Freight Planning

Presented by: **F. Gerald Rawling**, Director of Operations Analysis, Chicago Area Transportation Study (CATS)

Overview

Chicago is really a "state within a state within a state." We do not have that holistic approach to freight planning that is the hallmark of Washington state or Florida, for examples. We don't have the holistic approach at either the state or the "state within a state" (that's the MPO) level.

I continue to think that there is reason for a limited number of MPOs (SCAG: MPC; PSRC; CATS; & a handful of east coats MPOs) to join together into a twenty-first century reprise of the Hanseatic League .... they have the same *modus operandi*.

For the "state within a state" the action is unmistakably *intermodal***,** specifically the rail/highway transfer, and vice versa.

The northeast Illinois region (more commonly you will see this as Chicago) is the third largest port in the world after Hong Kong and Singapore (measured in terms of intermodal volume). We are presently doing about 92 million tons/ year in intermodal, most of it consumer durables. Put into perspective, that compares with statewide tonnage of farm produce, by the rivers, to the Gulf in the order of 30 million tons p.a., or 25 million tons p.a. [import/export/internal tonnages combined] through the Illinois International Port.

Intermodal analysis is a large component of the CATS's freight program. The ancient Greek (or maybe it was the Renaissance French) mathematicians gave us taxonomy of statistics, as follows: 1.) nominal, 2.) ordinal, 3.) interval, and 4.) ratio. I propose an obvious fifth category: serial.

To get to Performance Analysis, you have to get to at least stage three. My take on it is that, historically, freight planning has rarely got much past stage two. Maybe in the break-out sessions I'll talk some more about why I think this is, but it has to do with staff, money, interest, etc.

In the course of our studies in the last six years, we have clearly progressed farther than ever before in the comprehension of how goods move. Now is the right time to say that it has been my great reward, personally and professionally, to work with the members of our Intermodal Advisory Task Force.

I propose now to examine what we have done in the way of performance analysis in the context of the aforementioned taxonomy.

Category 1, Nominal is the weakest statistical level and the basic inventory or descriptive category, but necessary to start the thought process. Only if company A and company B have some common product line can the ordinal relationship be established.

Choice of attributes is an important consideration. Before IDOT punted on its intermodal management system (i.e. before it became a voluntary exercise and therefore no longer met any basic requirements) it started to build a state-level database. For truck terminals, the attribute it was recording was doors. Do

doors tell you much? Does it tell you anything you can use for a subsequent purpose? Only if one knows the surrogate relationship to some attribute you might want to know, like trip frequency, O-D pair, volume, etc.

We made the leap from nominal to ordinal by positioning our rail yard data into a hybrid national table, demonstrating, *inter alia,* that we have individual rail yards where the process volume exceeds all but two coastal ports. That, too, got a lot of attention, as did the calculations on freight transportation employment and payroll value, such that at least two recalculations are underway presently.

If one wishes to know the *why* of the rankings, one needs to have some awareness of current conditions, e.g. a particular property might be only operating at 50 percent of design capacity because it is only in its first year of operation. We subject all data to a common sense audit. I have seen diurnal volume charts in which a yard is reported to receive 3,660 arriving trucks and reported to witness 1,285 departures. How can this imbalance be explained? Does the consultant not feel some obligation to at least flag the discrepancy?

At any of categories 1 and 2, the student can also secure certain statistical data, e.g. the range (of data points), the limits (upper, lower) the mean, the median, and the distribution (of points), if it is useful to know those data.

We have generally only flirted with categories 3 and 4 because there has not really been much purpose in seeking to define intervals. It is enough to know that a specimen (e.g. a rail yard I) has a daily in/out volume more or less the same as J and they are both several intervals greater than K & L.

We started to break the mold a second time, in which we took two variables and sought to establish a relationship between acreage and volume processed. The stunner was to estimate future volumes and turn those into a forecast of spatial requirements to 2020: a need for about 6 1/2 additional square miles by that date.

We also did some exploratory work on truck volumes by the simple expedient of taking two otherwise largely inert databases and mating them to determine truck VEQs by highway segment. It is my wish to revisit a couple of unfinished working papers, now that I've got some leads to pursue, and do some further examination of trucking trends.

And this is also where we kind of stopped two years ago as (a) other actors caught up with us or, shall we say, looked to find their own opportunities, and (b) other CATS work efforts demanded attention.

If I had the time, the budget, the staff, I could be a rich man twice over because we get frequent calls asking questions like. "Are there more trucks on the road now than there were 10 years ago, and are they bigger?" Those are good questions, and I don't have the answer, though I feel that I should. And the answer is the Category 5 that I proposed because I believe this is at the heart of the matter for future freight planning.

I was recently in Kansas City for the ribbon-cutting of the Sheffield Flyover, not quite four years from consultant report through engineering and funding to project completion. By contrast, we have the St. Charles Air Line project first proposed in 1993 and going nowhere. That's because it basically has no intrinsic operational business value. And if it were ever honestly costed out it would make the Sheffield Flyover look like pocket change.

We (CATS) have not published any new research in almost two years, not counting the rework of the Connectors report into a Volume 3, but I am lately concluding that freight planning in northeastern Illinois is a lot like the Tour de France—it's not always the same leader and maybe for now our role in it

is to drop back into the pack for a while. You can wear the yellow jersey without being in front. The problem today, as I see it, is that it's not clear who is in front and who is riding for which team.

The Task Force has not met for several months but I have made a dot point list of some of what is going on presently so you can buttonhole me for more details if you wish:

- The FHWA's Intermodal Connectors Assessment is in final edit
- CDOT has funded some complementary work on Hip rates at intermodal yards and some work on levels of service at truck-intensive intersections. CATS is doing the QC (the common sense audit).
- The AAR has funded a three-part study of the Chicago Gateway; at the same time the roads in the Gateway have instituted a major institutional coordination project.
- Northwestern University's Departments of Civil Engineering and Infrastructure Research are doing some early research into intermodal truck behavior and network influence.
- The American Institute of Architects is flirting with the notion of a new, improved version of our brochure. The AIA Chicago chapter subscribes to my long-held belief that the body politic labors under the impression that goods can be put on shelves by some kind of divine intervention that somehow does not need to involve real trucks and real Mains.
- The MPC (Metropolitan Planning Council) put on one splendid freight mobility conference and several parties are considering sponsoring or cosponsoring a follow-up.
- The Union Pacific (and some of my best friends are from the Union Pacific) continues to search for a site for Global III.
- And we can still boast the only phantom segment on the NHS - the Central-Narragansett corridor.

Question and Answer Session

Do you have any information on how much freight moves on the CANAMEX?
Not very much. It is a tourist corridor. For different sections there is lot of freight, however. Nogales sees about 1,000 to 1,500 trucks a day in that area during peak produce season. But if you look at what moves from the Midwest on its way to the Pacific Rim, there is a lot.

On the financial strategies side—is it too radical in this corridor? Will states adopt a pooled fund rather than wait for federal funding. Are you talking about it? In Minnesota, we had two districts spending money in a different district. We overcame the mentality that money appropriated by formula can be spent only in a specific geographic region.
Great idea, but that conversation hasn't come up yet. But I think it will start happening. The state of Nevada has five super projects; they want to spend more money in the state of California to beef up the road between Los Angeles and Las Vegas. They are working on the Hoover dam project, which is an example of state-to-state sharing.

You said that we need to look at CANAMEX as a tourist and trade corridor. From a trucking perspective that means conflicts. Are you looking at future initiatives to alleviate the traditional auto/truck problems?
It is my hope that this issue is covered in the plan, but I bet it won't be covered in those un-congested rural areas. Metro areas are where the turf fights occur. I don't know the answer. But we are very aware of the issue.

Gerald, maybe MPOs should back off. Are you ahead of the curve maybe?
Since we don't have that cohesive holistic approach as in other areas, for the present, it seems as if the agent, which is not the same thing as the agency, the agent with the horse power and resources to advance

the debate may not always be the same one. We, as the MPO, have worn the yellow jersey for six years. We've stepped back to let other agents come to the fore and I think that's appropriate.

How transferable is the approach to develop the intermodel? Can it apply to other MPOs?
Well, when you ask the question, "Do I know enough?" the answer is clearly no. What we did with the calculation is to freeze the technical aspect. Handling processes are held constant at least for the moment. Productivity rates are what we will project. I don't see why we need to revise that. The point is that we, in our region, we don't have the resources to understand in a real sense what we're looking at in 20 years. Other big carriers are spilling over the walls with current use (using outliers for empty storage already). It wasn't more sophisticated at the time, but done conservatively enough, we were sure we wouldn't overshoot.

Gerald, with all the good data you have, has that turned into projects for access to those yards?
Yes and no. I think we are on the threshold of approaching it or addressing it systematically. I can't prove that it is cause and effect. We demonstrated that this was a good place to do that and politically, the UP hammered away at the government. What we've done most, is to hang these numbers up in public so people would say "I didn't know you were taking that many loads out" and that way people aren't surprised that the local streets look beat up. The 4 million dollars that went into improved signal control, lighting, and draining…we cleared out a (Chicago DOT) redundant infrastructure and rebuilt it. Those are examples. The purpose we've served is to put a lot of this stuff in play and keep it there because it was a fairly parochial piece of knowledge.

Carol, on the corridor, regarding truck size and weight issues—are there limits in Arizona but not in other states? Will you discuss this? Do you see opportunity for new technology?
No. Arizona has smallest weights. One of five states has said that if that issue is on the table, they will walk out. It all comes down to that. There are multiple opportunities for regulatory harmonization. We want to establish common ground in other areas. Many other groups are addressing this issue of weight restrictions. It does come up, but it is a problem.

SET II — Panel Summaries

Moderator: **John Hauslauden**, Minnesota Trucking Association

Freight Transportation Planning in Oregon

Presented by: **Steven R. Kale**, Oregon Department of Transportation Planning Section

Overview

Federal. To support freight movements, ISTEA included a variety of planning provisions. Metropolitan Planning Organizations (MPOs), for example, were required to conduct transportation planning activities, including the development of plans that address the efficient movement of freight and access to ports, airports, and intermodal transportation facilities. Similarly, states were required to develop multimodal transportation plans that considered efficient freight movements and access to intermodal facilities. Another important requirement was for states to develop six information management systems, including an Intermodal Management Systems (IMS) for freight and passenger movements through intermodal facilities.

Other federal freight-related activities include the passage of legislation to implement provisions in ISTEA as well as the development of a national freight transportation policy. Passage of the National Highway Designation System Act of 1995, for example, identified the routes to be included on the National Highway System (NHS), including routes to major intermodal freight facilities. The NHS legislation also removed the ISTEA requirement for states to develop the IMS and four of the other five management systems.

In early 1997, the U.S. Department of Transportation issued a National Freight Transportation Policy Statement to help shape decisions affecting freight transportation across the various modes. In general, the policy's guiding principles address funding and planning, cost-effective investments, economic growth, safety, environmental protection, energy conservation, technological advances, defense and emergency requirements, international trade, and freight and passenger service on joint facilities.

State. In the last five or so years, an increasing number of state transportation agencies have intensified freight policy, planning, and programming activities. Table 1 in Appendix D summarizes selected plans and studies detailing aspects of how several states have addressed or are currently addressing freight transportation or goods movement. Additionally, numerous states have a rail freight plan or similar document, as well as corridor studies addressing freight or goods movement.

Regional and Local. Oregon's five metropolitan areas (Corvallis, Eugene-Springfield, Medford, Portland, and Salem) are required by federal and state law to prepare regional transportation plans. Metropolitan Planning Organizations (MPOs) have been designated in four of the five metropolitan areas to coordinate transportation planning. In the last couple years, the four MPOs have completed draft or final regional transportation system plans in which freight concerns and needs are addressed.

The Oregon Transportation Planning Rule (Oregon Administrative Rule 660-012) requires cities and counties to prepare Transportation System Plans (TSPs) to help implement Oregon's statewide planning goal for transportation (Goal 12). Among the various components of TSPs are lists of projects and programs to meet anticipated local transportation needs over a 20-year period. Although the Planning Rule requires local jurisdictions to develop plans incorporating elements for various freight-moving modes, it does not require them to specifically identify projects and programs to enhance freight mobility.

Summary

Over the last 10 years and especially in the last five, substantial progress has been made toward better integrating freight considerations into transportation policy, planning, and programming in Oregon.

Successes have included raising awareness of the importance of freight to the state's economy, which in turn is reflected in a variety of policy, planning, and programming decisions. Challenges, however, remain. Among these are the following.

Maintaining private sector interest in policy and planning activities is a significant challenge. While several private sector representatives have long maintained interest in such activities, the "pool" of people so interested and involved is relatively small. This no doubt occurs in part because of inherent differences between the ways the private sector and public sector make decisions about needs and investments; e.g., the private sector's time frame tends to be much shorter than the public sector's time frame. Private sector representatives often lose interest in public sector activities that are not well focused, have "squishy" products or results, or take too long to complete.

Using performance measures to identify transportation improvements can be an example of a public sector activity in which private sector participants lose interest over time. Performance measures that sound good conceptually often are problematic to implement because the data needed for measures are not available, are available but difficult or expensive to obtain, or are not reported regularly enough to be useful. Muddling through efforts to develop and implement performance measures can be intensely arduous for public sector staff, and even more so for private sector representatives trying to help through service on advisory committees. Keeping the effort simple is excellent advice but not always easy to follow. ODOT continues to seek the proper balance between meaningful and easy-to-measure performance standards and criteria.

Currently, much of ODOT's freight planning activities are directed toward implementing various next steps as illustrated in Table 2, Appendix D. Examples include:

- updating statewide modal plans and implementing freight policies and actions in existing plans,
- developing guidelines for planners and consultants to use when developing freight elements for local and regional transportation system plans,
- working with MPO and ODOT corridor planners on regional freight transportation planning activities,
- participating in efforts to develop better commodity flow information, supporting completion of a statewide shipper and motor carrier survey,
- providing staff support for the Oregon Freight Advisory Committee, refining measures and criteria to help evaluate freight transportation improvement needs,
- preparing maps, tables, and other materials to help STIP coordinators and others understand freight movement concerns and needs,
- developing stories and other materials to communicate freight information inside and outside ODOT, and maintaining ODOT's recently developed intermodal-freight web site at http://www.odot.state.or.us/intermodal-freight/.

Implementation of these and not-yet-identified next steps in part will occur in conjunction with activities of the Oregon Freight Advisory Committee. Over the longer term, the next steps and how they are implemented likely will be critical factors in evaluating the success of ODOT's freight transportation planning.

Wisconsin's Translink 21 Freight Commodity Analysis

Presented By: **Donna Brown**, Wisconsin Department of Transportation

Overview

The report describes the freight forecasting techniques used in the development of the multimodal freight commodity analysis for Wisconsin's Translink 21 Multimodal Plan. This discussion will provide an overview of the freight forecasting analysis, highlighting the framework used to incorporate private

industry needs into the transportation planning and programming process. Last, the discussion will briefly outline upcoming changes and new aspects of the department's freight component of the State Rail Plan. Since the completion of Translink 21, Wisconsin has focused on developing individual long-range statewide plans for each mode. The State Highway Plan 2020 and the State Airport System Plan 2020 have both recently been completed. The department is currently in the process of developing the State Rail Plan. The State Rail Plan will require the first update of the Freight commodity analysis since the Translink 21 process. Many of the assumptions and forecasts developed six years ago will be updated as part of the plan development process. The anticipated completion date for the State Rail Plan is late 2002.

Wisconsin's experience in applying performance measures across all freight modes has been limited because the infrastructure in many of the state's key freight areas are privately owned and operated. As a result, the state's level of involvement in the planning and programming process is centered on creating state policies for ensuring the safety and financial well being of the freight industry in the state.

Summary

Wisconsin's Approach to Freight Transportation Planning, Policy, and Programming

The intercity freight planning effort began with the development of a county-level commodity flow data set for all modes. The database was built on a number of federal, state and private data sources, including:

- (1992) Interstate Commerce Commission (railroad) waybill sample
- U.S. Army Corps of Engineers Waterborne Commerce of the United States statistics
- FAA Airport Activity Statistics of Certified Route Air Carriers (12 months ending December 31, 1992).
- Reebie Associates proprietary Motor Carrier Data Exchange
- Current Industrial Reports
- Annual Survey of Manufacturers
- 1990 Census of Population and Housing

Reebie Associates prepared a commodity flow model and forecast and the results analyzed by Wilbur Smith Associates.

Data collected provided commodity information at the three-digit Standard Transportation Commodity classification (STCC) level. Origin, destination and trip length information was gathered from among 106 county zones in Wisconsin and neighboring states of Minnesota, Iowa, Illinois and Michigan. An additional 68 regional zones were also incorporated into the analysis. Long-range 20-year forecasts of the commodity flow data were developed using county-level two-digit Standard Industrial Classification (SIC) employment forecasts developed by WEFA Group. The trend data only provided information on forecast economic activity.

Freight Commodity Forecast Results

The intercity freight commodity forecasts used in the Translink 21 Plan reflect the input and concerns of the freight industry in Wisconsin. The Plan forecasts over all modes and estimates that 485.3 million tons of freight would be shipped in 2020 (see table 5 Appendix E). This tonnage represents a 58.4 percent increase over 1992. Under the analysis, the truck mode had the largest share of total commodity shipments, estimating nearly 237.5 million tons of freight shipped in 2020, an increase of 49.8 percent over the planning period. Freight rail had the second highest share of total shipments but a higher forecast growth rate of 72.8 percent between 1992 and 2020. The waterborne mode forecast estimates came in a distant third with an estimate of 51.4 million tons shipped in 2020. Air Cargo had the smallest estimate in tonnage 387 thousand tons of freight shipped in 2020.

State Rail Plan 2020

WisDOT is undertaking a two-year rail planning process to develop the Wisconsin State Rail Plan that will span the time frame through the year 2020. The State Rail Plan will be a long-range, statewide effort,

which will define the future role of the Wisconsin Rail System in the movement of people and goods within the context of the State's entire multimodal transportation network. WisDOT will work in close cooperation with the owners and users of the state rail system and other interests to produce a plan that will provide a policy framework for the preservation and enhancement of the Wisconsin Rail System to meet the future transportation needs of the residents of the state. The freight component of this plan focuses on updating the Translink 21 commodity flow forecasts. The forecasts will be incorporated and converted into the Department's Commodity Information Management System for assignment to the State rail network. An assessment will be conducted on the potential for increasing the amount of freight traffic forecast to be carried by truck on highways to truck-rail intermodal movements and make appropriate adjustments to the assignment of forecast commodity flows to the Wisconsin freight rail network. WisDOT has established a Freight Rail Advisory Committee to provide input into the plan development process. The Department is looking to reconvene the Freight Expert Panel to review and update the Translink 21 process. Finally, a review of the Translink 21 rail route classification, performance standards and infrastructure criteria will be completed to determine their usefulness in the implementation of the freight rail component of the State Rail Plan. Completion of the Plan is anticipated for late 2002.

The Intricate Relationship Between Goods Movement and Transportation in California

Presented by: **Dilara Rodriguez**

Overview

In California, the issue of movement of freight on national and international levels is an extremely important subject to both the goods movement industry members, as well as the policy makers. With the implementation of the NAFTA treaty, the close relationship between goods movement, and the national economy has been intensified. It highlighted the role of transportation system as an integral tool to strengthen our leadership role in the global economy, whether as a state and/or as a nation.

This paper will attempt to highlight some of the goods movement initiatives, goals, and policies within the State of California and amongst our local and regional partners.

Summary

Economic Setting

California is an economic powerhouse, fueled by the production and movement of goods and services. California's ports, airports, and related businesses contribute over 40 billion dollars per year to the national economic output, over one million jobs, over 20 billion dollars in annual personal income, and over eight billion dollars per year to federal taxes and customs duties. In manufacturing alone, approximately two million people are employed with a payroll of about 65 billion dollars per year.

The efficient movement of goods is essential to the prosperity of California. California's freight transportation system is the lifeline of the state's domestic and international trade, moving almost 640 billion dollars of California's commodities in 1993. This is 180 billion dollars more than the next highest state in terms of commodity shipments. Over 800 million tons of freight is moved out of, into, and within the state every year.

International trade is an important component of California's vibrant economy. International trade amounts to some 260 billion dollars. In 1994, there were over 40 billion dollars in exports to Asia, with Japan, South Korea, and China being the top three export destinations. Califomia's other top export countries are Canada and Mexico. In 1994, California had 16 billion dollars in trade with Canada, and 13.5 billion dollars with Mexico. Other major trading partners include the United Kingdom and Germany. In 1993, more than 60 percent of all of goods produced in California moved to other destinations within the state, worth over 390 billion dollars.

Statewide Transportation System
The state's mature transportation system of roads, rails, airports, and ports serves a diverse range of needs for the movement of goods. The goods movement transportation system provides for the movement of local, regional, interregional, interstate and international commerce on an integrated, multimodal network. This system supports the economy by delivering raw materials, intermediate goods, and finished products to production, consumption, and disposition points. This excellent transportation system and Califomia's robust economy are intricately linked.

Goals and Objectives
California is expected to grow and prosper in the future, if the transportation system can keep up with forecast demands. In the 20-year period from 1992 to 2012, California's population is expected to increase by 40 percent, to almost 44 million people. Consumption of goods will grow by as much as 50 percent and production will expand at almost the same rate. The volume of goods moved is expected to increase by 46 percent. This demands that direct action be taken by the State to maintain and improve the State's goods movement transportation system. The goals and objectives of the strategy set the direction for the specific long-term improvement of the goods movement transportation system. For specific information on our goals, see Appendix F.

Performance Measures
The previous federal transportation bill, ISTEA, and the Clean Air Act as amendment called for the development of performance-based measures to help decision makers better analyze transportation options and select trade off. The main goal was to develop specific, easy to understand and to quantify performance indicators to better inform of the funding and investment choices available for transportation. The Performance Measurement Initiative currently led by the California Department of Transportation (Caltrans), addresses research regarding the applicability of performance indicators to the goods movement market.

- The main finding: it is feasible for the State and regional partners to apply performance measures in a manner that encompasses freight.
- The most applicable outcomes are: safety/security; reliability; mobility/accessibility; equity; economic well-being; and environmental quality
- Indicators identified for the highway and transit modes, in some cases with minor modifications, can address truck and freight rail activity. With some indicators, data limitations will not allow a comprehensive analysis of the freight markets separately (e.g., delay for rural areas)
- Some of the indicators can be used only for monitoring, some only for forecasting, and some for both.

Initially four outcomes were selected as being the most applicable to the goods movement market: *reliability, mobility and accessibility, safety, and equity.* Subsequent interviewees confirmed the adequacy of this selection, and brought up potential benefits in tracking other outcomes, such as *economic well-being and environmental quality.* Other individuals expressed the opinion that all outcomes listed in the performance measure framework can be tied to goods movement at some level.

See Appendix F, page 10 to see a table that summarizes findings, conclusions, and recommendations for each outcome area.

Freight Facilities Factor
The southern California MPO, SCAG, initiated another important effort that was supported by all policy makers in the State during ISTEA reauthorization. It was a proposal to fund goods movement out of the next transportation bill (TEA-21). The proposal was a Freight Facilities Factor, which introduced a funding formula based on each states rail and lane miles, and the value and volume of goods moved. This

was a first time effort to fund goods movement through a formula based process. The result was the direction given to BTS to look into a national database for goods movement, by state by mode and so forth. Once a national uniform reporting system for goods movement related data is in place, funding of goods movement transportation projects equitably amongst the states will become achievable. In the meantime we need to concentrate our efforts at closing the data gaps and outlining the importance goods movement is to the national economy, and the role of transportation, by whichever mode, plays.

Finally, I would like to emphasize the importance of performance measures as an implementation tool for the adopted goods movement strategies. The goals and performance measures recommended by the Statewide Goods Movement Strategy will serve as a measuring tool to gauge the anticipated success. In addition the State has acknowledged the importance of, and vital role for the freight customers, whether in the planning and/or the implementation stages. Caltrans has fully adopted the notion of the importance of the performance measures to ensure the sound investment in goods movement related programs, and that California's transportation system is considered safe, efficient, as well as is a globally competitive economic tool.

Question and Answer Session

Donna, with regard to your freight expert panel—who are they?
Operators and Manufacturers.

Donna, this is a structural question: As you plan, can planning be divided by mode?
(Donna) Yes, in Wisconsin, it is divided by mode. We are integrating some work for the state highway and airport system plan and what we're developing for the rail plan. The multimodal plan will be updated in about two and a half years.

(Dilara) In California, no, we have a statewide transport plan being updated by 2001. It will be larger than previous which was like an executive summary. Now we look at all modes.

(Steve) In Oregon, we had an Oregon transportation plan in the early 1990s. The transportation development division previously included rail and air, but neither of these parts thought they got enough attention and have since split off. Air was unhappy about being part of transportation. Now, they are a separate agency. But we do try to work as closely as we can with them because we do know these people who have split off in these groups. We have good working relationships with them. But I'm not sure about future when those relationships may no longer exist as people retire or leave.

If there was something in reauthorization called freight finance, which projects would be the first using freight finance money?
(Donna) Wisconsin would use it for intermodel facilities. We outlined that in our freight policy plan. It hasn't occurred although we've outlined this. If we had some funding, we could encourage short rail lines to look again at south east Wisconsin and we could generate something and get some truck traffic off the road and expand the intermodel facilities.

(Dilara) In California, we have several projects (the 60 and the 710 corridor). We need to keep moving goods from ports whether or not they are going out of state. We need to relieve these corridors. There is a 710 study taking place. This is a 4.5 million dollars study to relieve what is taking place now. We can't handle the expansion that is going on.)

(Steve) Oregon, depending on the strings attached, would be jockeying for position. Various groups would try to advance on what they think is important. I think a widening project, interchange, or bridge project would be most important.

Has anyone in planning looked at being driven by hubs? Some say that's the most important. But it's a sub-optimal solution. There are better solutions if not being driven by big players maximizing themselves. Does anyone stand up to them and say this doesn't make sense?
(Steve) Those are good points, from my perspective my job is to provide the best information I can about the trade offs. Political people and decision makers decide what they want to do with that information.

Donna, regarding the Translink-21 program: what's a typical type of project?
Many are access roads to industrial parks and major manufacturing complexes. This program has also funded some rail projects but those are far and few between recently. Access roads are the biggest things.

There is a good and economic reason for hubs. There is a concentration in goods and goods movements. The big players are driving it for good economic reasons. For efficiency, what are the state plans to link rural areas—where is the voice for the small shipper, the rural and suburban areas, and the less concentrated transportation modes?
(Donna) In Wisconsin, we've put funding into our short rail lines. They have taken up that gauntlet in terms of working with small communities to move fright rail in Eau Clair, La Cross, and the Fox River Valley. We work not only with paper mills but also with the trucking industry to coordinate efforts. It's not a hub situation, but more of an interconnectivity.

(Dilara) In California, we are conscious of both the big shippers and the small ones who are very important. We've had meetings with them and we work in close partnership with them. But, I'm not an expert. We're conscious of all of the partners.

(Donna) In Wisconsin, we're conscious in our efforts to try to reach out to other parts of the state. We have a statewide advisory committee with the first committee chair from a non-metropolitan area. The current chair is from an out state area and the smallest MPO. The rail division works almost exclusively with short line railroads. Many railroads serve the rural parts of the state. Regarding some of the information in my presentation where I showed congestion, etc. There are some routes that aren't on the state highway system but they are important routes as well.

How you have you done outreach to the private sector? What's your experience with the openness of the private sector?
(Dilara) In California, when we were trying to create a database, it was hard to get information from trucking companies or railroads. No one would open their books—even anonymously. There isn't enough trucking data. It is important. With SIGMAC, you have to have the private partners from the beginning. We can't first create the plan, and then try to partner with them by asking them to open up their pockets. It's important on a local level to speak with them from the beginning. The difference between the public and privates sectors is the private sector is very fast. In the public sector we sit down, have meetings, take minutes, etc. We just don't move very fast. We have to understand the need to change our speed a little bit. That's how to keep the private sector talking to us. We need to build a strong partnership with out hidden agendas for the greater benefit of us all. It may be idealist, but it needs to be that way. Regardless of our jobs, we are all private citizens in the end.

(Donna) In Wisconsin, we're just beginning to get involved with this process, specifically on the railroad passenger side. We've contacted railroad companies, but the information has bee lean. They are opening up a little and providing some data. They are starting to talk to each other then come to us.

(Steve) In Oregon, some private sector companies are involved, but not enough. We're trying to get more in the private sector and get them to work with us, but it's not easy. When we can meet them on their turf and talk about their needs, they are more responsive. But there only a few of us so we don't really have the time or ability to meet like that and try to get the information we need.

Proceedings from Day Two: A Summary of Workshop Issues and Findings

SET III — Panel Summaries

Moderator: **Bruce Hocum**, Rubenstein Freight Consultants

Freight Transportation Policy, Planning, and Programming in Pennsylvania. Then, Now, and Next Steps

Presented By: **John Brown** and **Rand Marshall**, Pennsylvania Department of Transportation

Overview

In order to understand the Pennsylvania Department of Transportation's (PennDOT) freight program it is necessary to understand the events that brought it about and recognize that we view our approach as a "work in progress." Pennsylvania's current approach to freight transportation planning, programming and performance measurement has evolved over the past twenty years and continues to be transformed in response to changes in the transportation industry brought on by the demands of national and world commerce. Our program is to a large degree the product of the attention of informed legislators and elected officials in the Commonwealth and their recognition of the importance of freight transportation in economic growth and social development. Their willingness to enact legislation to support sound freight policies and to appropriate funds for critical freight transportation infrastructure projects has enabled PennDOT to pursue aggressive strategies to incorporate freight issues in our overall transportation planning and programming processes.

Pennsylvania's key geographical location and traditional role as a freight crossroads have also been contributing factors in freight transportation policy and program development. To gain a better perspective, a brief description of Pennsylvania's transportation system is necessary.

- Pennsylvania is known as the Keystone State for a number of reasons, not the least being our importance as a transportation crossroads. Within a 500-mile radius of Harrisburg are approximately 40 percent of the U.S. population, 60 percent of the Canadian population, 45 percent of this country's manufacturers and 41 percent of its domestic trade and service industries, strategically positioning Pennsylvania for its role in transportation and distribution. People and freight moving from the Midwest to Europe, or from the Atlantic coast to places in Tennessee, Kentucky or Missouri are most likely going to cross through Pennsylvania. Nearly 50 percent of the commercial truck traffic in Pennsylvania is moving through the state to outside destinations.
- PennDOT manages the fifth largest state-maintained highway system in the country. PennDOT owns 40,244 miles of state roadway. (Additionally, the Pennsylvania Turnpike Commission owns 505 miles of state roadway.) The PennDOT total includes 5,433 miles of the National Highway System (NHS), including 1,750 miles of Interstate Highways. It is important to note that nationally the NHS represents only four percent of all public road mileage, but it carries 75 percent of the commercial truck traffic. The NHS provides critical links between highways and major ports, airports, rail terminals and truck terminals.
- Pennsylvania ranks first in the nation in the number of operating railroads (70) and fifth in track mileage (5,600 miles). Many of our shippers including coal, chemicals, food products and petroleum products are dependent on our rail network to move their commodities. Railroads play a key role in the economic well being of Pennsylvania.
- In aviation Pennsylvania has a system of approximately 150 airports which are open for public use in Pennsylvania. The aviation system supports the high volume movement of both passengers and airfreight regionally, nationally and internationally. This system includes major international passenger and freight terminals in Philadelphia, Pittsburgh and Harrisburg.

- PennDOT's involvement in water ports, inland waterways and maritime interests are accomplished through coordination with PennPorts, an office of the Pennsylvania Department of Community and Economic Development (DCED), who provides for programs relative to ports and waterways. PennDOT does, however, address access issues concerning all the modes of transportation including waterways. Pennsylvania's ports include the Port of Pittsburgh, the number one ranked inland waterway port in the country. Pittsburgh is also ranked as the 13th busiest port overall in the Nation, in terms of tonnage moved. The Port of Philadelphia is a deep water ocean terminal, which is ranked at 18th nationally in volume of cargo, and additionally we have the Great Lakes Port of Erie. Pennsylvania is the only state with all three of these types of port facilities: ocean, lake and gland waterway.

As an organization, PennDOT's work is accomplished by 11,880 state employees supported by contractors and consultants, and suppliers. Within PennDOT's Central Office there are six Deputy Secretaries including: Planning, Highway Administration, Local and Area Transportation (transit), Safety (driver and vehicle services), Administration, and Aviation and Rail. PennDOT has 11 engineering district offices throughout the 52 county maintenance offices.

The *Rail Freight Preservation and Improvement Act* established the Rail Freight Advisory Committee. Besides the Pennsylvania House and Senate Transportation Committee Majority and Minority Chairmen, the following areas are represented on the Rail Freight Advisory Committee: two representatives of Class 1 railroad companies; three representatives of regional/short line operation; six representatives of rail shippers.

In addition to specific rail freight, project performance measures the PennPlan provides a number of freight-related measures to be used to support the long-range plan objectives. Some freight-related items are as follows:

- Reduce the number of fatalities involving heavy trucks by 15 percent by 2004.
- In cooperation with commercial railroads, develop 100 percent double stack clearance in all strategic freight rail corridors by July 31, 2003.
- Develop and adopt a state airport system plan (which includes air freight issues) by December 31, 2001.
- Support timely completion of port channel maintenance projects so that impediments to freight shipping are eliminated by 2007.
- Provide satisfactory access to all rail intermodal facilities by December 31, 2010.
- In cooperation with private rail interests, invest in and complete signal upgrade projects in strategic rail corridors by 2010.
- Eliminate at-grand crossings in strategic rail corridors by July 31, 2015.

Summary

Addressing freight transportation issues is a concern of growing proportions in Pennsylvania. As noted at the outset of this discussion our current policies, plans and programming have evolved over the past 20 years, driven in large part by a series of defining events. It is recognized that the way we address freight transportation, multi-modal and intermodal issues in our transportation improvements programs must continue to be refined.

Freight shippers are major transportation users and vital to the nation's economic competitiveness. Moving freight in and out of U.S. seaports will grow about 6 percent annually and double or triple in total volume by 2020. The current surface transportation network does not allow freight to move easily between highway, rail, air, and maritime transport. In addition, the public sector often does not understand the needs and problems of moving freight nationally or regionally. Freight and intermodal problems require more attention by transportation agencies, particularly in statewide planning. Freight stakeholders must become full partners in statewide, metropolitan and rural planning. Facilitating freight users' and

suppliers' involvement will enhance the nation's ability to move freight seamlessly across different transportation systems

Our planning efforts must consider the continued expansion of interstate trade corridors between and into our metropolitan areas that serve our international trading needs and extend our international competitiveness. Major choke points at our ports of entry and in and around metropolitan areas need to be addressed.

In this vein we are possibly facing our next "defining moment" in freight transportation with the federal reauthorization of the Surface Transportation Board, legislation to create an alternative funding source for the Harbor Maintenance Tax, and perhaps most importantly the reauthorization of TEA-2 1 by October 1, 2003. There is the need for public/private partnering in the development of legislative initiatives and proposals for the Congress to consider regarding freight transportation needs and programs. Freight transportation needs must be addressed in terms of dedicated funding streams, eligibility requirements for Federal Highway Administration programmatic funding, continued eligibility for discretionary program funding such as the Borders and Corridors Program and added flexibility in the establishment of public/private partnerships. Bigger trucks and heavier rail car issues and impacts need to be carefully addressed and decisions made regarding how fragile state highway and rail infrastructure can be maintained and still accommodate larger vehicles as a means to increase freight capacity. The possible establishment of freight corridor programs and multi-modal funding options should be considered.

Whatever the arguments made or approaches taken in shaping our individual positions on the reauthorization of TEA-21, it is essential that freight transportation issues be a key, ever present discussion point. If we are to be competitive internationally and provide the transportation infrastructure that will be necessary to accommodate the projected vast increases in the volumes of freight to be shipped in the future we must find a way to take a multi-modal approach to transportation planning, programming and project development.

Freight Transportation Policy, Planning, Programs, and Performance Measures (in Texas)

Presented by: **Jack Foster**, Texas Department of Transportation

Overview

Earlier this year, the Federal Highway Administration, the Minnesota Department of Transportation (MnDOT) and the University of Minnesota Center for Transportation Studies (CTS) asked the Texas Department of Transportation (TxDOT) to participate in their National Freight Transportation Workshop. TxDOT has prepared this paper in response to their request. Accordingly, the report covers select activities that are currently underway or were recently completed as we attempt to address the three questions posed by the workshop hosts:

1) How does the state approach freight transportation planning, policy and programming?

2) How are private industry and their needs incorporated into decision making for freight transportation improvements? What is successful and what isn't?

3) What has been your experience with performance measures, what do you use, and what do you think are the most successful approaches to freight performance measures?

Specifically, this paper details the activities that focus on freight transportation within the following section headings: Texas Transportation Plan, Studies and Reports, and the Statewide Analysis Model.

Texas Transportation Plan
Although TxDOT does not currently have a plan that specifically addresses freight transportation, it is addressed in the Texas Transportation Plan (TxDOT's multimodal statewide plan adopted in 1994). Section III under the heading of Freight and Passenger Rail (pp. 80–85) describes the existing freight rail facilities and identifies important freight rail issues. Highway freight issues are briefly discussed throughout the plan under the categories of commercial or truck traffic. Performance indicators for highways and rail as modes are located in the Modal Profiles; however, TxDOT does not currently have a freight transportation policy in place.

Several people were involved in the development of the Texas Transportation Plan. Six policy papers were specifically prepared by individual committees to support the development of the final policy document. The committees included representatives from private industry. The six committees were: Economic Development Committee, Mobility and Accessibility Committee, Interjurisdictional Coordination and Cooperation Committee, International Trade Committee, Finance Committee, and Corridor Preservation Committee.

The Transportation Systems Planning section of TxDOT's Transportation Planning and Programming Division is currently under contract with Parsons Brinckerhoff Quade & Douglas, Inc. (PBQ&D) to update the Texas Transportation Plan. Under the current scope of work, PBQ&D will analyze transportation needs that include the existing system and current trends, as well as future demand. From this analysis, the consultant will address future options, proposed policies, future funding, and provide TxDOT with a systems evaluation for both freight and passenger facilities. This update process is scheduled to conclude in November of 2001.

TxDOT has not defined specific performance measures for freight movement. PBQ&D will develop performance measures for the implementation of goals and polices in the plan, taking into consideration the seven planning factors stated in TEA-21. These performance measures are not, however, being developed specifically for freight movement, but for the entire plan and the statewide transportation system in general.

TxDOT has conducted or participated in a number of studies that have a strong freight transportation component. See Appendix H for summaries of selected studies. The summaries provide a review of an important report that similarly deals with freight transportation, but focus on the U.S.-Mexico border region.

Statewide Analysis Model
Perhaps the single most important TxDOT initiative related to freight transportation is the development of the Statewide Analysis Model (SAM). in March 2000, TxDOT contracted with Alliance Engineering for services to develop a statewide, multi-modal passenger and commodity flow freight model. TxDOT envisions an expansion of the geographic coverage of its travel demand modeling with a statewide model, which will allow for the consideration of different passenger and freight modes and the interaction between modes.

The SAM is groundbreaking in many respects in that it is TxDOT's: first multi-modal model; first freight model; first model completely in TransCAD format; and first model with statewide coverage. It is expected that this model will launch a continuing series of models to be developed and enhanced in the coming years. The model will bring TxDOT up to the state-of-the-practice for statewide, multi-modal passenger and freight modeling.

The SAM will be integrated with the 25 Texas urban area models, and will provide consistent and accurate analysis of the following general types of projects:

- forecasting accurate statewide traffic volumes by mode for passenger and freight;

- forecasting mode shifts for passenger and freight;
- analyzing state-level, multi-modal alternatives for each mode that should be accurate enough to support analysis for project selection;
- analyzing concurrent modal and multi-modal network alternatives; and
- analyzing the relative impacts of domestic and through traffic for passenger and freight at the statewide and at individual urban area levels.

The passenger component will, at a minimum, model cars and rail. The freight component will, at a minimum, model trucks, rail, truck/rail, rail/seaport and truck/seaport intermodal connections. Provisions will be made for future extension of the model to include other passenger and freight modes without requiring significant restructuring.

Freight commodities will include manufactured and non-manufactured goods, empty trailers and trucks, and permit-issued overweight trucks. The model will aggregate commodities into commodity groups, and maintain the capability of editing the base data sets to define new commodity groups.

The freight model will output trips and tons per commodity group, and will have the capability of assigning loads to various types of trailers and containers. Population forecasts will use the Texas State Data Center forecasts for each county as a control total. Employment forecasts will be compatible with the scenarios and geography used in the population forecasts.

The department will use Reebie's 1996 TRANSEARCH multi-modal freight database to develop the statewide model freight flows. The passenger and freight models will be integrated with each other and with existing urban models to the extent that it is practical. Integration is defined in terms of input and output data set formats, model components and tools, and operation. The statewide model will operate as a suite of related models with a common operating interface. The preferred integration is to have hot links between operating modules, common analysis tools and procedures, seamless access to all data sets with common analysis tools, and consistent zone structures.

Options for using the statewide analysis model in planning processes will be developed and evaluated. Upon its completion in December 2001, TxDOT will implement the SAM as part of the statewide planning process in a variety of ways. Implementation scenarios will depend on the trade-off between resources committed to operation versus response time and accuracy of the process. Analysis of the various scenarios will allow TxDOT to determine relative budgets and to develop an optimum scenario for implementing the models.

Summary

To summarize, let us revisit the three original questions.

1) How does the state approach freight transportation planning, policy and programming?

2) How are private industry and their needs incorporated into decision making for freight transportation improvements? What is successful and what isn't?

3) What has been your experience with performance measures, what do you use, and what do you think are the most successful approaches to freight performance measures?

While TxDOT does not have an established freight transportation policy, we consider freight transportation issues through a wide range of activities: multi-state studies, corridor studies, and research. We successfully included freight stakeholders in the development of the Texas Transportation Plan, the state's multimodal transportation policy document, and continue to seek their participation in all matters involving freight. Although we have limited experience with freight performance measures, we foresee

having a better understanding of how to best select and use performance measures after we complete both the Texas Transportation Plan update and the Statewide Analysis Model.

Question and Answer Session

Is there any incentive to ask shippers to divert shipments away from the Mexico window to different ports of entry?
(Jack) No. We don't advocate one port over another. We're trying to make improvements at each one, and we've done some studies to help determine where to improve and how to improve the different ports. We're don't promote one port over another. It's very competitive along the borders. For example, even though it might be congested, the Laredo port doesn't want traffic diverted because it helps their local economy.

If we consider the long distance international corridors and look at what you said about Austin, Texas, and the mammoth volumes moved through there, are we committed to having the system always go with the unit of transportation? Or, can we think in terms other than trucks and trains and the use of conveyor belts, pneumatic tubes, etc.?
(Jack) We've heard of some of these alternatives, and we will try to consider technological improvements in our long-range plans.

Set IV — Panel Summaries

Moderator: **Tim Penny**, Himle Horner, Inc., Chair, Minnesota Freight Advisory Committee

Tim Penny: In Minnesota, we need to look at all modes of transportation and look at those communities that ere land locked and identify certain institutions in those communities and figure out how to beef-up the road systems to these towns. As Chair of the railroad subcommittee, I had a lot to do with rail policy. We created the regional rail authority; if we lost a rail line, communities could ban together and use them for right away. We allow short line rail operators to come in. We established a rail improvement program to partner with local shippers and local governments, to rehabilitate local rail lines. We created a rail bonding program which required a constitutional amendment. That was also the time that the Minnesota legislature was approving port authorities.

The MFAC concept has been fully embraced by our new commissioner, El Tinklenberg, and has been around for two years. All modes are reflected and the committee has a diverse array of companies and shippers, etc., represented.

As you all know, federal transportation law, in the last two cycles, has raised the bar indicting that more intermodal planning be done and more rail be brought in. We've funded a major study of freight flows in Minnesota to drive some of the planning in our long-range plan. In Minnesota, we're trying to be more immediate in operational decisions year to year. Our next task is to take this down to the planning level in the regions.

Freight Isn't A Four-Letter Word: Innovative Modal Transportation Planning at Mn/DOT Metropolitan Division

Presented by: **Nancy Melvin**, Director, Modal Planning, Minnesota Department of Transportation

Overview

Our Journey to Discovery

I believe one of our richest endowments is imagination. In 1995, I came to the management at Mn/DOT Metro Division with an idea, a very good concept, one that I felt would position the division with the mainstream...namely logistics and the relationship with transportation and commerce. I maintained that if government truly came to understand those whom it was established to serve, it would deliver better products and services and eventually the barriers would break down and a trust-based relationship would evolve. I proved that customers are willing to invest time and energy in working with government; if they are convinced it is a value-added experience.

The genesis of the idea began by visualizing a better future and going after it. As a planner I know the three key characteristics of a solid plan. First, it must involve the future. Second, it must involve action. Third, there is an element of personal or organizational identification or causation.

The future looks tough by any standard, for those of us in transportation. Consider the following: aging infrastructure, congestion and inadequate funding, new transit demands, increased freight transportation demands (highway linkage to air, intermodal, pipeline, rail terminal, water ports) and highway linkage to regional trade centers. Bottlenecks—the fix and the price tag. All this results in very difficult investment decisions involving trade-offs in investment levels, design and scope of projects.

Yet another aspect of this "transportation process" is the broad approval authority by many local and state agencies over transportation projects. The *problem statement is* simple, "How can we (MN/DOT Metro Division) get a finger on the pulse of this important customer group (shippers, carriers, brokers, industry leaders) and incorporate their needs into our project development process?" The obvious next question for those of us at the state level is, "How can we obtain and retain the support and participation of our

transportation partners (local governments, transit agencies, regional agencies, etc.) in the project development process?"

The *goal setting* process was relatively simple; the process to achieve success is (note the use of the present tense in this sentence, because this is a work in progress) complex. Our vision was (and still is) to identify and resolve impediments to freight movement to and through the Twin Cities Metropolitan Area (eight county region). In order to attain such a lofty goal we needed to identify our stakeholders and quantify *(data collection)* the situation and analyze the findings. As importantly, we needed to share the learning with customers, colleagues and partners.

Summary

The journey to discovery taught us about the significance of supply chain logistics and how dependent our customers are on the transportation system. This exercise helped us understand the issues facing business and gave us the opportunity to share the challenges we face in planning and operating the transportation infrastructure.

Based on the insight we gained through our outreach effort, we have slightly ***refined*** *"*our goal." Originally our primary focus was freight transportation, incorporating all modes and travelways. As time passed it became obvious to us that it was impossible and impractical to try to isolate and study freight without investigating and planning for passenger transport. Hence our goal now reads, "To identify and resolve impediments to freight and passenger movement to and through the Twin Cities Metropolitan Area (eight county region)."

Our outreach efforts armed us with "new" information about our customers and our transportation partners. Our next task was to figure out a way to bring this new intelligence about freight and passenger movement into the transportation development process in a manner that would renovate and invigorate the overall transportation system. We wanted to present the case for multi-modal transportation planning.

Planning-Performance Measurement

By the dawn of the new millennium, we had advanced our work in the development of a strategic modal planning tool that provides a customer-focused framework for investment decision-making. The approach quantifies transportation assets in an economic context. It also pinpoints "hot spots" between highways, airport access/egress, intermodal terminals, pipelines, rail grade crossings and terminals, waterways and ports. The strategy employs both an engineering and economic perspective.

There are several dimensions to modal planning, and unlike the highway system, is under the ownership or administration of private enterprise. Adding to the complexity of the process is the broad approval authority by many local and state agencies over our transportation projects. Investment decisions are difficult, with many trade-offs in investment levels, project scope and design. Enter into the fray, modal planning...what is it and how do we integrate it into the highway project development process? We offer our approach as a work in progress, as stated in Appendix I.

The next step incorporates *performance-based measures* that guide us in the next steps of the analysis process. We developed a set of measures that provide consistent data sets for freight and passenger study. We are able to analyze highway corridors for freight, for passenger, and in composite, to help planners focus on specific measures and conduct other investigations to gain a system-perspective.

At this point the planner has a fundamental understanding of the highway corridor, the next step however begins to target the complex and sensitive relationship between the highway and other travelways. Planners are challenged to ask questions about these multi-modal relationships, such as: What is the impact of an international airport on the highways adjacent to it? What is the impact of a regional-size airport on the highways? What are the freight and passenger traffic patterns from the airport onto the

adjacent highways? Will change to any of the existing travelways or modes of transportation impact the highways adjacent to the airport, e.g. adding light rail transit to the passenger mode mix? How does the railroad impact barge traffic in the community? Can transit have a positive impact on this highway?

Our staff believes that *if there is a potential impact, there is a potential opportunity* to work together to deal with it. If all of us make a conscious decision to own the problem, we can own the solution! For example:

- Grants, unavailable to highways, but available for transit and rail
- Matching funds, soft and hard money, from local government, through long term CIP
- Private sector participation, through dedicated right-of-way or cash, TDM strategies

Our journey continued. In April I was invited by FHWA, Office of Freight Management and Operations, to address the staff on the modal planning concept and get their feedback on the direction we are taking.

The FHWA encouraged MN/DOTMetro Division to conduct case studies demonstrating analytical tools, results, and recommendations. We are in the midst of the most challenging phase of the journey to implementation, namely the integration and formalization of modal planning products and services with other transportation and project development functions. Three significant activities are underway to begin the incorporation and sophistication of modal planning into our business cycle. One is the three-year plan entitled "Transportation System Plan" or TSP; the second is the Interregional Corridors, or IRC's; and the third is Bottleneck removal.

Our Journey to Implementation
In the next few months it is our goal to have the process "blessed" by the management team, understood by colleagues, industry, government partners and elected officials. As we move forward, our goal is to learn and share along the way. The insight we gain in what works and what doesn't in getting our Arms" around modal planning will help us address the challenges we face as state departments of transportation in providing for an efficient, safe and productive system.

Statewide Freight Planning in Minnesota: An Evolving Partnership with the Shipping Community in Minnesota

Presented by: **Mark Berndt**, Mn/DOT, Office of Freight, Railroads, and Waterways

Overview

Historically, the Minnesota Department of Transportation (Mn/DOT) has dealt with freight issues within the context of individual modes. And, as is common in the U.S., highways have dominated Mn/DOT’s agenda for goods movements for many decades. During the 1980's and early 90's, government-sponsored advisory committees comprised of trucking industry representatives were used by Mn/DOT to get reaction to legislative proposals and regulatory policy, discuss infrastructure concerns, and explore ways to provide better customer service. Motor carrier advisory groups however were not key inputs to the overall transportation planning and investment process.

Before discussing planning initiatives specific to freight, it may be helpful to first provide an overview of the broader transportation planning process that exists today in Mn/DOT. The process begins with Mn/DOT’s Strategic Plan. Along with a vision and mission, the Strategic Plan establishes three strategic directions:

- Safeguard what exists: Mn/DOT’s strongest commitment is to existing transportation systems.
- Make the network operate better: Mn/DOT will help increase Minnesota's economic competitiveness by improving transportation systems.
- Make Mn/DOT operate better: Mn/DOT will continuously improve management of its resources.

From Mn/DOT's Strategic Directions flow four Strategic Objectives that guide planning and policy decisions. These Strategic Objectives are provided here in an abbreviated format:

- multimodal transportation: to increase travel options that enhance economic vitality of the state; provide safe, timely, and efficient movement of people and goods.
- delivering programs:
    - highway construction: to modernize, streamline, and expedite the system by which construction projects are processed from programming through completion of construction.
    - highway maintenance: to provide maintenance services that are customer driven, competitive, and demonstrate national leadership in technology, research, and performance measurement.
    - modal programs system support and promotion: to ensure that programs focused on transit, air, rail, waterways, and other functions continue to promote and support the mission of developing a coordinated transportation network.

- Interregional Corridors: To ensure that Minnesota corridors of statewide significance link with Regional Trade Centers to a) enhance the economic vitality of the state; b) provide a base level of access to all Regional Trade Centers; and c) provide safe, timely, and efficient movement of people and goods.

- Information: To ensure Mn/DOT is a trusted source of transportation information essential for decision-making by a variety of customers, including internal and external, public, and private.

The Minnesota Statewide Transportation Plan

Mn/DOT produced the first "Minnesota Statewide Transportation Plan" in 1997. An addendum to the 1997 plan; "Moving Minnesota from 2000 to 2020" was published in January 2000 (this document can be viewed online at http://www.oim.dot.state.mn.us/PDPA/Plan.html). The next update to the State Plan will occur in 2003. Statewide Transportation Plans are policy documents that establish decision frameworks that guide long range planning activities. The Statewide Plan does not recommend specific investments, but rather establishes the rules that are to be used by MN/DOT districts, metropolitan planning organizations (MPOs) and other transportation entities in developing specific project or investment plans. The most recent "Moving Minnesota" plan established the following investment principles to be used in the development of district plans:

- focus on system performance
- ensure economic efficiency
- support societal goals

An interim update to the State Transportation Plan will occur in 2003 and will report on progress made toward addressing two of Mn/DOT's strategic objectives: 1) Multimodal transportation and 2) Interregional Corridors.

Each district works with Area Transportation Partnerships (ATPs) and/or Metropolitan Planning Organizations (MPOs) in producing district plans. Each of Mn/DOT's seven out state districts and the Metropolitan Division have established ATP's comprised of representatives from metropolitan, regional, county, city, and Indian tribal governments in addition to other transportation interests. ATPs begin with a regional funding "target" and then integrate state and local priorities. The outcome of the ATP process is a recommendation for district transportation investments for a three-year transportation improvement program (TIP). In urban areas of 50,000 people or more, Metropolitan Planning Organizations (MPOs) have been established as required by federal law. MPOs are responsible for coordinating transportation planning activities and preparing Transportation Improvement Programs (TIPs) for their areas.

Each district now has a long-range plan that gives future direction for the highway system. The next step will be to update District plans by incorporating modal considerations and developing ways to create interrelated transportation systems. The 2003 update will incorporate these plans to produce a multimodal transportation plan.

Getting Freight on the Agenda
Following the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, senior Mn/DOT management desired a more proactive, multi-modal approach to freight transportation issues. In 1994 the department formed a Freight Policy Team that met several times before recommending the creation of a Freight Policy Section in the Office of Research Services. In 1995 this Freight Policy Section moved briefly to the Office of Investment Management before officially announcing a "Freight Logistics Initiative" in 1996. With the announcement the Office of Railroads and Waterways added "Freight" to its name, and the Freight Section found its current home base. The new initiative deemed its mission around bringing freight into the mainstream of Mn/DOT's planning and investment process: "To insure the incorporation of freight transportation needs in Mn/DOT's planning, development and operations to optimize transportation investments."

After an uneasy start it was apparent that freight movements and the demands created by modern supply chain logistics had become a focal point of the department's vision for the future of Minnesota's transportation system. Since its inception the MN/DOT freight initiative has been about shippers - i.e. businesses reliant on transportation systems to access raw materials and get finished products to consumer markets. Modal operators and third party modal integrators who provide services to shippers are also significant customer groups of freight initiative activities.

In January 1998, Mn/DOT hosted "Breaking the Barriers" a workshop to identify public and private actions to enhance freight transportation productivity. The workshop was attended by shippers from around Minnesota and laid the groundwork for a continuing dialogue with many of the state's major businesses.

Conclusions
The Mn/DOT Freight Initiative has achieved some early success in partnering with the business community through the formation of the Minnesota Freight Advisory Committee, one of the few statewide shipper advisory groups currently in the U.S. MN/DOT has also laid the groundwork for integrating freight into the planning process by completing a Statewide Freight Flows Study and developing freight performance measures, however challenges remain in coordinating efforts and getting buy-in at the district level. Recently the department created a new position of Modal Operations Director that should assist in coordinating modal efforts to support district planning. Significant challenges also exist in developing and maintaining the data resources that will enable truly integrated multimodal freight planning.

Freight Mobility: Some Lessons and Observations from a State Perspective
Presented by: **Alan E. Harger**, Transportation Economic Partnerships Office, Washington Department of Transportation

Overview
During the mid and late 1990s, a number of state and regional transportation agencies established new activities to address the movement of freight. Rising traffic congestion was adversely impacting truck freight movement within many metropolitan areas and contributing to delays in the movement of commodities from rural producers to urban transshipment and distribution centers. An expanding national economy was creating demand for imports and domestic products that was straining the landside

connections at the nation's marine and air freight gateways as well as at international border crossings. Growing rail freight volumes, the resurgence of rail passenger service in some parts of the country and mainline rail mergers were leading to roadway/railway conflicts that many local communities found unacceptable. Furthermore, federal funding for freight projects was available through the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and later through the Transportation Equity Act for the 21st Century (TEA-21).

The vocabulary of transportation policy discussions changed as state departments of transportation (DOTs) began to focus on freight mobility as an issue area. Transit, high occupancy vehicle lanes, light rail, commuter rail, pedestrian walkways, bicycles lanes and other personal mobility issues continued to be discussed, of course, but they were no longer "Topic A." The transportation policy lexicon began to include phases such as just in time, throughput, delivery variation, intermodal hubs, load centers, on-dock rail, regional supply chains, logistic networks, post-Panamax and container re-positioning.

State DOTs acquired a new set of expectations along with the new vocabulary and the growing focus on freight. Three of the expectations seem to be common to most states. At the risk of overstatement, state DOTs were expected to address freight issues in their decision-making and funding rather than neglect or pass over freight problems. Second, state DOTs were to assume the leadership role in freight partnerships involving private freight interests, the federal government, regional transportation organizations and local communities. Finally, state DOTs were expected to develop long-term plans for improving freight mobility and then secure the public-private funding to implement those plans.

The Washington State Department of Transportation (WSDOT) has not been immune from these expectations. Nor has the department avoided the inevitable mix-steps and disappointments that any early initiator must surmount. Dealing with these expectations has been and will continue to be a learning experience for WSDOT. Some of the lessons being learned may have applicability for others. "Lessons being learned" is the operative phrase, because state transportation agencies, including WSDOT, enter a new domain with freight mobility, one far different from that to which they are accustomed. The lessons being learned and examples that follow are presented from the perspective of one state DOT to another. Other institutions, including private sector freight interests, regional transportation organizations and local government, hopefully will benefit as well from the experiences of WSDOT and the state of Washington.

Doing More Than Most Realize

State DOTs are probably doing more through their regular programs to address freight issues than either they or others realize. This has been the experience of WSDOT when the department has explained the freight-related components of its programs and activities to freight shippers, private carriers, economic development groups and local governments. More telling, WSDOT continues to be reminded of this lesson with some transportation organizations with which the agency works closely.

Share The Lead and Be A Partner

The recognized need for better freight mobility provides some of the most significant opportunities for developing transportation improvements through public-private partnerships. In the early 1990s, many in Washington State viewed public/private partnerships for freight as a new concept. In reality, many of Washington's public ports had been engaged in public-private partnerships for years at the local and regional level. What was new was the widespread recognition that the state, and particularly WSDOT, could be an important partner in freight mobility. With this recognition came the expectation that the state should assume the leadership role in freight partnerships involving the private sector and other public institutions.

From WSDOT's experience, state DOTs first should be prepared to share the leadership role and be a contributing partner rather than to assume the leadership role by design or default.

Summary

Realities on the Learning Curve

One lesson that WSDOT continues to learn as it moves along the freight learning curve is that the realities of working with the private sector are part of the agency's business environment. Although the outline of lessons that should be learned by state DOTs remains under development, three realities of working with the private sector on freight issues are highlighted here. First, moving freight is a private sector activity that is and will continue to be conducted by private carriers using public infrastructure in response to changing market conditions. Second, true partnerships between the public and private sectors, and for that matter even among public institutions, are more than the money. Finally, despite the very real divergence between public sector planning and private sector planning, there appears to be some common ground where success is possible.

A Private Sector Activity

Freight in the United States moves primarily by private sector carrier. This truism is recited to excess at almost every meeting of public sector transportation officials that addresses freight. A more important aspect to acknowledge, and then incorporate into public sector planning and decision-making, is that freight moves by the summation of many private sector decisions based on market and economic realities rather than technical, engineering-based models. A mainline railroad executive addressing a public meeting on rail crossings once stated that "freight moves where freight wants to move." Freight mobility depends on public infrastructure, but public infrastructure is not a sufficient condition by itself to justify changes in freight movement. Public infrastructure may be necessary most of the time, but it is not sufficient. Most states, and many counties and cities, can offer examples, generally in other jurisdictions, of where "build it and they will come" did not produce the desired results. Freight is not a field of dreams. Perhaps another way saying this is that freight reacts to market pull rather than infrastructure push.

True Partnerships

A second reality is that true partnerships between the public and private sectors are more than the money. State DOTs receive federal funds to build state transportation projects, and many DOTs provide state funds to local jurisdictions to build local transportation projects. Providing federal or state funds to another institution, be it a local authority, port or even the state itself, to build a transportation improvement is not a partnership. More than likely it is a contract, grant or allocation relationship.

True partnerships are the mutual sharing of the risks, responsibilities and cost of a project as well as the project's rewards and benefits. In true partnerships, the risks, responsibilities and costs are based first on the rewards and benefits to the partnering institutions, and second on public policy considerations. Public-private partnerships are best negotiated in a private forum with final approval in a public forum. This is one area in which the private sector needs to understand and accept an inherent requirement of working with the public sector.

One framework that may prove helpful to state DOTs developing partnerships with other institutions is based on a series of questions that a public institution might ask as it seeks to enter into a partnership. The general approach is iterative, starting with a descriptive analysis and moving toward more quantitative methods in subsequent iterations.

A starting point for developing a partnership is to ask the question: What are the benefits of the project and what institutions will benefit? An institution in this context can be a private firm, a group of firms, a local community, or even a larger regional, state or national "community." Starting with the lowest level institutions and working up to larger institutions may be helpful. Another potential aid is attributing the benefits for certain groups to recognized institutions.

With an understanding of the institutional benefits, the second question is: What does the distribution of project benefits to various institutions imply about the distribution of project risks, responsibilities and costs? In other words, based solely on the initial benefit distribution, what institutions could be expected to assume some level of risk, responsibility and/or costs? From a practical perspective, taxes deserve careful consideration. Tax revenues are payments for services and only become a benefit if tax revenues exceed the cost of services provided. Also, tax revenues dedicated to bond repayment may entail foregone opportunity costs, depending on the length of the repayment period.

Public policy issues are introduced in the third step and may modify the initial distribution of project risks, responsibilities and costs to various institutions. For example, many states have rural economic development policies under which the state assumes certain development costs for smaller communities in high unemployment areas. The application of policy considerations also varies by level of government. State policies are generally silent, other things being equal, when two in-state communities are competing to attract an out-of-state firm. For the individual communities, local policies will be applied to offset some of the firm's entry costs, but not any of the state costs.

As a fourth step, the starting point for negotiations, or the next stage of negotiations, is determined along with the boundaries of the negotiation process. What issues will be on the table or off the table? What issues will be "push backs" and why? Under what circumstances is the public entity prepared to walk away from the partnership negotiations? One circumstance should be when the public benefits do not justify the risks, responsibilities and costs that the public sector assumes. In the public sector, this is far easier to say than to do. Because of this, the private sector generally has an edge in negotiations with the public sector.

Freight Planning

A third reality of state DOTs working with the private sector is the divergence between public sector planning and private sector pluming. Many state DOTs develop planning documents with long time horizons, broad transportation scope and statewide scale. The Washington Transportation Plan (WTP) provides a 20-year view, addresses all modes of transportation, and is attempting to integrate, at least in the current update under development, regional and even some local transportation plans into the overall statewide plan. Yet, despite the time horizon, scope and scale of the WTP, Washington State implements its transportation improvements based on a two-year budget cycle that is often modified each year. The passage of I-695 is a painful case in point. In contrast, private sector firms develop strategic business plans that look out five years at best, capital investment plans that rarely go beyond three years, and operating plans for the quarter, half-year or year. Despite the divergence, there can be some common ground where joint public-private planning can be successful.

Based on WSDOT's experience, as well as discussions with other state DOTs, some of the most successful public/private freight planning is occurring at the MPO or sub-state regional level. These planning efforts appear to share three elements in terms of scope, scale and time horizon, along with a fourth commonality. First, the planning focuses exclusively or primarily on freight issues, with other transportation issues addressed by other organizational groups. This keeps the focus on freight and minimizes other complicating transportation issues. Second, the scale of the planning efforts is constrained to an area with identifiable problems and identifiable resources. The public and private participants have a common, regional basis for planning that is human-scale. Third, the planning time horizon is on the order of two to five years, and remains flexible, depending on the issue at hand. Finally, these planning efforts represent workable partnerships that stress candor among the participants.

This paper opened with the acknowledgement that dealing with the expectations placed upon WSDOT in the new era of freight has been and will continue to be a learning experience for the department. Hopefully, this discussion of the lessons being learned by WSDOT and the experiences of Washington State will benefit state DOTs as well as the public institutions and private freight interests with which

they work. Freight is a new domain for state transportation agencies, and it is too important to be left undone.

An Overview of Transportation Infrastructure and Services in the Northern Great Plains Region

Presented by: **Jerry Nagel**, Northern Great Plains Initiative for Rural Development

Overview

Transportation Infrastructure

Increasing globalization of the world's economy, opportunities for expanded export of food products, and Congressional passage and approval of the North American Free Trade Agreement place the heartland of North America within a new era as a geographic crossroads for international trade. In order to fully participate in a growing and changing global economy the Northern Great Plains region will need to do more than just identify and develop new export markets for its manufactured goods, shift its agricultural export focus from export of bulk commodities toward export of food products, and provide expanded trade development services for rural businesses. The region will need to actively work to ensure that its transportation infrastructure is capable of serving the international trade and transportation needs of the region.

With this in mind, the Northern Great Plains Rural Development Commission established a Transportation Infrastructure Work Group to look specifically at the infrastructure needs of the region.
Surface Transportation - Moving Freight

The Northern Great Plains states can be characterized as a largely rural, heavily agricultural area, with low population and high exports of bulk and manufactured products. Thus, transportation capacity and costs are central to efforts to promote rural economic development in this five-state region.
Railroads and motor carriage are the backbone of the freight transportation system in the five-state area. Barges are crucial to Iowa and Minnesota and provide price and capacity competition to railroads; this competition extends into Nebraska and the Dakotas.

Railroads

The railroad system in the five-state area has changed dramatically in the past 25 years. Since 1958, Class I railroads have reduced the miles they operate in the region by about 50 percent. Over a 25-year period, the largest reductions were in South Dakota and Iowa. Most of the reduced miles were branch lines; however, a few mainlines were abandoned or sold to short line railroads. Some branch lines were also sold to short line and regional railroads and a high percent of these short lines continue to be operated. Nevertheless, most of the 15,762 miles were simply abandoned, then torn up and are not likely to be replaced.

A second major change in the railroad system has been the reduction in the number of Class I railroad companies. In 1969, there were 77 Class I railroad companies; by 1995, only nine companies remained. This concentration of the railroad industry into a small number of companies has both negative and positive impacts on economic development

A third major trend in the railroad industry is the dramatic shift to unit trains. A *very* large percentage of grain, fertilizer, coal and container shipments now move on unit trains. The cost and rates of unit train shipments are sharply lower than for single-car and small multiple-car shipments.

A fourth major trend in railroading is the dramatic increase in the use of double stack container trains. A double stack train consists of wells—articulated railroad cars—each of which hauls two containers, one

stacked on top of the other. The major advantage of double stack container trains is a substantial reduction in the cost of shipping containers, compared to the cost of conventional piggyback or truck. These cost reductions range from 20 to 40 percent, depending on the length of haul and quantity shipped. The disadvantage of double stacks is that they require a large volume of containers to achieve the potential cost economies.

The fifth major trend in railroads is the shift to larger and heavier cars. As the number of these heavy cars increase, this shift will eventually create major problems for branch lines with bridges and rail that cannot safely carry these heavy weights.

A sixth major trend among the major grain carrying railroads—all of which operate in the five-state area—is the return of grain car shortages. These shortages occurred frequently during the 1970s and have become a seasonal problem since the late 1980s. The most serious recent shortage occurred during the Fall of 1995 and the Winter of 1996.

Barges

Barges haul over half of all U.S. grain shipments to export ports. In 1991, a total of 50 million tons of grain moved southbound on the Mississippi River System. Half of this grain—25 million tons—originated on the Upper Mississippi River (UMR). This makes the UMR the dominant river for originating barge grain traffic for export. Moreover, the UMR originates almost as much grain for exports as all the railroads combined.

The U.S. Army Corps of Engineers (Corps) projects UMR barge traffic to double between 1987 and 2020. Most of the projected increase in barge traffic is for agricultural products, principally grains, but also includes processed grain products and by-products and fertilizers. The Corps projects or increase of 105 percent of the barge shipments of farm products between 1987 and 2020.

UMR navigation is made possible by a series of 32 locks and 28 dams located between Minneapolis, Minnesota and Cairo, Illinois. Most of the locks and dams located above L&D 26 were constructed during the 1930s, and consequently, are over 50-years old. Most have 600-foot locks which require the traditional 15-barge tow to be split in half to move through each lock.

If realized, the projected doubling of barge traffic on the UMR would impose severe congestion at locks and dams 14-18, 20-22 and 24-25. A preliminary analysis by the Corps found that Locks 21, 22, 24 and 25 would be congested by 2005 and 15, 16 and 18 after 2020. In contrast, the Peoria Lock and Dam on the Illinois River had declining tonnage during most of the 1980s and will not reach its projected capacity until well beyond 2020.

Highways

The highway system in the five-state region consists largely of rural roads. Approximately 90 percent of all Minnesota roads are located in rural areas. The percentages are even higher in Iowa, Nebraska and the Dakotas. Most of the rural roads in all five states are local roads that are maintained by county or township governments. In general, the local rural roads have low traffic densities; many gravel or dirt roads carry only a few vehicles each day. Moreover, many of these low volume roads in Iowa, Nebraska, North Dakota and South Dakota have a high percent of bridges that are structurally or functionally obsolete. Some are too narrow for today's modern farm implements. Others are posted at weights below legal maximum weight limits.

Local governments face a declining rural population, increasing motor vehicle fuel efficiency, declining federal funds and a declining share of state motor fuel taxes in Iowa, Nebraska and South Dakota. These changes will make it difficult for county and township governments to generate sufficient funds to maintain the existing local road network.

Declining rural populations suggest that traffic levels will decline on many local rural roads. At the same time, the size and weight of vehicles traveling in these roads continue to increase. Farmers continue to buy larger and heavier tractors and combines, and wider planting, tillage and harvesting equipment. Moreover, farmers drive these vehicles longer distances over rural roads to reach their scattered farmland. Farmer owned vehicles are not only heavier but also are carrying many more ton-miles of product over the local rural road system.

Impact of Transportation Trends on Commodities

Quality differentiated grains
Biotechnology has already created several types of special quality grains and oil seeds. The specialty grains and oil seeds that improve the quality of animal feed for domestic consumption will likely continue to be delivered to country elevators. Elevators will segregate these special qualities and manufacture them into animal feeds, or ship the raw grains by railroad or truck to processors or feeder markets.
The special quality grains which are consumed in very large volumes for industrial uses will likely follow the traditional pattern of transport to the local elevator for segregation and shipment by rail or truck to the processing plants. Farmers located within 100 miles will increasingly use their large semis to deliver these grains directly to processing plants.

Genetically modified grains and oil seeds that are used in smaller volumes for domestic food and industrial products will likely be grown under contracts between processors and farmers. These specialty grains and oil seeds are almost certain to be delivered directly from farms to processors. This direct delivery will reduce costs by eliminating the trucking to, and special handling and storage costs at the country elevator. The most likely vehicle to be used for this direct delivery is the farmer-owned semi.
There is less certainty about how genetically modified grains will flow to export ports. The most likely scenario is that some country elevators will have significant cost advantages in handling export-bound specialty grains and oil seeds. The export-bound specialty grains will likely be railed to barge terminals for transfer into barges, or directly to export ports to be transferred directly into the hold of an ocean vessel.

The cost of exporting the large volumes of genetically modified grains and oilseeds for feed and industrial uses in containers would be prohibitively expensive. However, exported grains and oil seeds for human consumption and for seed will almost certainly continue to be exported in containers. These containers will likely be delivered by truck to intermodal transfer facilities. There, the containers will be transferred to relatively low-cost double stack container trains for transport to export ports. The containers will then be transferred to container vessels for delivery to import ports.

Generic grains
Many observers are forecasting large increases in generic grain exports, particularly to Pacific Rim countries. If the export forecasts are realized, additional increases in exports will create huge rail car shortages, high barge rates and penalties to shippers unable to deliver their grain on time. Thus, it is important to the five-state economies to continue to improve the efficiency of the generic grain distribution and transportation system.

The continued shift to larger grain cars and longer trains will increase the efficiency of railroad shipments. However, these shifts will require large investments in upgrading many branch line and railroad bridges. Moreover, the additional quantities of grain hauled by 100-car trains with 110- to 125-ton cars means that many elevators will require substantial investments in facilities to load these large shipments. These investments will be uneconomic for some branch lines and for many elevators. The shift to larger cars and longer trains is inevitable. The best strategy is to adapt to these changes in a fashion that will increase the competitive advantage of the five-state area agricultural and manufacturing products in national and international markets.

If the higher export projections are realized, larger volumes of grain and oilseeds will be also railed or trucked to Mississippi River barge terminals. This increased volume will have two major implications. First, the truck shipments will increase the amount of heavy traffic on rural and state roads. Secondly, the increased traffic will add to congestion on the Upper Mississippi River, particularly if the shipments are bunched together during peak shipping periods.

Meat exports
U.S. meat exports have been increasing rapidly in recent years. In 1994, beef and pork exports were 6.6 and 3.0 percent of total production. One report suggests that beef exports will increase at a rate of 10 percent per year and that pork exports could increase by 116,000 metric tons per year.

Almost all meat exports are shipped by rail to export ports and then by ocean vessel to importing countries. Only immediate shortages or immediate demands are shipped by air transport, because air freight costs about $1.50 per pound more than the rail-ocean vessel mode.

The rail-ocean mode of meat transport takes two basic forms. One is called "pier-to-house." The second is the house-to-house. Both methods are used by large slaughter plants. The house-to-house method is used by both large and small meat packing and processing firms. The total cost of the house-to-house method depends, in part, on how many miles the containers must be trucked to an intermodal facility. Total cost also depends on the type of container train—double stack or conventional—used to haul the container to the export port.

Manufactured products
Most manufactured products shipped from the five-state area to domestic markets move by truck. Thus, the quality of the state highway system is crucial to trucking costs. Export shipments of many manufactured products move by containers. There, the accessibility of double stack container shipments is important for the competitiveness of containerized exports from the five-state area manufacturers.

The major advantage of double stack container shipments is that the out-of-pocket railroad costs are significantly lower than out-of-pocket truck costs. However, double stack trains require very large volumes to recover the high fixed costs. Thus, if central and eastern Iowa, western Minnesota and the Dakotas are to enjoy the benefits of low cost double stack trains, they must concentrate their container traffic at strategically located intermodal facilities. This will require a well-conceived study to determine if and where mainline intermodal facilities should be built.

Infrastructure
The trends outlined above strongly suggests a rural economic development strategy that includes a mix of upgrading some state and local rural roads and downgrading some low volume roads. This strategy will also require the upgrading of some train loading elevators, some branch rail lines and some locks on the Upper Mississippi River. The strategy may require the construction of strategically located intermodal facilities. These trends also suggest that some branch rail lines and local rural roads be abandoned.

A basic principle in deciding to invest or disinvest in transportation and distribution facilities, is that the investment or disinvestment should generate total benefits that exceed the total costs. In addition, the total benefits and costs must be discounted back to present dollars so that the investment or disinvestment yields positive present value net benefits. Moreover, transfer effects must be eliminated from the estimated benefits of the investment. For example, consider the option of upgrading a branch rail line. The upgraded branch line may attract traffic from a nearby branch line. Counting all of the new traffic on the upgraded branch line as a benefit from the upgrading, would be crediting the benefits transferred from the nearby line; this would certainly overestimate the net benefits from upgrading the line. One method to

insure that transfer affects are not counted as a benefit, is to estimate the net benefits from the upgrading or disinvestment and then subtract the net benefits of the next best alternative.

An investment principle that should *not* be followed is the concept that "if we build it, they will come." Too many public funds have been invested on this risky basis. If road investments are made to entice new firms into an area, the road investments should be made only after the new firm(s) have made an irrevocable commitment to the location.

Upgrading state highways

Many rural residents and rural development officials promote the construction of new four-lane divided state highways. Recent studies of two such proposals in Iowa indicate that it is not economically justifiable to convert some, and perhaps most existing two-lane state roads, to four-lane roads. The two studies found an alternative called "super two" lane roads that were economically justified. The features of a super-two highway are:

- two paved travel lanes 12- to 15-feet wide
- 10-foot paved shoulders, or at least a three-foot strip of asphalt and the balance graveled, with a 33-foot clear zone in rural area
- a design speed of 70-miles per hour except a 60-mph limit in rolling hills
- maximum grade of three degrees
- vertical clearance of at least 16-feet
- bridges that exceed road width by three-feet on each side
- passing lanes every five miles
- bypasses around smaller communities
- turn lane and acceleration lanes at intersections
-

Super two highways cost about 40 percent as much as a four-lane, 55-mph expressway and only about 20 percent as much as a 65-mph freeway. Moreover, properly designed super-two highways can support up to 6,000-7,000 vehicles per day almost as well as expressways.

Breakout Sessions on Wednesday, September 13, 2000

Workshop participants broke into two groups and were asked to answer a series of questions to help synthesize what they had learned and heard during the series of presentations. Following are summaries of the discussions in those groups.

Breakout Group I: First meeting

Objective Level Questions:

What are some of the major themes or key findings you have heard in the symposium presentations?

- There are timing issues, delays and congestion in freight movement
- Regulation of the number of hours drivers can work (hours of service) is an issue
- It seems there are a number of states trying to develop better freight data for analysis
- Private/public partnerships need to be developed
- The public sector needs a better understanding of private industry's freight needs
- The other states' programs were driven by ISTEA.*ISTEA was the catalyst to getting states to pay some attention to freight, although freight is still not at a priority as the other modals are. We're coming along, however and there are many states also at the same place our state is. It's refreshing to hear where these other states are.
- It's good now to come together and listen to other states' DOTs and I could share where our state is coming from.
- Independently, all the other states have headed down the same path and are putting freight on the radar.
- There should be a clear line between what the MPO (Metropolitan Planning Organization) should and can do and what the state should and can do.
- *Intermodel Surface Transportation Efficiency Act—or ISTEA—had certain requirements, including intermodal management systems (IMS), then the requirement was dropped, but many states continued to support management systems and are continuing to develop statewide planning models because that seems to make some sense in the efforts to become more intermodal. IMS requirements were dropped because many states thought it was to onerous and didn't act on it. Everyone had a little bit different interpretation. Perhaps there could be some NCHRP(?) projects to develop some of these tools. There are a number of states perusing the development of tools; maybe we should pool our resources.
- States would appreciate some form of federal encouragement for the states to undertake intermodal freight planning.
- ISTEA did give us some inventory data. However, the difficulties was that private shippers were more than happy to tell us their access roads were bad but they didn't want to tell us much about what was inside their gate. There needs to be some sort of incentive for information sharing (financial or other); The other thing is that there isn't much in funding to help in the intermodal facility itself—there's some for rail, but not the facility itself.
- Since states don't like to have mandates, maybe we have to work with them another way (promote, facilitate, encourage, not mandate).
- States would prefer to have the federal government support some form of an IMS (intermodel management system). Having a management system without eligibility would be beneficial, i.e., intermodal management and eligibility go hand in hand; eligibility might also make it easier to get inside the gate.
- The private sector wants access and service, but they are very leery about having a public agency be involved in their business.

- At the various levels (states, regional, multi-jurisdictional) what can be done? The main thing is the integration of maintenance across modes (grate crossings, for example). These shouldn't be isolated.

Where is the data clear?

- The growth of goods movement has grown faster than was predicted; some states have done forecasting (most haven't because they are unable). For some states, forecasting will be meaningless, for other states forecasting will be helpful and important. I would guess in the Midwest, it would be very helpful. Those on the coast…who knows?
- I have not heard, in the past few days, any indication of how better freight data is translated into better planning and programming getting to projects (that's not to say that it doesn't exist, it just hasn't been discussed here). There hasn't been a discussion of how to apply the data—what's the methodology? Is the data driving the methodology or is the methodology driving the data. (Data feeds the planning which feeds the programming [decision making] which feeds the project implementation)

What do we know?

We don't have enough solid data to adequately plan for freight.

In what areas are the data unclear, inconclusive or contradictory? What do we not know?

See above.

Among the papers presented, what has stood out for you? (that isn't already listed)

- We need to take this from the state level; you can't talk about freight without talking about multiple jurisdictions (domestically, and internationally—at least between Canada and Mexico)
- It seems that around 90 percent—give or take a little—of most states' freight programs are the same. What struck me was that listening to the states run the list of the projects they're working on and what the problems are is that things started to sound the same. Not that that's bad, but it was something that struck me.
- Is there a fatal flaw in planning when it comes to freight? Yes—there is a fatal flaw, my sense is that most of our planning models geared toward people—they are engineering based models—or physically based models because people are a physical thing. But that doesn't work for freight. Our models are for people are pretty good. We are trying to apply the people models to freight. (People models are long-range, out a ways; freight is more immediate.) Existing models don't work; they don't relate to freight or replicate freight movement. Existing freight models do not adequately reflect freight movement. Most of the data sources that feed the modeling processes are engineering based—or spot specific—and freight is flow-based and we don't have good flow information. We don't really have very timely data (it's at least two years old).
- Part of this is given our own paradigms: public and private have a hard time seeing each other's perspectives. Somehow we (public) can't connect with the private sector as they plan. The private shippers know where there goods are going and they know where and when they're growing, etc.
- NOTE: Our modeling does work for some of the macro applications. When you get down to the local level, that's where the engineering-based models don't work. We can still react to the major flows because it reacts incrementally. We can handle major corridor issues; but once a truck leaves the major road, we have no control; other example, when railroads start tweaking their system or merging, etc.)
- The public doesn't have the trust of the private sector; and the public sector doesn't have anything to offer the private sector.
- In CA, the private truckers are willing to talk to public about how much they are willing to pay for increasing truck lanes. Slowly we are building trust.

- We've heard comments about the data, the model, the process, financing, political realities, time horizons: All cases, when you are dealing with freight, the data we have don't account for freight. The process we use is not freight-friendly, the financing isn't freight-friendly, the political reality isn't freight-friendly. It seems that you need a separate process outside of the way we currently do business. We need people to say "You're right, let's do something different."
- Effectively addressing freight will require more than just tweaking the existing transportation development process (planning and development process.)
- We need to remember that even if we had access to the data that the private sector has, our problems would not simply go away. We're assuming the private sector data is any good. But really, we don't have the model even in a perfect data world.
- We need new freight variables in the models rather than those that we use with transit models. Maybe the use of technology to track where are goods are going would be helpful—it maybe one of the variables or tools.
- We also have to be more agile and jump from one side to the other quickly. We'll need to be flexible. For example, if a problem is here now, we can't wait seven years to fix it, we need to be able to react more efficiently, more immediately.
- We may also need more than one model; maybe we need models. Maybe models aren't even the right answer.

Interpretive Level Questions:

What conclusions can we draw from the information we have heard?

- We need to get a better handle on understanding on the specific factors of freight movement.
- We need to develop partnerships. And, when we talk about freight, it seems we need some "team" type of approach. I also heard that most of the states are organized around modal offices (a rail office here, truck here, etc.) they're still separate modes which makes it difficult to have a holistic approach without a team approach. All modes have to sit down together to solve modal issues. This is an alternative the past federal attempts to reorganize….which hasn't really worked.
- We don't view freight as a system (or transportation as a system).
- If you had an intermodel management system attached to eligibility, would that get you where you want to go? It could.
- Intermodal Management System: the original definition was an inventory of NHS connectors; now we're talking about something much more comprehensive. (Example: investment trade offs; in PA: are you better off moving freight on truck, rail or water. If there isn't funding on one side, can you take it from one side and put it into the other side. Maybe it should be *the intermodel development system (IDS)* versus intermodel management system which includes:
    1: Transfer of funds across modes.
    2: Having a pot of funds to use on any mode.
    3: Issues of state/local use of funds.
    4: There is a distinction between what needs to be done and who does it.
- The ability to use a pot of funds to deal with any kind of modes all linked to freight. If I discover a more feasible project, how do I make a decision out of my jurisdiction? Example: we've been working with a developer to build a new facility. We may need to realign the rail system in a particular area. The realignment would benefit the highway, the city, the public, etc. That's how you justify using money from one mode for another. One of the reasons the developer is talking to us is that they think we have a large pot of money and we'll be able to finance a lot of the project. Project isn't far enough along to for us to determine what will happen.
- NHS (National Highway System) funds, if you have funds in the intermodel area, to alleviate some of the congestion around the NHS connectors. Those are your key terminals where 75% of the traffic is. You want to invest something from the key structures.

- Loan/Block grants is one way to have the pot of money: one possibility or one method of addressing this multimode funds expenditure. Block grants for intermodel projects; not necessarily new money, or that we're not going to use our other funds. It's just a concept.
- Also, the ability to use highway funds or railway funds, (interoperability) to share if you can show the benefits to each mode.

Performance Measures: Story to Congress
These are the implications of the current performance; the economic and social impact. The driving force of freight transportation. Here's the forecast:

1. Promote economic development and trade
2. Mode choice
3. Safety
4. Environmental Enhancement

- Freight needs reliability…there are things we need to do: reconstruct the way we look at the problem. We need institutions that let us do that we need and we need anew process because freight planning is so different from traditional planning. We need an operational strategy. We may need some regulatory relief. At the national level we need simple measures to tell congress and show them what we had last year and where it is today.
- What comes to mind is that what we're talking about is that we need a new model that indicates some optimal use of our various transportation assets, private or public and be able to react to "shocks" into the system and how does that affect the mix.
- In order to address project specific, we need a new family of tools and it's both a national interest and state interest to develop these tools. We can't do that right now. But how do we get there? And does reauthorization help us get there? So, what are some of the first steps in getting there?

State: To be multi-modal, each mode must be able to do its own measurement analysis and rail road is a challenge because it's private.

- People want the most effective, efficient transportation system, but I don't want to pay for it.

Federal: Have to be able to walk individual federal budget examiners through process.

Federal: Must have a common budget language for federal agencies to use for their individual budgets.

Joint: Benchmarking a corridor against itself over time is a useful indicator.

- Shippers keep telling us the number one priority is trip time predictability, then the next thing is trip time itself. You could begin to examine major modal corridors to see what's working. Maybe benchmark a corridor over time is very important; maybe even benchmark it against other countries down the line.

Federal and State: Need performance indicators along modal corridors.

Joint: Figure out what really talks to congress (jobs, congestion, safety, etc.) and figure out how to measure those things and take that back to congress and elected officials. There is an important part of marketing this freight message. We need to understand the interface between executive support and legislative action. We need to figure out how to couch this when talking to congress. Different congressman in different parts of country will have different issue. Also need a link to the private sector. Need to understand how to talk to congress.

Joint: Marketing or public relations of the message is important.

Federal and State: Measures need to be flexible to address different geographic needs.

Federal lead with state input: Translate the performance measures to the benefits that talk to congress.

- We also need to take freight or the train itself and see the best way to send a commodity to see the best way for various commodities to get from point A to B.

Federal: Private sector has to be linked to the story line to congress.

At a later event, we need to drill down to these three pieces:

1. *Joint including private in some cases:* An intermodel development process (define what that is). What's the story line to congress and how's it different from what we have now. What pieces are involved that we don't have? What's missing and how to do it?
2. Institutional: Institutionally, how do we need to rethink the way we structure ourselves to make decisions on freight? Is state MPO, private, etc. is that the paradigm? We could have a program to provide seed money to engage private sector and get them to the table. Multistate coalitions, corridor analysis, etc.
   Fed, State, Regional, Local: Need to rethink how we restructure ourselves to make decisions on freight.
3. *Joint including Fed, State, Regional, Private, Local:* Cohesive, comprehensive freight operations strategy. This could turn into intermodel (ITS), but it's bigger than ITS, but congress recognizes ITS.

Safety is the most important part of all of the process. Safety is part of all of the initiatives.

Apply all of these ideas to highway trucking and then spread it out to all other modes eventually (talking about the implementation of the new freight strategy.)

Breakout Group II: First Meeting

Objective Level Questions:

What are some of the major themes or key findings you have heard in the symposium presentations? Where is the data clear? What do we know?

- Multi-jurisdictional partnerships work and are essential; public/private.
- The importance of reliability, predictability, redundancy in time; predict how long to get from point a to point b, reliability.
- Connectivity between modes is important; ability to shift freight from one mode to another; connectivity between segments of the systems; between roads, interstates, rural and urban systems; streets to highways to interstates; major railroads to feeder systems; from barges to ships.
- Freight is a private sector activity taking place on public infrastructure
- Data collection to close the information gap; more of it on a national scale; commodity flow, timing, more timely.
- Public sector has an imperfect understanding of dynamics of freight movement by the private sector; lack of data and mutual misunderstanding of roles and a difference in the way public and private do business; private sector moves faster, shorter timeline to action; public stewards of tax dollars, procedures that take time, require legislative approval and public participation.
- Freight planning has tended to be intrastate; picture is changing, becoming more interstate, still early.
- Move beyond policy development into implementation; projects and thinking about how to develop the steps for implementation and how to measure the outcomes; gathered data, collected

opinions from stakeholders, now what, funding and project plans; some states are at implementation point.

- How do freight projects get ranked with other projects from the MPO viewpoint? No formal, systematic repetitive process so far; no common ground among projects and how they got funded.
- At all levels of government, our legislatively mandated processes to develop programming and projects don't plug freight in as a category that has weight when matching it up with other projects competing for dollars; i.e., bike and peds; mass transit; highway projects; ITS; rail; all bidding on fixed amount of dollars; not enough money to go around to meet all needs; a lot of competition for a limited amount of funding; how do you establish the priority and scoring system for freight projects?
- No clear delineation between car and truck; truck assumed to be taken care of by car concerns when looking at road projects.
- Still thinking about enhancing current options, not developing brand new modes
- Conditions vary a lot among states, MPOs, and other jurisdictions; need flexibility from the feds, don't want to get boxed in by very specific regulations; there is no one size fits all
- Safety and rest area issues; whose responsibility is it? States don't want to assume the responsibility - private sector should take on role; not enough slots; using rest areas as staging areas before arrival
- Federal requirement to meet running hours; not looking for conveniences in public areas; safety and running hours; private sector perspective; passenger cars not only customers on the road; government help provide means to make it happen;
- Solutions should be collaborative - examples include Mn/DOT and DNR partnering on a welcome center and rest area; public/private rest areas that provide commercial opportunities;
- Customer ultimately pays for the inefficiency. Freight planning should address this issue.
- Traffic volume has increased tremendously but the amenities for the roads have not; i.e. rest areas; truck driver takes the hit in the short run, ultimately the customer pays for transportation through the payment for goods;
- Competing customers and interests; communities don't want more rest areas; feds don't pay for maintenance of rest areas; security.
- Safety not always weighed in as heavily when freight issues or planning are discussed
- Lack of funding for planning, programming and implementation of freight at all levels- federal to local
- Freight does not have a local champion; affects what happens in the planning process; rolls up to other levels
- General lack of understanding by the public of the benefit they derive from freight;
- Freight community doesn't understand the public process for transportation improvements; not always seen as a good neighbor within the community;
- Need better data, forecasting, projections of freight movements from the national perspective;
- Not always sure what data is needed to measure performance; or even what variables are important for measuring performance; public and private sectors develop a common measuring stick that has meaning for both?; public should measure performance of highway system; public sector's measures should be complementary to the private sector and vice versa
- Public sector has difficulty getting that partnership from the private sector in whatever mode; it also can be hard to get freight on the public sector agenda

Reflective Level Questions:

As you listened to the presentations, what points "gelled" with your previous experiences?

- Everyone's facing the same problems; different political environments that offer different political options that can help solve problems; no magic bullet; have to be built around flexibility; apply to unique structures and regions.

- Lack of communication up and down the channel; without communication and education, freight as a priority policy issue is a non-starter.
- Struggling to quantify impacts of freight on the transportation system; physical, etc.
- If we wait, the system will go to pot. Politicians have to see a broad-based agreement that this is a problem; need buy-in from the public to influence the decision-makers; education is key; responsibility of both public and private sector; waiting increases costs; the longer we wait, the more it is going to cost for the solutions.
- Pay attention to the "green" factor in planning; congestion has a negative effect on the environmental concerns; land use planning; access management.

What surprised you?

- There were no surprises.
- States are doing more than people know with regard to freight.
- Big learning curve ahead of the states; common experience among states; those thought to be progressive still feel they have a lot to learn.
- There are things being addressed, it's just not being communicated broadly. Copy and learn from one another.
- There is not a lot of multi-state cooperation going on.
- Split between those who are committed to doing it and those who aren't; states that don't have resources are looking outside to states that do.
- More of the "players" in this field aren't at this conference; not hearing the other stories which are also important; consultant community also has a lot of information; no one from Canada given that we're that close.
- Feds haven't sponsored a cost of congestion study as it relates to freight and mode

Interpretive Level Questions:

What conclusions can we draw from the information we have heard?

- A large public outreach effort is needed to get support for freight projects; state has to take proactive role as ombudsman; public/private sector partnerships will evolve at regional level; state can help broker these efforts; implementation is local.
- Feds can take an active role in identifying barriers that impede freight movement across state boundaries; anything moving between states is interstate commerce and has a federal component; Interstate will override state and local jurisdiction.
- Feds can help destroy the silos between customs, INS, and DOT; INS and customs have specific agendas.
- Role of fed government is to provide flexibility to the states; let the states make decisions rather than creating additional federal programs that won't meet the states' needs and isn't conducive to good planning.
- Expanded flexibility in use of funds for the National Highway System program; definition of eligible projects should be expanded.
- States are doing more now than they did 5 years ago in explicitly considering freight in transportation policy planning; the feds are too - FHWA created Office of Freight Management and Operations; more coordination within FHWA itself with regard to freight planning is needed.

What do we need to keep in mind for decision-making?

Federal roles and responsibilities

- Identify issues and bring state and local entities together to facilitate discussion and share best practices.
- Provide data and facts and projections from the national perspective.

- Make information available and make technical assistance available.
- Offer leveraging of funds and flexibility to pool funds among states.
- General interstate highway policy; setting a level of quality and standards for the system; level of service; safety; travel time.
- Establish common measures of performance for the interstate highway system.
- What about other modes?
- Reduce the local match requirements for freight identified projects.
- Develop consistent approach to doing freight analysis and forecasting at a corridor level.
- Help states gather import/export data; explore additional data needs; Department of Commerce and Bureau of Transportation Statistics does some.
- Convene a workshop to identify data gaps.
- Assist states' cooperative efforts on a corridor level.
- Recommend states appoint freight coordinator to champion freight issues at the state and local levels.

State roles and responsibilities

- Allow for sharing of services between local and state governments; "agility program"; agreement to share services; memorandums of understanding; avoid duplication of effort and dollars
- Analyze data.
- Planning, programming, and project delivery
- Bring together partners - freight; MPOs, local municipalities.
- Modal training, modal planning; work with cities and counties on their comp plans; mentorship to assist local governments when needed.
- Roll those projects up into statewide transportation planning and corridor planning
- Identify freight's role and level of importance within the state; different in how it touches each state; some states only pay lip service.
- Develop interstate cooperation efforts.
- Volunteer to be a pilot to try new things and be a leader in innovation.
- Identify intermodal (freight) coordinators to communicate with private industry.

Local roles and responsibilities

- Partner with state; participate in planning and in some cases, participate in project delivery.
- Identify hot spots, choke points.
- Outreach to engage industry; land use planning, development issues; heads up partnership with state.
- Outreach to public; initial engagement; where the rubber hits the road.
- Volunteer to pilot promising new ideas in partnership with the state.

Private sector roles and responsibilities

- Maintenance of mainline track
- Inform the public sector when they make changes in operations that will impact the public infrastructure (use of mode, etc.)
- Give public sector planners the broad trends

Breakout Sessions Presentations on Thursday, September 14, 2000

During this second breakout session, the two working groups participated in "visioning workshops" where they identified vision statements, objectives, outcomes and performance measures framed around this question: ***"Given what we have learned about freight strategy, what would you like the nation to accomplish in the next five years?"***

Following the workshops, the two groups shared their information with one another. Common themes between the groups were safety, planning, funding and outreach. Staff from the Office of Freight Management and Operations indicated that two or three elements identified during this workshop will be selected for further discussion and development, perhaps at another event similar to this one. The goal is to have a strategy in place to present to Congress as part of the reauthorization of TEA-21. A common language and approach should be promoted and agreed upon by freight's stakeholders prior to the reauthorization initiative.

The efforts of the two groups are summarized below.

Breakout Group I: Second Meeting

Vision Statement

- Most efficient and effective freight system to meet consumer needs.
- Develop and advance vision/goals and objectives and strategy to build a North American society for global leadership.

Outcome: **Implement, test, and evaluate pilot programs for freight innovative finance within five years.**

- More flexibility in funding (rail, intermodal terminals); states needs differ
- Revisions to transportation funding that allow more flexibility and better integration (ability to move funds among modes)
- Increase recognition (by policymakers) of the impact of goods movement on the economy - it is a two-way street: federal funding and state funding
- Authorize and fund the intermodal transportation component of such a strategy
- Provide funds to enhance movement of goods at the major freight generators on the nation's strategic trade corridors

Outcome: **Establishment of ten regional centers of excellence for global commerce within five years.**

- Creation and linkage of regional centers of excellence for global commerce
- Forming public and private partnerships is critical to ensure workable timing
- Create freight education and tools program modeled after ITS (Intelligent Transportation System) PCB (Professional Capacity Building) effort: training and tools
- Creation of incubator programs to support human resource development to support trade and improve employability

Outcome: **Reduce fatalities and incidents associated with freight movement within five years.**

- An aggressive basic and applied research and technology program to address environmental and community issues of freight movement
- Adopt quality concepts to achieve safety outcomes society desires (move upstream to address safety)
- Develop safety strategies and tools to complement productivity
- Safer system

***Outcome:* A defined national and regional modal freight system and the institutional framework and processes to support it within five years.**

- Specific national goals for transportation that relate to economic development (for example, percent of GNP)
- An institutional framework for tri-national transportation development
- A strategic national and regional freight system is defined
- Transportation system operated by local, regional, state, and federal institutions where institutions have explicit responsibility for parts of the system and are held accountable
- Reformulate metropolitan planning organizations (option or eliminate)
  -plan and authorize funds
  -responsible for region overlay of transportation (people and freight)
  -new structure and members; more than public sector
  -held accountable

***Outcome:* Implement, test, and evaluate pilot programs for freight operational strategies within five years.**

- Development and implementation of a comprehensive operations strategy including an international ITS architecture.
- Emphasize intermodal operational component of ITS/CVO (Commercial Vehicle Operations) architecture and piggyback onto (and enhance) that effort.
- Keywords: flexible (adaptable), efficient (current data), and logistics (transportation and distribution)

***Outcome:* Development of freight methodology (model) for use by states along with data and performance measurements within five years.**

- Real-time freight data is needed
- Freight system performance indicators defined
- Adoption of performance benchmarks for border crossings (land and water)
- Development of an intermodal classification system.

Breakout Group II: Second Meeting

***Outcome:* By 2006, we will have improved communication and partnering among all the stakeholders, public and private.**

- Innovation - new technologies, new modes, more choices
- Shared awareness
- Assumption of leadership responsibility (accountability)
  1. Provide opportunities such as this workshop *more* often (once a year) for states to share information.
  2. FHWA lead in national freight dialogue with industry providers and states
  3. Support multi-jurisdictional partnerships
  4. Establish federal/state private co-op to foster *new* transport modes.

***Outcome:* By 2006, we will have more flexibility and more federal funding for projects that enhance the efficient movement of goods.**

- Provide more funds for freight planning and programming specifically
- Encourage/enable states to develop freight management plans and provide funding
- Improved funding streams/options for freight projects
- Financial support to get projects off the ground…demonstrate process and results
- 100% allocation of highway trust fund
- Dedicated freight and/or intermodal funding (or more flexibility in existing funding programs)

- Federal funding for shortline/regional rail to meet "heavy rail" requirements

Outcome: **By 2006, we will have continuous and systematic research, data provision and forecasting on how goods move and in what amounts, and what restrictions there are to free movement.**

- US DOT provides a database that can be utilized by all states
- Tools (analytical, data) that are commonly recognized and can be shared so we can "talk the same language" between jurisdictions and with industry
- Develop freight movement forecasting models
- Better and cheaper freight flows data available to the states
- All major freight data gaps filled
- Improve freight data access for state and local government

Outcome: **By 2006, we will formalize and integrate freight transportation planning and programming into federal, state, and local business processes.**

- Take a holistic approach to transportation include freight, personal, bike and pedestrian needs in all new projects
- Fully integrate freight project development in planning and programming process at all levels
- Formalize integration of freight planning within state and local planning (DOT, city, county) that leads to investment decision-making
- True integration of multi-modalism for passenger and freight transportation - highway, air, rail, pipeline, waterway ports, intermodal
- Freight projects in all TIPs
- All freight projects in TIPs come from transportation plans
- Institutionalize "freight" in planning development
- FWHA/AASHTO review and improve design criteria for NHS—considering future freight growth projections

Outcome: **By 2006, our efforts will improve the efficiency, effectiveness and safety of freight transportation.**

- Identify bottlenecks (routes) where existing strategies cannot address current/future needs
- Improve efficiency of transportation system
- Improve truck safety
- Improved productivity for private industry

Outcome: **By 2006, we will have a suite of measures of the effectiveness of goods movement at multiple jurisdictional levels.**

- Continued discussion of *performance measures* especially at the interface of the public and private sector.
- Data on shipment costs per mile by mode for major commodities

Outcome: **By 2006, we will have an ongoing outreach program that will allow the public to understand how goods move from place to place and the requirements this places on them.**

- Generalized, broad-based, all-mode, national freight primer (this is how goods get to you)
- Mass circulation of a national freight atlas (include "choke points")
- Web sites and radio ads would be developed
- Clearinghouse for school information and curriculum
- Strategy would identify different target audiences

Concluding Presentation:
North American Freight Flows and Trends
Presented by: **Harry Caldwell**, FHWA

In his presentation, Harry Caldwell, from the Federal Highway Administration (FHWA), Office of Freight Management and Operations, touched on a variety of freight statistics, issues, and trends. He first provided a brief overview of the FHWA, Department of Transportation (DOT) freight program, noting that the DOT's strategic plan is to "...Advance America's economic growth and competitiveness domestically and internationally through efficient and flexible transportation," and the FHWA's strategic plan is to "…Continually improve the economic efficiency of the Nation's transportation system to enhance America's position in the global economy."

Caldwell guided the group through the analytical framework being developed by the Office of Freight Management to estimate freight activity and described the five-step process of reauthorization that involves system inventory, performance assessment, future dynamics, and asking "what do we want" as an industry and "how do we get there."

He also reported "top line numbers" for total freight tons and value with the caveat that currently, "there isn't a good export database in place with which to extract more accurate export numbers." According to Caldwell, the first approximations of freight moving into, out of, and within the United States totaled 9.8 billion tons and $9.1 trillion in 1998. Predictions are that economic growth and trade—in the U.S. and worldwide—will continue to increase. Between 1992 and 2001, forecasts show an average growth of 3.6 percent for the U.S. economy and 3.4 percent for the world economy. U.S. exports are expected to see an average growth of 6.7 percent for this same time period, with imports growing an average of 9.9 percent.

Caldwell grouped other freight trends and issues into three categories: demand, supply, and public policy. Indications are that demand will move from national markets to global markets. Supply will move from modal fragmentation to cross-modal coordination and from system construction to system optimization. And public policy will shift from economic deregulation to safety regulation, from modal to multi-modal surface transportation policy, and from low visibility to environmental accountability.

"Yesterday, we saw a mass manufacturing economy, push logistics, moderate transportation performance requirements, and declining total logistics costs," Caldwell said. "Tomorrow," he predicted, "we'll see a service economy, pull logistics, longer supply chains, higher transportation performance requirements, and increasing total logistics costs."

While there is an increasing demand for reliable, flexible, cost-effective, timely, and visible door-to-door freight services, Caldwell believes that lower inventory levels and less slack production capacity will create greater dependence on transportation services, including increasing demand for package and air freight services. At the same time, there is increasing freight traffic and congestion along trade corridors and at ports, airports, and border crossings.

The increasing amount of congestion is of chief concern to the industry. A survey of California motor carriers revealed that 82 percent of these carriers see congestion as serious or critical. Those surveyed feel that congestion contributes to scheduling problems, decreasing driver morale, increasing numbers of accidents, and higher insurance, fuel, and maintenance costs. Similarly, 85 percent of these carriers see highway congestion worsening over next five years, especially in the area of landside access to ports and terminals.

In the past, the freight industry enjoyed adequate networks, realized productivity from interstate highway construction, and embraced the use of larger trucks, doublestack trains, and containerships. Today, the industry is faced with congested networks, fewer opportunities for "hard" technology productivity, and

increasing demand for "soft" technology productivity (e.g., information technology and operational productivity). Additionally, there is insufficient rail and intermodal terminal capacity, and there are challenges regarding public and private financing of system maintenance and new capacity. Along with the significant changes facing the industry, there is the potential for better freight services but with added complexity. Many carriers are expected to make significant investments in information technology and intelligent transportation systems to improve scheduling, routing, dispatching, highway and traffic management, shipment tracing, and stowage and terminal management.

On the public policy side, there seems to be less focus on economic deregulation, but more focus on safety regulation. The industry also expects to see increased environmental involvement regarding air quality, sustainability, and environmental justice. Caldwell feels there is a great need to bring together issues of productivity with environment and safety. "Air quality is often brought up, but water issues often have been neglected," Caldwell stated, adding that water is now becoming a major issue with transportation right in the middle of the debates. He asked the group, rhetorically, "can there be a positive discussion between environmental experts and transportation experts or is the issue already too polarized?" He suggested getting the environmental issues on the slate up front, early on.

Another industry change involves the public sector, which is becoming more aware of the need for multi-modal policy, planning, and investment. The goal to engage private sector freight interests in state and MPO planning processes, however, continues to be a challenge because of their different frames of reference. For example, the state and MPO focus is regional and local while the private sector focus is increasingly national and global. Caldwell would like to see a national outreach program created to work with public/private sector interest groups to advance freight policy issues; share freight analysis findings, forecasts, and system impacts with stakeholders; provide data and seed money to help multijurisdictional coalitions; and develop reauthorization strategies that fully reflect the needs of freight and passenger considerations.

Just what are the implications of these changing public policy trends? One prediction is that there will be diminishing productivity returns from deregulation but potential re-regulation to preserve competition. There will also be increasing pressure to reduce the number of accidents and fatalities. More than likely, there will be a complex planning and investment environment that will include the use of highway trust funds for non-highway freight projects. And, there will be increased local involvement of transportation activities (NIMBY?) along with new institutional arrangements and greater reliance upon infrastructure.

To address some of the industry concerns, FHWA is working on several projects including an analysis of the economic benefits of freight; a benefit/cost tool for regional assessment; performance measures for benchmarking; and a review of freight financing activities and analytical framework. Specifically, Caldwell stated, his department wants to tell the story of the relationship between transportation and economic development.

The underlying theme of Caldwell's presentation was his desire to help shape an industry plan in preparation for reauthorization. He diagramed the evolution of freight policy, showing how initially, there was efficiency (ISTEA 1991-97); then equity (TEA-21 1998-2003); and soon, he predicted, effectiveness (2004 and beyond). An effective system, Caldwell stated, is one that meets the challenges of freight movement associated with an integrated system that supports all North American Transportation activities. In other words, an effective system makes the best use of public and private asset to strengthen America's global competitive capability.

Moving forward, Caldwell presented his challenges—the three I's—to the industry. First, he would like to see institutional development whereby the industry enables multistate, regional, and bi-national intermodal freight coalitions; establishes statewide and metropolitan freight advisory groups; and develops data systems and tools to evaluate freight improvement options. Second, he suggests full

deployment of information technology across the regions and links throughout the supply chain; linkage with border crossings, air, and marine ports of entry; and development of a real-time operations information system. Finally, he calls for development of an infrastructure that provides expanded finance options and new financing guidelines and that addresses the time horizon differential among various freight entities.

If you would like more information about the topics discussed in this presentation summary, visit http://ops.fhwa.dot.gov/freight/.

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