

Chapter 6

Statewide Goods Movement and Intermodal Planning Issues

JOHN FULLER, *University of Iowa*

I would like to begin by mentioning that I think that the committee members had a chance during their meeting of the statewide transportation committee to do something that is useful to bring to your attention as a preface to the speakers. Joanne Walsh of the Texas DOT shared with the committee members a memo from Austin's Sustainability Indicators Project. Austin has engaged in an effort to try and figure out what sustainability is for that community, and they have done that process with a real extensive description of some 34 different indicators.

There were some transportation-related ones among those 34. Number 23, for example, dealt with traffic congestion as measured in changed commute time and distance. Number 27 had to do with urban sprawl. Number 29 had to do with hazardous waste, which is at least somewhat transportation oriented, and Number 30 had to do with passenger transport options, transit, the bicycles, perhaps, and the like.

Others of the indicators, of the very long list of indicators, involved economic growth, jobs, recreation, education, health, and other such matters. What I would like you to note is that as a community investigates sustainability, that community had not a word to say, not a thing to mention about the role of freight transportation despite the fact that freight is absolutely basic and essential to any economy.

It seems to me that the lack of attention to freight transportation is common despite the special attention paid to it in TEA-21, and that this lack of attention is common not only on the part of the public but on the part of most urban authorities and many in state government as well.

Freight is given attention only as an impediment. Trains hold us up at grade crossings. The lift bridge goes up for a ship and delays people at rush hour. Trucks are said to cause congestion or perhaps seem unsafe. This means that I think there is a major educational job ahead for us to bring attention to freight transportation. The job is all the more important because the freight world is rapidly changing.

At this conference, we have heard of some of these changes. It is changing through tremendous growth and international trade and international transportation. It is changing through a world revolution in logistics and information science, a revolution that essentially means that we are putting many more resources into freight transportation because doing so and providing higher-quality freight means that it is possible to provide lower-cost production and distribution.

There are some real shifts in the institutional structure of the modes and of the equipment suppliers. These occur throughout the freight modes, but I think they are most visible to us right now in the rail industry. So, against this background of rapid change in freight, we have an industry whose positive contributions are all but invisible to the public.

JOHN VICKERMAN, *Vickerman, Zachary, Miller*

I am going to talk to you about megatrends in international shipping.

Transportation as we know it today will be quite different tomorrow, and how we plan for transportation is really, really important. It is changing dramatically and how we see the future is going to be quite different than today.

Intermodal Freight Industry Trends

I am going to refer to this industry as an intermodal freight industry, intermodal being in its more macro view as movement of a commodity from one mode to another, and many times in our country the incubator mode to that process is the port, and we will use that as a backdrop.

In our country, we invented a mode and then we focused on its growth and diversification. Then our government, in its infinite wisdom, decided to shield emerging modes and we had carrier regulations—the government limiting destructive competition and sheltering emerging modes. In the last decade and a half we have deregulated regulation. In fact, the last holdout in that deregulation, the maritime industry, was deregulated this year. We were halfway deregulated in the maritime industry in 1984. This year, confidential rate making, nonfiling with the FMC, and other major trends will completely deregulate that industry.

Where are we headed? In my estimation, we are headed toward the optimization of end-to-end supply-chain logistics. It used to be, get the freight from the port to the port. Then it used to be portal to portal, door to door. Now it is really from shelf to shelf and beyond, from the inception of the product to the consumption of the product, the management of the supply chain logistics is, in fact, the driver.

That driver toward service integration increases globalization, the shrinking of the world, fosters strategic partnering, vessel-sharing agreements, merger of railroads, intermodal diversification, increased competition, certainly increased information, and the promise, if we all put it together, it is going to be better.

As a specialist in the maritime industry, when I go to Wal-Mart to buy something and I get to the cash register, I ask the cash register clerk, “Which port did this come through?” before I buy anything. Now all of you, I am pretty sure, do that. Which trucker brought it? Right. No. We normally have a 40 percent-off coupon. We want it in our size, in blue, right away. That is the pressure of today’s carriers and shippers. As Yossi Sheffi of the MIT Center for Transportation Studies has said, “The customer wants more and is willing to pay less for it.”

It is not funny; it is serious. Freight doesn’t go where it is more expensive and it doesn’t go where it has less service or it is slower. It goes downhill like water, where it is cheaper and faster. We know that the inland costs now represent about 75 percent of that cost equation. It is easier to rationalize on the water, much harder to rationalize on the land.

A good example is the cost of a \$70 Nike tennis shoe. The cost to Nike is about \$20 out of that \$70. About 50 cents of that is shipping of the raw material to the manufacturing source. This is per Nike shoe. The retailer is assigned about \$35 worth of cost, of which \$5 is transportation.

Of the total \$70 shoe, \$9 is profit and \$5.50 is transportation. Of that, the land-based cost is the most consuming. So what are we doing here? We are dealing with \$5 out of \$70. That is the transport cost. Now, that doesn't seem like a whole lot, but it does mean that every penny in that logistics chain that can get squeezed affects how this shoe comes to market. Nike shoes do not come to you from the United States; they come to you from overseas manufacturing sources.

Here are a couple of paradigms: The centroid of manufacturing historically was in the Japans and the Koreas. That manufacturing centroid has moved westerly and is in Singapore and Hong Kong. Where is a manufactured good today from? Southeast Asia or Malaysia. Could that manufacturing centroid go to India, where it is cheaper? Maybe. Could it go to China, where we have more population base?

We normally go across the Pacific and we went to the biggest consumption zone in our country, New York/New Jersey. By the way—news flash—New York/New Jersey ain't moving. It is not going to Halifax. It is not going to Baltimore. They are staying right there in River City. So, the no-brainer for a shipper is get the product to the consumption zone and get it consumed.

Well, a couple of years ago, a couple of marine shippers said I could have had a V8. I will go backwards. I will go through the Red Sea, pass the Suez, and get to New York/New Jersey cheaper and faster, backwards flow in the world. In fact, that strategy is New York's strategy today; Hampton Roads' strategy today; and, in fact, if you look at the numbers of backwards flow to the Suez, it is the highest number since the operation of the Suez Canal. Your product might get to you going backwards through the world.

We are also seeing the idea that ships follow lanes and there might be a transshipment center allowing a big ship to come across and go back to Europe faster, eight more times a year. Boy, that would be nice because the dollars would go directly to the out-of-pocket.

From that big ship comes small ships like Crowley American Transports' new vessel called the *Jaguar*, smaller, higher speed, and designed specifically for South American trade.

It transfers to some new technology, barges, and coastal trade. This will divert trucks off the road and directly onto the ocean. In fact, a diversion of significant amounts of truck traffic on Highway 95 in the east coast is planned for this kind of dynamic.

Where does it get shipped to? Perhaps a little port operating 65 miles off the Florida coast. It is a nonunion port. Built privately. Hutchinson Whampoa, Hutchinson Port Holding Group. Deep water. Fifty-one feet. Off the coast. Nonunion. Why? It is cheaper. It is faster, and I can turn the mother ship faster. Transshipment. Another paradigm shift.

Changing Container Market Demands

If those are the trends, let's look at the marketplace and make sure that we are developing market against trade trends.

I had an opportunity recently to work for the Panama Canal Commission. Whose idea was it to turn over the Panama Canal? Anyhow, the last thing we do for them is give them a 40-year plan so that the Panama Canal will be business viable for the next 40 years. Panamanians are actually widening the Gaylord Cut for two-way vessel traffic, but

in 1980, the container ship was the fourth most frequently transmitted vessel into Panama.

By 2040 the container will be king. It will be the most frequently transmitted vessel in the Panama Canal, bar none. And, in fact, it will outdo every other kind of vessel. A projection we did for the secretary of transportation recently indicates that every region of our country is growing by 6 to 7 percent, compounded annually.

Every container port in this country will double or triple in volume if they maintain market share by the year 2010 and 2020. The California Coastal Commission has issued an epistle and it says thou shall have no new ports in California. So, if we don't have any new ports and we have got two to three times the cargo flow, what do we do? We divert it? Great. Have another country do it and that \$70 Nike tennis shoe of yours will be \$100. So it means the quality of life to our country and our people.

We have shifts going on like the West Coast shift. The Port of Los Angeles in Long Beach is growing. We have compression in Oakland and Seattle. Even though the actual numbers are growing, we have cargo diversions. It is a very important issue. In late 1997, Union Pacific Railroad had a problem with severe congestion at the ports of Los Angeles/Long Beach. As many as 16 ships were waiting for berths. We couldn't get ships to L.A. because of that. What happened is the elasticity of the logistics chain: cargo diversions and vessel reroutings to other Pacific ports with inbound rail capacity. Portland's cargo shot up 60 percent. Oakland's cargo volume shot up 20 percent. We need to understand the elasticity of the system so that when we have capacity issues, we can deal with them accordingly.

Let's look at the forecast for the Port of Los Angeles. The forecast for containers to the year 2020 shows a quadrupling of volume—worst case. There are eight other best cases and I don't even want to show you the best case. But the worst case is quadrupling of cargo volume. Of that volume, half will go to rail. Whoa! That is amazing. Half will go to rail.

If you don't believe the West Coast, we recently finished a study for Mayor Guiliani in his hub port analysis for the port of New York/New Jersey and we looked at channel depths against cargo forecast. For a 50-foot channel at the year 2040, there is a one-, two-, three-, four-times increase in cargo. You could build every available site in New York City and never solve this problem. So where is it going to go? That is going to affect the transportation not only statewide but regional and national planning big time. That is the cargo forecast.

Let's look at some of the innovative techniques in vessel design. On April 26, 1956, a young trucker by the name of Malcolm McLean said I am not going to take it anymore. He was shipping stuff—finished lumber products—from North Carolina to New York, and he got frustrated with traffic and he said I am not going to take it anymore. He bought T2 tankers and put his trucks onto the ship and containerization was born. Now containers are in the tens of millions across the world.

Second generation, full cellular; third generation, Panamax; fourth generation, beyond Panamax and big ships. This is the capacity in 20-foot-equivalent units, a 20-foot box. We have got a big ship out there, about 7,000–8,000 boxes a ship coming into ports.

I won't go through all of it, but let's look at the projections. The growth rate for 4,000–6,000 TEU ships in the United States is 24 percent. If you look at the real big blue, 6,000–8,000, we will start right about now and climb at 9 percent. These are the

megaships, ships so big we can't even transit the Panama Canal with them. The *Regina Mersk* is 6,000 20-foot-equivalent units.

Last summer they called ahead to the press in New York and said we are coming into New York and we can't get up the Kill Van Kull and we are going to stop in the middle of the bay and we want New York to tell us what they are going to do. And they stopped there and they did the press release. The ship couldn't get into New York.

They were putting pressure on the Port Authority of New York/New Jersey; the Kill Van Kull is rock below 45 feet. The last time I knew about dredging rock, you had to use explosives. Explosives tend to be deleterious to fish and the environment, but yet we have to somehow accommodate this. The builders of the vessels don't call our port directors up. They don't call Lillian Borrone in New York/New Jersey and say, "Lillian, I am thinking about building a big huge ship. Got any problems with that?" Nope. What do they do? They build the ship knowing we will change our infrastructure because of the logistics. So they just build.

This isn't the biggest ship. P&O Nedlloyd's megaship is 6,700–7,000 TEUs in a single ship. She is a \$100 million. If you own 300 of them, what would you say? Oh, please, oh, please, get that in and out of the port just as fast as you can because I have to pay the darn bill.

So, the international shipper says to our ports this better be fast. Get those Nike shoes on and off of that ship now. And if you don't and if you delay my ship, the demurrage may be as high as \$20,000 an hour. Naughty, naughty, naughty. Better get it out of your port real fast.

What we have now is a huge peak in an hourglass where we have good highway and good rail infrastructure and good port infrastructure, but they are separated by a narrow squeeze in an hourglass configuration. We also tend to put our highways and our rails about three or four miles from the port. I have never figured it out. There is always a neighborhood that you have to go through.

The forecast for containerized tonnage for the United States shows that any port by the year 2010 has to ask if it can accommodate ships larger than 4,000.

There is a glass ceiling. Most of our ships are single-speed, diesel-propulsion ships with a maximum capacity, single shaft, of 8,000. Anyone guess how large that drive shaft is? The drive shaft alone is 16 feet—not the propeller—the drive shaft. These are big, big ships. If the environmentalists have their way, we have to increase the speed because of air emissions, what we call dirty-sock dynamics—slang in the industry. But if we held the cost of this ship stable and added a second propulsion system, we would climb to 14,000, 20-foot equivalent units. Is that possible?

Well, P&O container says yeah, it is. We can build a 15,000-TEU ship, twice as big as any ship afloat. We can propel it; we just can't fill it. What does it look like?

It is real big, 28 containers across; maximum on the Panama Canal is 13. The ship is only 46 feet draft. The other ships I showed you were 47½. Archimedes, a very famous naval architect, said that the displacement tonnage is directly proportional to the volume of displaced water; therefore, as we get wider, we don't necessarily get deeper. In fact, as we get wider, I could melt this ship down and float it over 40 acres and have a draft of six inches. But you can see 46 feet, 2 feet of underseal clearance, 2 feet of what we call vertical ship movement; because of inertia, 4 feet on the back gives us 50-foot channels. That is kind of where we should be going.

How will you unload it? This doesn't exist yet. This is a concept we are doing for a couple of ports. It is called a ship in a slip. We normally have ships along the marginal wharves, but this would be unloaded with conventional gear. The peaking effect on this vessel would be twice anything we have seen in the United States today. It is possible that ship needs to get out of town with its Nike tennis shoes quickly, cost-effectively.

We are currently working on a plan for Fast Ship Atlantic. The French government has retained us to design the terminal in Cherbourg, France, for this ship that will go through 50-foot waves at 40 knots. Operational speed, 45. Thirty thousand tons. Eight General Electric marinized gas turbine engines, twice the thrust of a 747, controlled by a joystick, a staff of seven. It outruns an Atlantic storm at 40 knots.

Why would anyone build a ship twice as fast for that amount of money? Well, because it gets to market faster and it is something called in-transit inventory velocity. A chairman of Volvo—Roone Svenson—said they are going to put Volvos in containers. If you look at the amount of Volvos in transit before sales, it is amazing. If you can get that velocity going twice the speed, you build less Volvos. The savings is in the billions worldwide. And that is why they would do this. Interesting statistic. Fifty fast ships could transport all the nonbulk suppliers for Desert Storm/Desert Shield that it took 213 vessels flying 91 foreign flags to fight our last major war.

What are they trying to do? Now, when you talk about air, you have to use pounds, but you talk about marine, you have to use long tons. I apologize. To compare them, I have to use one of the two. Since the aircraft don't even accept long tons, I will use pounds. These people are trying to fill that gap for something called belly cargo—flowers from Amsterdam, electronics parts.

The ship is unusual; she has high gunnels. The air intake, the high-speed turbines don't like salt water because they don't work very well under water. Three main polsters each with two jets, two maneuvering jets, the doors open up in the back, and out come double-stacked trains. Absolutely amazing. This is getting very close to development. The French government is developing the terminal in Cherbourg. Philadelphia is developing the other terminal. We have had the pleasure of doing the design for the two terminals. Not one of the ships is built yet—\$175 million per ship.

Intermodal Land Side Evolutionary Pressure

Okay. I am going to end by now looking at the land side. If this is the water side of the total equation and we have to improve the land side, let's look at the evolutionary pressure there. Our railroads are doing really well for an institution. They reduced the number of terminals by about 85 percent since the mid-seventies. The revenue generation per employee has been always up since 1983. In 1984, APL moved a double-stack train to Chicago. Ten years later, 241 trains depart every week.

What happens if the world flows backwards? That affects state transportation planning big time. Okay. An eastbound train passing a westbound train. You can't see the locomotives and you can't see the caboose. We don't have any cabooses anymore. They are called end-of-train devices. A 10,000-foot train. That is two miles. Siding length, 10,000 feet. What is the limitation? Ten thousand feet. The length of the siding, not the train. Canada's siding length is 7,000. What is the limitation on their train length? Seven thousand. There are other limitations such as height clearances on rail tunnels.

A single ship, then, balancing import and export generates nine trains in and nine trains out every weekly vessel call. Alameda Corridor, going from the ports to downtown, what is the peak load in that Alameda Corridor? Ninety-five trains in; 95 trains out, peak day. I have never understood it. Why would you take all the cargo from the ports, put it in the middle of downtown L.A., and say you have won? You have to go 65 miles to the east to get to the overland common point through 65 more grade crossings. We need to think holistically about how we improve the freight. It has got to be cheaper, faster, and with higher-quality services.

So the railroad consolidations clearly will be ending up as the major hubs for our ports. A really good one here, we now have north-south. You have heard all about the NS/CSX split. Here is a \$3 billion with a billion-dollar merger of a railroad. CN/IC has a marketing agreement with KCS that reaches to Mexico. You see the big T going across this? Halifax to Vancouver, right down the middle. We are dealing on a project right now in the Port of New Orleans. It is called the Millennium Port. The port asks, "Will you plan to move all of our container facilities 100 miles and put it at the mouth of the river?" We are doing a planning study. We just reported earlier this week to the governor: 2.2 billion. Move all the contained facilities to the mouth of the river. Why? Because the ships are bigger.

Then they turn around and say, "How do I get it inland?" And they look around and we say we need an Alameda Corridor. And you know what they say? They already have a corridor. It is called the Mississippi River. We will use high-speed float technology, six Class 1 railroads, interchange at the deep water.

Why? Because it goes inland. And, in fact, with the diversionary pressures here in the northwest, we can actually show now that the intermodal movement may bypass the northwest, and that could hurt Seattle. It could hurt Tacoma, and we need to understand those cargo diversions as we plan systems approach to planning.

The port is just one of many constituents in a logistics chain. Everybody wants to improve the system, but until each player—the railroads, the carriers, the truckers—add value and receive value from the logistics chain dynamic, we won't really change the system. Think holistically. What you know today will be different tomorrow.

JAMES COVIL, *Wilbur Smith Associates*

Effect of NAFTA and Other Border Crossing Issues Affecting Statewide Planning

Let me just briefly put NAFTA into perspective. There are three parties to it: Canada, the United States, Mexico. The agreement is designed to create almost 100 percent free trade. In 1997 Canada was our number-one trading partner. They bought more U.S. goods than any other country, and in turn we bought more Canadian goods than we bought from any other country.

To the south, Mexico is our second largest export market. Further, it is our third largest import supplier. Therefore, along with Japan, we find that our neighbors to the north and south are by far our biggest trading partners.

While NAFTA has been in effect only since January 1, 1994, and it is actually not fully implemented even now, it has already produced significant economic impacts. Total

trade between the United States and our two partners in this agreement has increased by 39 percent in just the period from 1994 to 1997. In 1997, Canada accounted for 58 percent of the total and Mexico accounted for 42 percent. However, the Mexican growth rate is 18 percent per year compared to 11 percent for Canada, so you can see the gap is closing.

One reason for this fast growth has been an acceleration in certain business trends (Figure 1). NAFTA allows greater exploitation of the twin plant operations where certain production processes are located in different countries.

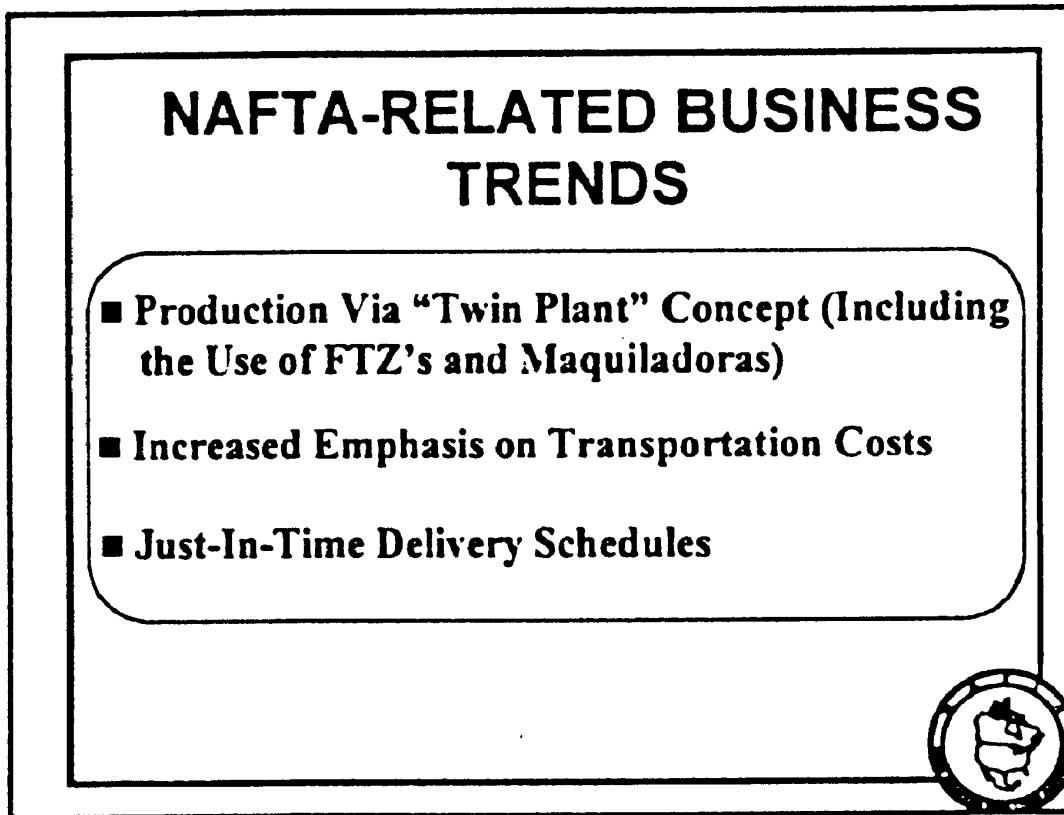


Figure 1

This allows industries to take advantage of international differences in labor markets and production costs. I will show you a real example of this in a moment. In turn, that geographic separation of production activities places a greater emphasis upon transportation costs. They become a much larger share of production and distribution costs.

I will describe an example from a study we did for one of our clients. The client produces state-of-the-art air bags. High-performance fibers are produced in South Carolina. They are shipped to Mexico, where they are cut and sewn. Certain component parts are produced in Canada. The steering wheel case is produced in Ohio. Final assembly of this product occurs in North Carolina, and then the finished product is distributed both domestically and internationally.

While we have used the term *twin plants* to describe this kind of operation, it really is a multiple plant operation on an international scale. Clearly this type of production process has significant transportation implications. The one that has received the most attention to date has been the matter of congestion at our international borders. Because it has received so much attention and because it is exclusively an issue for the border states, I won't dwell too long on it in this presentation.

What this border congestion involves is simply a lot of cars and trucks going back and forth across the border. There are infrastructure issues and there are institutional issues, as well. You have multiple federal and state agencies on each side of the border. In our country, we have customs, immigration, vehicle inspections—all of them wishing to keep their little operations separate.

An innovative approach that is being given a lot of attention is to perform these functions for good vehicles at locations away from the border and then seal the cargo compartment so that the goods can pass through the border crossing with the minimum amount of congestion. Obviously, the use of ITS technologies to accomplish this holds much promise.

Since this conference involves a lot more than just the border states, I thought it appropriate to identify some geographically broader concerns. Gary Maring said that trade transcends geographic boundaries. The air bag example I gave you certainly shows interregional and international flows.

If you consider all of the other products, the Nike tennis shoes and all that sort of thing, which involve multiple-site production, then trade flows through corridors becomes an issue that needs to be addressed not only by border states but interior states as well.

Many states have had to deal with the matter of high-priority corridors designated by Congress. The ISTEA legislation designated 21 of them. Then we have the NHS Designation Act that added 8 more and then the TEA-21 legislation added another 14 corridors.

Of these corridors you will find that only Corridor 3, called I-66, is a long east-west corridor. In its original definition, it is extended from Virginia to California. We had the pleasure of looking at that route for about a year in a feasibility study and we found it was not economically feasible as a coast-to-coast facility.

All the other designated corridors are north-south oriented. This north-south orientation has very interesting implications for NAFTA trading. Several of these corridors are receiving attention as a facility for handling NAFTA freight flows. Started on the west (Figure 2) you have I-5, which continues to be an important NAFTA trade route. Then there are the proposals for the CanaMex and the Camino Real corridors, that have their supporters.

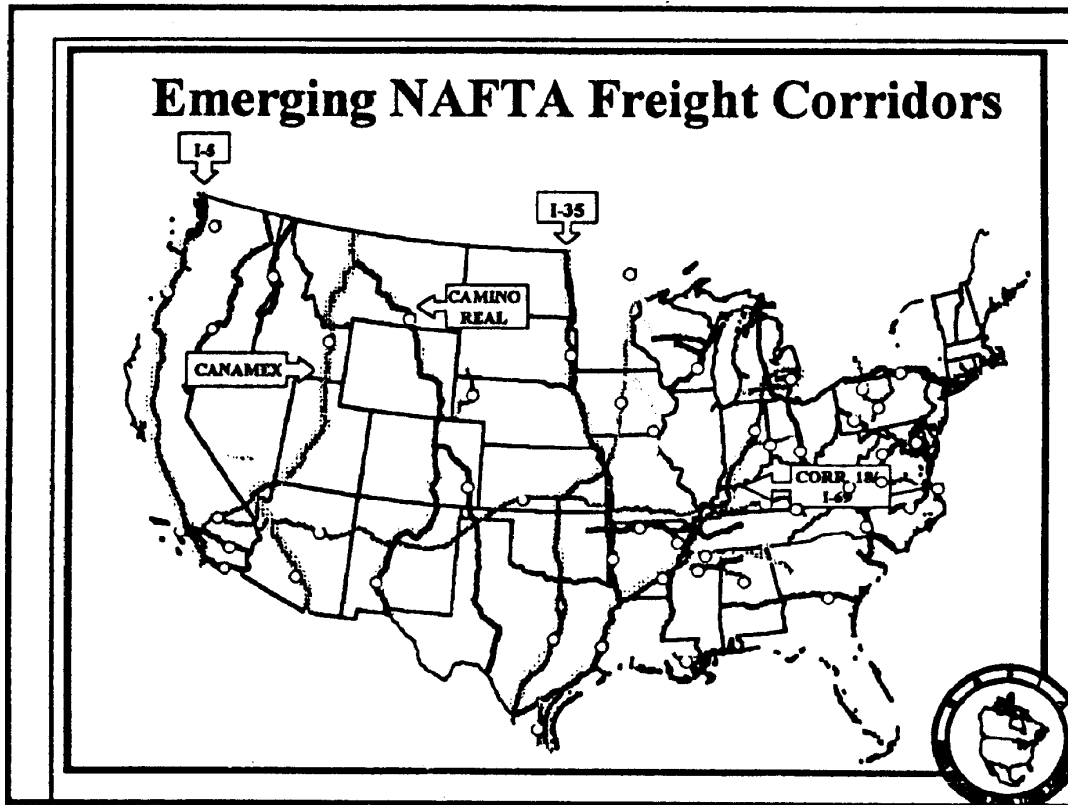


Figure 2

There is an ongoing study on I-35 in which I am involved; the study is looking at upgrades and expansion of the existing facility as well as other strategies such as ITS and maybe even shifts of freight to railroads if we can accomplish it.

I am also involved in the I-69 corridor study. That is, again, another facility from the Canadian border to the Mexican border. The findings of that study show that this facility would facilitate very substantial interregional freight loads within the United States as well as serving the NAFTA trade. The findings of the study also show it to be very economically feasible.

As we look at freight flows in NAFTA corridors, many of the alternatives, obviously, are focused on trucks. For example, the I-35 study I mentioned looked at exclusive truck lanes. It looked at increased truck sizes and weights. It looked at advanced clearance of trucks and their cargoes prior to reaching international borders.

The I-69 study looked at increased size and weights of the trucks in a mixed-traffic operation, which involves heavier pavements and bridge designs. It also looked at staging areas for assembly and disassembly of LCVs so that they could operate on conventional facilities after leaving I-69.

The I-69 study found that the truckway concept improved the economic feasibility of a facility that even in conventional terms was feasible. The reason for this was that the reduced freight transportation cost was much greater than the increased facility costs, the capital costs. But the study also found that there was major resistance to the concept.

States naturally are reluctant to put scarce resources into facilities which exclusively benefit trucks.

On the other hand, truck companies, of course, want to operate the LCVs, which clearly have significant operational efficiencies. We are confronted with the two-pocket dilemma. Out of one pocket we take money and we build a facility, and into the other pocket we put the benefits of that facility. Of course, the truckers are most reluctant to increased fees and tolls to pay for these special facilities.

There are also some rail-based changes that could be considered for NAFTA corridors. This, of course, involves implementation within the private sector. On the I-35 corridor we considered shifting traffic from trucks to rail. Then we need to consider how do we make it happen? What do we have to do to cause such shifts? And then probably the most frustrating thing was that having even assumed that we could shift substantial amounts of trade, we found that many of the improvements on I-35 still would have to be made eventually anyway. So, it was kind of a catch-22 thing.

The privatization of the Mexican rail system is also a factor that we have to consider in this planning. The sale of government railroads to the private sector is a high priority with the Mexican government. Their policy is to require at least a 51 percent ownership by Mexicans. As a consequence, rail companies, such as the Kansas City Southern, Union Pacific, and the Canadian National Railway, have formed partnerships to take advantage of these opportunities.

Another important potential is the effects of the Kansas City Southern effort to create the NAFTA railway. It involves a number of operating agreements for service, reaching as far south as Monterey and Mexico City, coming across the border at Laredo, extending up to Kansas City, with connections to Chicago and into Canada.

There are a number of obstacles to change (Figure 3). While the lower cost of rail certainly is an advantage, there are serious disadvantages regarding certain service attributes for certain commodities as compared to trucks. Further, there are some issues regarding rail capacity in places where it is needed to serve NAFTA trade. Clearly, we are going to have to have more alliances if we are going to create the long hauls that are required if it is going to serve NAFTA trade. Also, the railroads, of course, are very concerned when proposals consider increasing truck size and weight. These are the typical things we have to look at in these road verses rail tradeoffs.

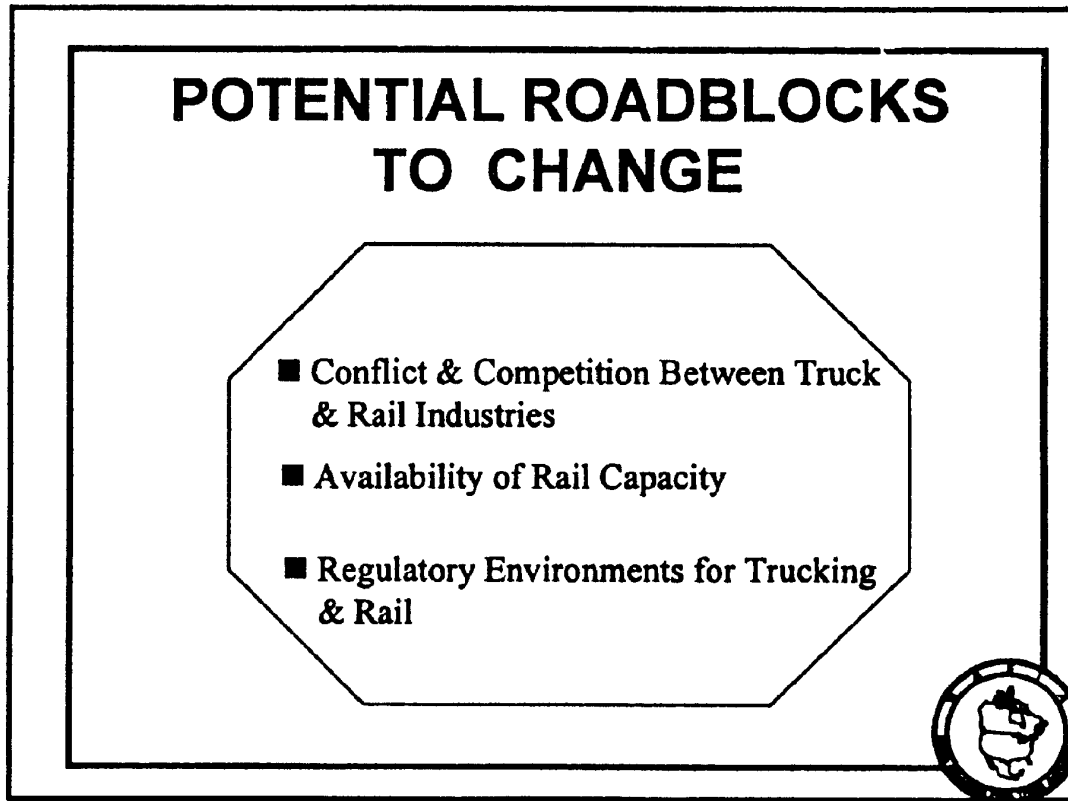


Figure 3

Now, as we consider NAFTA trade as part of our planning activities, there are also some institutional challenges as well. It may seem trivial to you but language differences are an issue. In particular the magnitude of the problem could grow if the United States implements the NAFTA provisions that would permit Mexican trucks to travel beyond that narrow trade zone in our southern border states.

A recent study by our firm found that regulatory and warning signs were not really a major problem because there is pretty much consistency in the three countries. However, route guidance signs are a real challenge to those who are unfamiliar with the English language and with the local environment. We have limited destination data on our guide signs and quite often we use confusing words and abbreviations.

The regulation of truck size and weights is also a matter of high priority (Figure 4). All three nations have different regulatory environments. In Canada and the United States you have the federal and the state level of governments. In Mexico you have that same structure but with regards to truck size and weights, the states have deferred to the federal government. Altogether, there are 64 individual jurisdictions that regulate size and weight.

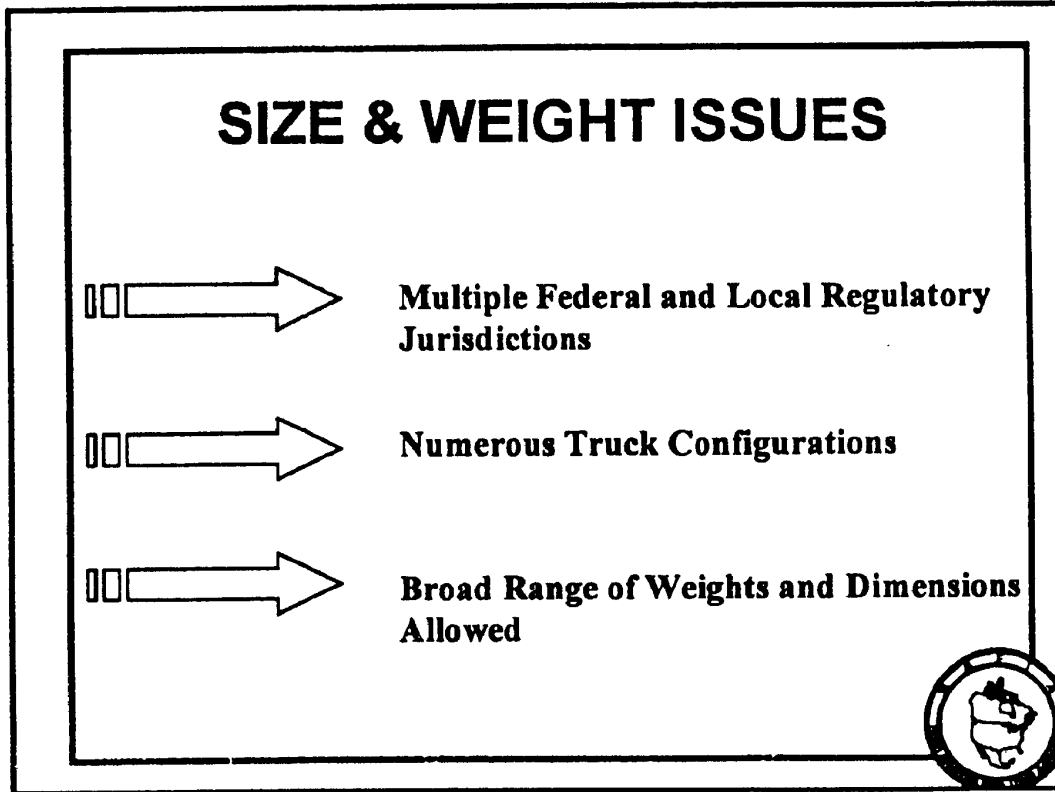


Figure 4

Variations have quite significant impacts on the operations of trucks and the economics of transportation. Let me briefly note, however, that there is a land transportation standard subcommittee that was created under NAFTA. Unfortunately their efforts have been hampered by a requirement that there be unanimous decisions on such matters. In the absence of unanimity existing regulations of the pertinent jurisdictions apply.

Another concern relates to truck parking at rest areas and other roadside areas. Two studies done by our firm, one for Ohio and one on a national scope, have documented a very substantial shortage of spaces for large trucks. As a consequence, there is increased truck parking on rest area shoulders and on entrance and exit ramps. The severity of this problem is expected to increase over the next several years in the absence of a significant initiative. And I frankly don't see one.

Another matter of serious concern to the current administration is related to the safety features of Mexican trucks. In fact, it is this argument that has led to the deferred implementation of NAFTA provisions that would have allowed Mexican trucks unrestricted travel in the United States. In the United States we put considerable emphasis on the ability of trucks to accelerate and brake appropriately so as to be compatible with other traffic. Further, their size and weight and load stability features must be such as to not inhibit driver control.

The concern about the safety features of Mexican trucks is partially demonstrated by the findings of a GAO study in 1997 and further data that has been obtained since that

time. The out-of-service rate for Mexican trucks was 45 percent in 1996. It improved only slightly to 44 percent in the next year and to 42 percent in 1998.

While that improvement is still substantially higher than the 28 percent rate for U.S. trucks, the differences can be partially explained by the age of the Mexican trucks, which average 15 years compared to about 4½ years in the United States.

In conclusion, it is clear that NAFTA has already delivered on some of its promised benefits. Trade has increased. Real U.S. wages have increased for the first time since 1979. And there has not been that giant sucking sound predicted by one of our politicians. Whether for good or evil, NAFTA is a reality and it is producing challenges that need further attention as we plan our transportation systems. There are growing pains that one would expect when nations with vastly different economic, cultural, and political characteristics seek to be a united entity regarding trade.

For Canada and the United States to continue our steady expansion and for Mexico to continue its economic evolution, planning of transportation systems to accommodate these international trade flows is essential.

DEE SPANN, *Federal Highway Administration*

Motor Carrier and Safety Issues Affecting Statewide Planning

I am going to cover the safety aspects of statewide planning and some of the thoughts that we in the FHWA have in this area.

Thank you for the opportunity to talk about an issue as important as safety in the statewide planning process. FHWA and DOT strategic plans place safety as a driving goal. To quote Secretary Slater, "Safety is our North Star." It is a major emphasis area in our flagship initiatives, which are driving our budgeting process currently.

Meeting our performance objectives is dependent upon our customers' actions, and this includes actions regarding planning and implementation of appropriate measures to improve safety of the transportation system, actions to help us reduce the 42,000 deaths that occur on our highways each year.

Figure 1 shows you actions by one of FHWA's major customers, the state DOT. AASHTO's Strategic Highway Safety Plan provides guidance to substantially reduce vehicle-related fatalities and injuries on the nation's highways. It doesn't specifically refer to the transportation planning process, but there are several issues mentioned as key requirements in that AASHTO plan which, in the classic sense, are planning types of activities.

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AASHTO Strategic Highway Safety Plan

Key Requirements

- **Performance measures**
- **TQM Principles and evaluation criteria**
- **Empowered customers**

Strategies

- **Collaboration**
- **Information technology**
- **Plans and programs**
- **Public involvement**

Figure 1

For example, performance measures must be utilized to judge the value of the plan strategies. Total quality management principles and evaluation criteria must be employed to help ensure that the impact of safety products produced in all federal, state, and local programs is continuously enhanced. States and other customers must be empowered to decide how best to use funds to reduce deaths and injuries.

Several of the strategies mentioned in the AASHTO plan deal with planning-type issues, also. Collaboration among parties interested in safety issues is a key strategy. Use of information technology to properly collect, analyze and report safety data to decision makers, develop and implement comprehensive plans and programs to address identified safety needs and problems is another. Then, finally, developing comprehensive public involvement programs to facilitate plan and program development and implementation is a third strategy.

TEA-21 speaks to safety in a variety of ways. Besides increasing in the overall funding for safety, TEA-21 kept the emphasis on safety among all FHWA's activities. This means planning and programming must keep safety as a major consideration.

Some specifics regarding TEA-21. It continued the 402 program for encouraging driver behavior changes and the major funding for state programs. It expanded motor carrier safety funding, emphasizing enforcement on the bad safety performers.

Elimination of identified safety hazards and improving rail crossings are emphasis areas for infrastructure safety in TEA-21.

TEA-21 calls for 10 percent of the federal STP funds to be used for safety. One of the planning factors deals with safety and security of the transportation system. And emphasis in the borders and corridors programs is safety and especially efficient and effective motor vehicle safety inspections at the borders with Canada and Mexico.

Motor carrier safety funding focuses on ensuring safe operations of motor carriers throughout the country and was increased by 38 percent under TEA-21. Planning and funding for nonborder safety inspection facilities needs to be worked through the transportation planning process. Virginia and Minnesota are examples of two states that are doing some good work in this area of planning and implementing inspection facilities.

The U.S. DOT's organizational structures emphasize safety. NHTSA emphasizes safety regarding private vehicles, new commercial vehicles, and private drivers. The Office of Motor Carrier Safety emphasizes safety regarding commercial freight and passenger vehicles and commercial drivers. The Office of Highway Safety emphasizes safety regarding the highway system itself.

FHWA's recent reorganization consolidated safety into one of five of our core business units. The core business units are the units for addressing the major FHWA business areas. This consolidation into one core business unit doesn't mean that safety is not a concern of the other business units. Rather it means that FHWA is emphasizing the extreme importance of safety in all of our activities. In fact, as you have heard me before, and I will say again, Secretary Slater emphasizes safety is our North Star, and that means it is important in all of our work, including planning.

Safety in the planning process involves widespread collaboration around transportation safety issues, including broadening the range of entities involved. We were surprised to discover when we took a hard look at the planning legislation and regulation how little safety is mentioned.

In light of that, we are attempting to make special efforts to refer to safety issues as appropriate in our efforts at revising the planning regulations. We do not intend to prescribe in the regulation how safety is to be considered in the planning process, but we hope to emphasize the importance of its appropriate consideration within the planning process.

When you look at the research topics that have come out of the recent two conferences that resulted in a national planning research agenda to help all of us to focus planning for the 21st century, it is interesting to note that only one out of 106 specifically addresses safety.

Is this an indication of where safety appears in the priorities for the transportation planning community? We need to think carefully and seriously about what our priorities concerning safety should be.

Now, let's talk about some things that can be done to better consider safety in the planning process (Figure 2). This is a summary from a recent document that was an internal document within FHWA, FHWA's Safety Integration Team. We will just talk around some of these issues.

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Safety in the Planning Process

KEY POINTS	SAFETY ISSUES	DATA NEEDS	TOOLS
GOALS	Advisory committee Specific objectives Establish priorities Policies	Accident trends	Public hearings Focus groups Surveys
GOALS	Strategies Design standards	Existing conditions Road inventories Costs	SMS HPMS TMG
PLAN DEVELOPMENT	Program priorities Goals Funding restrictions	Revenue forecast Safety funding trends	Revenue model Traffic model
PRPROGRAMMING	Geographic equity Project priorities Goals	Regional allocation Accident location Integrated data Project level data	Sufficiency ratings Economic analysis
EVALUATION AND PERFORMANCE MEASURES	Plan effectiveness Program effectiveness	Accidents linked to program strategy Accident trends	Statistical Analysis Special studies

Figure 2

As goals are established for the transportation planning process, attention should be given to safety. Specific safety issues can be identified and specific safety objectives established to address the identified issues.

Stakeholders representing safety interests can get involved, possibly through safety advisory committees or through a more general advisory committee for the planning process with one of its focuses being safety. Safety’s identification as a priority of the participating agencies will help to focus the planning process on safety issues as appropriate to the particular geographic area.

Policies of the participating agencies on issues such as speed regulation and enforcement, size, and weight, etc., can have a major impact on how safety should be considered in the planning process. The planning process identifies mobility and productivity needs in terms of capacity and access. It could address safety needs in terms of crashes, injuries, and fatalities.

High-hazard locations can be identified and analyzed on a systemwide level. An Ohio MPO included in their plan ways to address the region’s rail highway conflicts. Information-management systems like GIS are useful tools to help in collecting analyzing reporting and displaying safety data. Mississippi and Iowa are examples of states that are doing some good work in this area.

In developing the plan and program, recognition of limited funding is essential. This includes limited funding to address identified safety issues and concerns. This means that priorities must be set to utilize the limited funding available to meet all the identified needs, including identified safety needs.

Safety management systems, as you recall, were required under ISTEA and later made optional under the NHS Act. Where a safety-management system exists, it can provide invaluable input to decision making through the planning process.

Figure 3 shows the definition of the safety-management system from the interim final rule on transportation infrastructure management. You can see that planning is part of the definition. The groundwork is there among the thinking that went on at the federal level and at the state levels as you all began implementing management systems. Many of state DOTs have continued safety management systems. Planning is still an important aspect. Management systems that consider safety are important aspects of planning.

Safety must be a factor in whatever prioritization mechanism is employed in making difficult financially constrained decisions. Sufficiency ratings have historically included the safety element as sections of roadway have been rated. When economic analysis has been used to prioritize projects, the main economic benefits have traditionally included reduction in accidents.

The Arizona DOT's programming procedure utilizes the quantitative ranking of safety considerations. The Denver MPO includes safety as a project prioritization criteria.

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Safety in the Planning Process

Safety Management System (SMS) - "...a systematic process that has the goal of reducing the number and severity of traffic crashes by ensuring that all opportunities to improve highway safety are identified, considered, implemented as appropriate, and evaluated in all phases of highway PLANNING, design, construction, maintenance, and operation and by providing information for selecting and implementing effective highway safety strategies and projects." (Interim Final Rule: Transportation Infrastructure Management)

Figure 3

Finally, evaluation and performance measures are gaining support throughout the transportation planning community. We certainly heard that in the session this morning. We see states preparing annual reports on accomplishment of established goals, and safety is always there.

Before-and-after studies are often useful tools in doing safety evaluations. Before-and-after studies are one of many established tools such as safety audits, information management systems, sufficiency ratings, etc., that can be successfully adapted for use in the transportation planning process.

I am going to give you some more examples here. I have to give credit for the identification of several of these examples to the FTA, which has just begun a survey activity of states and MPOs as to how they are considering safety in the transportation planning process.

Safety audits are traditionally done on a facility or corridor basis, but I don't see that there is anything that would prohibit them being done on a systemwide basis, except for maybe time and resource commitments and volume of data that might be collected. A Michigan MPO and a Wisconsin MPO have specific safety policies identified for use in their transportation planning process.

A Tennessee MPO is doing a regional incident-management plan, which addresses issues related to safe traffic management around incidents. A group of six citizens in a Texas MPO took corridor accident information to the MPO; and the MPO, the state DOT, and the transit agency responded with corridor safety improvements.

Information-management systems can improve the quality and analyses of data on hazardous locations, thereby enabling the development of more effective safety management programs and projects, more accurate and graphic displays of accident information, facilitate better communication to the public and target audiences.

A North Carolina MPO has developed a GIS map of streets to identify hazardous areas and developed a list of projects to respond to these hazardous situations. These are examples of adapting existing practices, but there are some more unique opportunities and challenges that have been met regarding safety and planning.

One state has worked with an MPO to hire a safety engineer, using primarily PL funds, to assist the MPO in considering safety and traffic issues within the planning process. In the case of multiple MPOs, a pooled-fund effort could be established to hire a safety engineer who would basically operate like a circuit rider, providing safety and traffic technical assistance to several MPOs.

For each metropolitan area in a state, the Top 10 accident locations could be identified annually and actions taken to address these in plan and STIP/TIP updates. Two Florida MPOs have instituted monitoring systems to identify high-accident locations.

There are new planning terms that are coming on the transportation planning horizon; terms like inherent safety, sustainable safety, safety conscious planning. These are all aspects of a new planning philosophy in which safety considerations can be explicitly dealt with and treated on a par with mobility and the environment as major considerations within the planning process.

These are all sort of rather complex things or maybe difficult things that could be done. There are some simple things that could be done to better address safety in the planning process: creating a focus and initiating a dialogue on safety at routine planning meetings; categorizing safety projects into the plan and program; emphasizing the safety features of the plan and program to policy makers to sensitize them more to the need to do safety considerations within the transportation planning process.

The bottom line is that we as planners need to take our blinders off and realize that safety is an important issue for consideration in the planning process. We must

encourage one another to seriously and effectively plan and implement safety improvements that will improve the safety of the transportation system to save lives and reduce injury and property damage.

Safety is important to all of us. We must open up lines of communication between safety folks and planning folks so that we all strive together to point our efforts and products toward the North Star of safety.

MARSHA KAISER, *Maryland Department of Transportation*

Effect of Rail Mergers and Other Intermodal Trends on Statewide Planning

Maryland has played an integral role in the shaping of the history of the rail industry in the United States. America's first railroad, the Baltimore and Ohio Railroad, was started in Baltimore in 1828. CSX grew out of the B&O Railroad. Prior to the merger, CSX and Conrail operated through much of the state, while Norfolk Southern had limited trackage rights within Maryland. Freight services in total were provided by 12 different railroads, many of them short-line railroads located throughout the state.

These railroads annually carry approximately 73 tons of freight on 913 miles of rail line (220 of which are state-owned). Over 2,000 Maryland citizens are employed in the rail industry and related businesses that depend on rail lines to receive and send products. The railroad industry is of great importance throughout Maryland: from western Maryland, which relies on the industry to transport its coal, to the Eastern Shore, where timely rail service is vital to get grain to the poultry farms, to southern Maryland, where transport of products is of concern to the numerous sand and gravel operators.

The Port of Baltimore enjoys the benefits of competition between two independent railroads. This competition provided shippers with choices and rate benefits for the port, where nearly 16 million tons of freight are transported by rail annually. Also important in light of the merger, is Maryland's extensive commuter rail service, a critical element of our integrated transportation system. The commuter rail system operates on tracks partially owned by CSX and on the Amtrak northeast corridor. The looming rail merger provided very uncertain futures for our commuter rail services.

The Merger

On October 14, 1996, CSX and Conrail announced their intent to merge. This announcement was followed on October 23 with an all-cash offer to Conrail stockholders by the Norfolk Southern Railroad. This set the stage for an all-out battle that could have had serious consequences.

Maryland reacted very quickly and immediately expressed its concerns to the railroads about the possible loss of competition for Maryland business and customers, as well as effects on commuter rail service in Maryland. While the ultimate merger decision was a private business decision, Maryland needed to protect its interests. A rail merger team was formed by the governor within two weeks of the merger announcement by CSX and Conrail. The team included the state secretaries of transportation and business and economic development, leaders from all commodity groups of importance, and several

expert legal and transportation consultants.

The Rail Merger Team thoroughly analyzed the situation. Rail customers were identified, along with their competitive needs and a determination of whether they currently had access to a Class 1 railroad. The analysis further identified those who potentially could be harmed by the merger. The legal rights of the state in relationship to the merger process were also examined.

The team quickly developed an action plan that established six key goals from the merger for Maryland:

- Preservation of competitive service by two Class 1 railroads to the east and west as well as to the north and south;
- No reduction in jobs for Maryland;
- Assurances that Class 1 carriers have full competitive access to the customers;
- Commitments secured from the carriers for infrastructure improvements necessary to achieve the asserted benefits of the mergers;
- Preservation and enhancement of MARC commuter rail services; and
- Commitments secured to existing rates and service.

With the goals established, the state negotiated directly with the railroads for commitments to include service and facilities in the merger applications to the Surface Transportation Board (STB). An all-out media effort was launched to publicly express the state's concerns. The state also prepared for proceedings of the STB by collecting information to confirm the importance of an equitable outcome for Maryland.

Meanwhile, the merger progressed and the pressure between the railroads intensified. Perhaps the most notable step in the process was the urging of the STB for a competitive merger between the parties. After intense negotiations, the railroads filed a joint application for restructuring in June 1997. In the end, an STB approval was granted for a merger of Conrail with CSX and NS on August 1998. On June 1, 1999, implementation began of the most thoroughly planned and extensively studied transaction in rail history. Though not without many challenges ahead, it promises to provide most of the advantages Maryland was working toward. Measured against the goals Maryland established at the start, the state appears to be better off than anticipated.

Beyond the Merger—Statewide Planning Issues

The merger, however, underscores the need for adequate planning to ensure that rail freight services maintain the competitive edge that is so important to its users. Important, also, is the need to understand and appreciate the significance of rail freight services to the statewide transportation system. What follows is an examination of a few of the key effects of the rail merger and other intermodal trends on statewide planning processes.

Industrial Rail Site Identification and Growth Potential

Restructuring of the rail system in Maryland should stimulate economic growth that benefits from two strong railroads competing against each other. The new single-line service and increased rail competition should encourage companies to consider plant sites

in locations previously ignored due to poor rail service options. Since rail freight crosses regional boundaries, shippers will be able to expand their market reach and customers will have a greater choice of suppliers.

Intermodal service has been the fastest-growing segment of rail traffic this decade—an increase of 70 percent since 1989, according to the American Association of Railroads. North-south intermodal volumes in the eastern United States has grown more slowly than elsewhere during this decade due to the non-competitiveness and little desire to invest in intermodal. Considered the first intermodal merger, the NS/CSX deal should change this, especially in the I-95 corridor, which lacks circuitry. In the past, intermodal service meant “truck service plus a day.” The merger should level the playing field in intermodal services.

Key planning issues include a current inventory of new and potential rail sites for industrial growth as well as good tools for projecting the growth potential and needs for intermodal services. Comparative methodologies to accurately project the cost-benefit ratio and other critical factors for capital investment decisions are also pertinent from a statewide planning perspective. Freight transportation demand projections and identification of infrastructure shortfalls need to become an integral part of the overall planning process.

Unit Train and Other Possible Operation Efficiencies

Since the advent of the interstate highway era, rail freight has to some extent become the weak link in the transportation network. While mathematics may tell you that the shortest distance from point A to point B is a straight line, this is not a lesson that can be learned from a study of the railroads. The shortest distance between points A and B in cargo transport often involves transfer of cargo between two or three rail lines. Each interchange between railroads often adds a day or more to the transport time.

While the rail industry has an been logging a 95 percent on-time average, the trucking industry has been running at a 99.5 percent on-time experience. In a world where just-in-time inventories are so important, increased efficiencies anticipated from the merger may allow rail freight to become more competitive with the trucking industry. Rail can do well when it operates like a truck!

What will be important to ensure that rail can operate like the trucking industry? That is, the velocity, the volume, and the schedule of the service cannot be impeded. Statewide planning efforts need to address the adequacy of the rail lines in much the same fashion that we examine the condition of our highways. Congestion of the rail lines and an identification of mitigation potential also deserve examination. Major intermodal corridors and connectors and the deficiencies that impede traffic flows require examination if operational efficiencies are to be achieved. Further needed is performance-based criteria for monitoring, evaluating, and managing freight movement systems.

Important, also from a statewide planning perspective, is the identification of movement of large tonnage of cargo that could better be served by rail, efficiently and perhaps at a better rate. Key to these identified needs is information on the origin and destination of goods in excess of over a half ton per year. Heavy loads carried by one unit train, instead of numerous trucks, provide less wear and tear on the infrastructure and possibly less in terms of maintenance costs. It has been projected as a result of the

merger, at least 19 million fewer truck miles will be driven on Maryland highways through the increased rail capacities, which will save the state more than \$2 million on highway maintenance costs alone. In a region that ranks second in the nation in terms of highway congestion (and only 12 percent of the intercity freight is transported by rail), planning should ensure this diversion can occur with a service quality near highway service quality.

Terminal Service Enhancements

Expansion and enhancement of rail services at the Port of Baltimore is extremely important if the port is to remain a strong economic driver for Maryland. The port serves as a key terminal for intermodal transfers, being served by CSX, NS, and the Canton Railroad, a shortline railroad controlled by the Maryland Transportation Authority. Competition between the railroads provides a choice for shippers and rate benefits for the port and other rail users throughout the state. Improved rail services at the port will depend upon a clearly defined strategy to eliminate serious obstacles to the continued development of this link in the intermodal system.

Jointly Integrated Long-Term Planning for Passengers and Freight

Competition and service expansions of freight as well as passenger rail services are of great concern. While movement of goods by rail are important to the economy of the state, movement of people is just as important. The newly defined service calls for additional freight trains on the same line that our MARC service runs, a service that is also targeted for expansion under a statewide goal of doubling transit ridership over the next 20 years. The NS line operates on the same track as Amtrak's northeast service. What is to become of Amtrak, and how will it impact passenger and freight rail services? Commuter rail service is a key element in the state's efforts to reduce traffic congestion, enhance mobility, and improve air quality.

Careful planning must occur to safeguard the availability and expansion of commuter rail services in a manner that is consistent with freight services. We must answer the question what do we want and why? There will always be a limit to the trackage available and financial/funding limitations. While TEA-21 provides a less-than-adequate level of funding for transit services, rail freight services lack federal funding since elimination of the subsidies to Class 1 railroads in 1977 and the Local Rail Freight Assistance Program in 1994. This despite a 4.3 cent-per-gallon federal tax on diesel fuel, which is engulfed in the general fund. There is a great need to determine what information is required and available for decision makers to compare and make intermodal and cross-modal tradeoffs. In addition to better tools and access to better information, which is often considered proprietary, we need new approaches to reconcile the public and private sector needs and the passenger and freight services' needs. We need to make stronger attempts to all interests, both public and private and passenger and freight, in the statewide planning process if we are to truly develop a multimodal, intermodal transportation system that efficiently and effectively addresses the needs of the future.

Issues of a New Generation of Heavier Rail Car Weights

Since 1994, newly manufactured rail cars have been increased in car weight up to 286,000 pounds in capacity. This benefits the railroads in several ways:

- An increase in payload from 100 net tonnage to 125 net tonnage.
- The ability to generate more revenue at less cost.
- Less cars to switch.
- The ability to better compete with trucks (5-1 ratio).

The customer also benefits through a savings of up to 10 percent on freight charges, less labor needed to load and unload cars, and an overall impact that varies by the relationship of the total freight costs to the total manufacturing cost.

This growth in heavier cars carries with it the increased need for heavier weight of rail and the associated maintenance costs that go along with the impacts of the heavier loads. Although the Class 1 railroads are operating increasingly with the heavier rail car weights, the greatest impact is felt by the shortline railroads and the regional lighter weight of railroad trackage. It has been estimated that approximately one-third of all rail freight service is carried by shortline railroads. The cost for upgrading the regional rail lines to handle the heavier cars is estimated to be between \$1 and \$5 billion nationwide. The greatest long-term threat to the viability of the shortline railroads is their ability to handle the heavier load.

The impact of the newer heavier rail car needs serious consideration in determining the statewide infrastructure needs and should be addressed through the planning process, much as new technologies and truck size and weight are considered in assessing highway needs.

Shortline Railroad Relationships

The CSX/NS/Conrail merger leaves only four major Class 1 railroads in the United States today. Rail lines, service capacity, and site availability are limited as more restrictive land zoning is enacted. The void created by the limits on industrial sites on Class 1 railroads can be filled by shortline railroads.

Issues relative to the Class 1 railroads in relationship to statewide planning tend to carry over to some extent in the consideration of the shortline as a viable component of the overall transportation system. Regular assessments of operating conditions, carloading trends, and weight preferences are of relative importance. Planning issues include economic development, rail safety, modal balance in transportation, the competitiveness of rail transportation, and financial investments. Careful attention to planning can ensure preservation of rail services, which is important to the balance of the statewide transportation system.

Summary

This presentation examines just a few of the issues faced by statewide transportation planners in considering infrastructure planning and investment cohesively in an era where

the economy is as dynamic as the trends of the intermodal industry. Intermodal and rail freight services will continue to have a growing importance. We, as professional planners, must be aggressive in pursuing meaningful relationships between the private/public sector and in determining the needs in the delicate balance between the various modes of transportation.

SUMMARY OF DISCUSSION

The discussion centered around how states can plan, cooperate and implement solutions in multi-state corridors. The example of looking at marine transportation and intermodal shipping as an alternative to highway congestion on I-95 along the East coast was raised as an example. There was consensus that states can cooperate in planning studies. These studies should look at all possible alternatives. However implementation of multi-state strategies is still an outstanding question. Can we get cooperation without federal funding driving the cooperation such as was done to build the Interstate Highway Program?

There was also discussion on the effect of increasing ship size on shipping cost. Generally, a 50 percent increase, that is, from 4,000 to 6,000 TEU, would yield 15 percent in savings.

The remaining discussion was on the impact of modal shifts on state transportation programs. For example, if there were a large shift from truck to rail, it would affect state highway user revenues as well as have facility impacts. The collision between profit-based/market-based private sector pressures and public policy-driven programs regarding modal split can be minimized by having all the stakeholders involved in the dialogue.

SUMMARY OF WORKSHOPS

The speakers set the stage for this by telling us that freight travel is going to double by 2020 or maybe even, in some cases, triple. International trade is going to go up at about the same rate. Yet there is little attention given to freight transportation and, particularly, freight planning. Freight is invisible to the public. There is really a lack of statewide freight planning.

Issues

- First of all, there is a lack of freight data. There is a lack of information on what commodities are being shipped, what modes they are being shipped by, where they are going, where they are coming from, and so on. This is really made worse, even, by the fact that most freight shipments also cross state lines. They also cross international borders.
- There is also a lack of freight knowledge. We really don't understand the decisions that the freight industry is making. They are essentially private companies. We don't understand them, and they don't really understand us.
- What is the state role? These are private firms. We represent state governments. What is our role? Are we going to use highway user fees to fund rail improvements? Should we be providing public money to these private

companies when they are making a profit? Taxpayers may not like that, so just what is the state role?

- We have freight forecasting needs. Just as we don't have good data, we don't have good forecasts, and obviously you have to have the good data to be able to make the good forecasts.
- What are the safety impacts? We have heard a lot about the safety problems at rail and highway crossings, disruptions in communities, problems if there is an increase in truck size and weight, those kinds of issues.
- What are the environmental impacts? If we expand the size of ports, there is obviously a water impact. If we dredge the ports deeper, there is obviously a hazardous waste disposal problem.

Challenges and Opportunities

- We need to increase our freight knowledge, find out more about what is going on, partnerships, so that the public does understand decisions made by the freight industry.
- Develop private/public partnerships.
- Seek AASHTO and TRB assistance. They could provide a role in this area, in helping to develop knowledge, acting as a facilitator between different states, different levels of government, between the government and the private sector, the businesses that provide the freight service, and also in promoting research into the area of freight transportation.
- There should be more coordination at the state level with the funding. There is an example of projects that involve federal money from the different federal administrations, something from federal highways, from FRA, and so on, and that needs to be better coordinated.

Research Needs

- Improve the data so that we do know more about what is going on, what is being shipped where and when. Maybe we need a national survey of commodity flows, because there is that lack of information.
- We need to develop more safety knowledge. Truck size and weight has been studied probably for many years in great depth, but obviously it is still an issue. Grade crossing problems are still something that we need to research.
- We need to try to develop exactly what is the state role and bring different groups together to talk about that, bring in the private sector, the freight providers, and the shippers.
- We need to improve communication. In order to develop public/private partnerships, we really need to understand one another.
- We need to improve freight forecasting. We don't have good data for the future. When we are talking about something tripling in the amount of freight flow, we need to have a better handle on it.