

**AASHTO**



**Transportation, International Trade,  
and Economic Competitiveness**

*Presented by METRANS Transportation Research Center  
Sponsored by the American Association of State Highway and Transportation Officials*

**NCHRP Project 20-24 (23) B**

**SYMPOSIUM SUMMARY**

October 25, 2002  
Hilton Long Beach  
Long Beach, California

NCHRP 20-24(23)B

# Transportation, International Trade and Economic Competitiveness

## **Proceedings of the Symposium**

Held in Long Beach

October 25, 2002

Report Prepared by:

**Ajay Agarwal and Sukriti Agarwal**

School of Policy, Planning, and Development

University of Southern California

*This work was sponsored by the American Association of State Highway and Transportation Officials, in cooperation with the Federal Highway Administration, and was conducted in the National Cooperative Highway Research Program, which is administered by the Transportation Research Board of the National Academies.*

The conference summary is posted at the following website:

<http://www.metrans.org>

**METRANS Transportation Research Center  
USC / CSULB**

## **DISCLAIMER**

---

The opinions and conclusions expressed or implied in the report are those of the research agency. They are not necessarily those of the Transportation Research Board, the National Academies, the Federal Highway Administration, the American Association of State Highway and Transportation Officials, or the individual states participating in the National Cooperative Highway Research Program.

## Table of Contents

<b>Executive Summary</b> .....	<b>i</b>
<b>Introduction</b> .....	<b>1</b>
<b>Welcome Address</b> .....	<b>2</b>
Genevieve Giuliano Ph.D. Director, METRANS	
Jeff Morales, Director, Caltrans	
John Horsley, Executive Director, AASHTO	
<b>Session 1 Overview : The national transportation system and international trade</b> .....	<b>3</b>
Joseph Magaddino, Ph.D. Dept. of Economics, CSULB	
Harry Caldwell, Freight Management and Operations, FHWA	
<b>Session 2, Stakeholder Panel 1: Industry Perspectives</b> .....	<b>10</b>
<b>Trucking industry</b> , Patty Senecal, Transport Express	
<b>Rail Industry</b> , John Samuels Ph.D., Norfolk Southern	
<b>Port operator</b> , John Glover, Port of Oakland	
<b>Terminal Operator</b> , Alan McCorkle, Mears APM Terminals	
<b>Labor/Union Representative</b> , Dominick Miretti Ph.D., ILWU. Local 63	
<b>Luncheon address: Transportation and the Global Economy</b> .....	<b>17</b>
Hon. Maria Contreras-Sweet , Sec. California Business, Transportation & Housing Agency	
<b>Session 3, Freight Transportation: Issues and Problems</b> .....	<b>19</b>
<b>Congestion/reliability: How bad is it?</b> Lance Grenzbach, Cambridge Systemantic	
<b>Financing and pricing: How and who pays?</b> Robert Poole, Reason Foundation	
<b>Safety/security: Reducing risk vs. increasing costs</b> Chelsea White, Georgia Tech University	
<b>Measuring impacts: Data and research needs</b> Paul Bingham, DRI/WEFA	
<b>Session 4 Stakeholder Panel 2: Policy Perspectives</b> .....	<b>26</b>
Tom Norton, Colorado DOT	
Richard Hollingsworth, Gateway Cities Partnership, Inc	
Eugene Ryan, CATS, Chicago	
Stephen Finnegan, Auto Club of Southern California	
James McCarville, Port of Pittsburgh	
<b>Session 5 Policy Options</b> .....	<b>30</b>
John Horsley, Executive Director, AASHTO	
Congresswoman Juanita Millender-McDonald	
Richard Nordahl, Chief, Office of Goods Movement, Caltrans	
Jim Preusch, Principal, Infra-Trans, LLC	
<b>Conclusion</b> .....	<b>36</b>
<b>Appendix A Schedule of Program</b> .....	<b>I</b>
<b>Appendix B Roster Speakers and Moderators</b> .....	<b>III</b>
<b>Appendix C Speaker Biographies</b> .....	<b>IV</b>

## Executive Summary

---

---

METRANS teamed with the American Association of State Highway and Transportation Officials (AASHTO) to host the National Symposium on Transportation, International Trade and Economic Competitiveness on October 25, 2002. The one-day conference, funded by the National Cooperative Highway Research Program, was one of four conferences being held around the U.S. to highlight various aspects of the U.S. transportation system and the significance of transportation in the national economy.

Restructuring of the world economy and increasing globalization has fueled rapid growth in international trade. In 2000, the combined value of all U.S. imports and exports was close to \$2,500 billion. Estimates place international trade at 27% of the U.S. GNP. Even conservative forecasts indicate continued significant increases in international trade. The purpose of the conference was to explore the relationship between transportation and international trade. The conference included the following topics:

- Description of the scope and impact of trade on the national economy
- Description of the state of the national goods movement transport system and projections for future goods movement demand
- Discussion of major problems associated with the goods movement transport system
- Reflections on problems from various stakeholder perspectives
- Suggestions for solving these problems

Conference presenters included academics, industry representatives (port authorities, trucking, shipping, labor), public agency representatives (federal, state, local), and elected officials (federal and state). Conference attendees included faculty and graduate students as well as a wide range of industry stakeholders, both public and private.

Conference presenters argued that the existing port and highway capacity is insufficient to meet present and future demands of intermodal goods movement. Large ports are nearly built out and have little or no land for further expansion. The national stock of transportation infrastructure (highways and railroads) is aging and requires significant capital investment for its maintenance, repair and construction of any additional capacity. The shortfall in funding to maintain and expand transportation infrastructure was a big concern at the conference. It was observed that the demands for homeland security make public funding for infrastructure improvement projects more difficult.

The major problem areas discussed included congestion and reliability, financing and pricing, safety and security, and the lack of adequate data and modeling capability to monitor and forecast freight

flows. Industry stakeholders also identified the impacts of goods movement on local populations and the environment, as well as the absence of a comprehensive “supply chain” perspective as significant problems.

The conference discussed several ways to address the funding shortfall. Policy changes to encourage private participation and to make private and joint venture intermodal goods movement projects eligible for federal funding were proposed. AASHTO Executive Director John Horsely proposed broadening eligibility for the TIFIA program and establishing state infrastructure banks in all states. James Preusch suggested a new fee on all U.S. imports and exports, levied at the point of border crossing, which will be collected by customs. This fee would be based on goods’ value and CPI adjusted every year. A “National Freight Security and Infrastructure Bank” would be set up with contributions from federal and state governments and U.S. customs fees, and would be dedicated to finance infrastructure projects.

The conference also discussed causes of inefficiency and ways to improve productivity of intermodal transport. Trucking was critical of the time-consuming paperwork at the ports, and limited working hours of ports and warehouses, which forced truck trips during working hours when highways are already congested. Port authorities identified the challenge of assembling and clearing all necessary legal documents related to cargo clearance and cargo transfer.

All agreed that the productivity of existing infrastructure could be significantly improved with advanced management techniques and use of modern technological tools like GPS, but overall physical freight capacity is a major challenge at key hubs and on key corridors. A coordinated effort by port authorities, trucking and warehousing to increase work hours would disperse freight traffic over time and reduce traffic congestion. Trucking would have the option of driving in low traffic hours. A moratorium on the maximum period a container could remain on port after being unloaded from ocean-carrier would increase productivity of limited port capacity.

The issue of underutilization of railroads was also brought up at the conference. Railroads could present capacity options for carrying freight on long haul routes. Railroads are already in the process of integrating advanced communication technology, presently for security reasons, but there are opportunities for better coordination and scheduling with truck operators to provide more efficient freight transport.

The symposium presentations were thought provoking discussions. However, recommendations presented were frequently politically contentious. While federal funding for essentially private infrastructure is attractive to port operators, for example, state highway operators see a threat to already scarce transportation dollars. The challenge is to develop consensus around a goods movement agenda that would both use existing resources as efficiently as possible and provide for the future infrastructure needs of a growing economy.

## Introduction

Restructuring of the world economy and increasing globalization have fueled rapid growth in international trade. Even conservative forecasts indicate continued significant increases in international trade. According to DRI-WEFA, a leading U.S. economic forecasting firm, real exports are expected to grow at an average annual rate of 6.9 percent and real imports at an average annual rate of 5 percent. More international trade means more freight moving across the nation's highways, railroads, airports, waterways and seaports. METRANS joined the American Association of State Highway and Transportation Officials (AASHTO) in organizing a one-day conference on *Transportation, International Trade and Economic Competitiveness* on October 25, 2002. The purpose of the conference was to explore the relationship between transportation and international trade. The symposium included the following topics:

- Description of the scope and impact of trade on the national economy
- Description of the state of the national goods movement transport system and projections for future goods movement demand
- Discussion of major problems associated with the goods movement transport system
- Reflections on problems from various stakeholder perspectives
- Suggestions for solving these problems

Conference presenters included academics, industry representatives (port authorities, trucking, shipping, labor), public agency representatives (federal, state, local), and elected officials (federal and state). Conference attendees included faculty and graduate students as well as a wide range of industry stakeholders, both public and private.

This symposium was one of the four conferences being held around the U.S. to highlight various aspects of the U.S. transportation system and the significance of transportation in the national economy. The first conference was on Transportation and Agriculture; the second was on Transportation and Commerce. These were held in North Dakota and Washington DC respectively. The fourth and final conference of the series is on Transportation and Travel, Tourism and Recreation, and will be held in Las Vegas.

## **Welcome Address**

**Genevieve Giuliano, Ph.D.,** Director, METRANS Transportation Center and Professor, School of Policy, Planning and Development, University of Southern California

Prof. Giuliano thanked all participants, symposium sponsors, volunteers and all others who contributed to the symposium that was a joint effort of AASHTO and METRANS Transportation Center. Prof. Giuliano laid out the following goals for the symposium:

- Description of the scope and impact of trade on the national economy
- Description of the state of the national goods movement transport system and projections for future goods movement demand
- Discussion of major problems associated with the goods movement transport system
- Reflections on problems from various stakeholder perspectives
- Suggestions for solving these problems

**Jeff Morales,** Executive Director, California State Department of Transportation (Caltrans)

Mr. Morales congratulated AASHTO and METRANS for organizing the symposium. Mr. Morales said that the purpose of the symposium was to establish the importance of freight transportation in regional and national economy. Mr. Morales noted that the linkage between freight transportation and economic development is not appreciated by all politicians and public agencies. He lauded California Governor Gray Davis for his recognition and support for transportation.

Mr. Morales observed that highways and ports are critical to a healthy U.S. economy. The recent port shutdown strike on the West Coast is an example. Daily loss to the U.S. economy due to the port shutdown is estimated to be \$1 billion. He stressed the financial needs of the U.S. transportation infrastructure and hoped that efforts like this symposium would convince the Federal government to fund transportation network improvements in the U.S.

**John Horsley,** Director, AASHTO

Dr. Horsley thanked all presenters, participants, sponsors and METRANS for their contribution to the symposium, the third in a series of four conferences organized by AASHTO. The first two conferences were on ‘Transportation and Agriculture’ and ‘Transportation and Commerce,’ held in North Dakota and Washington DC, respectively. The fourth and final conference of the series is on ‘Transportation and Travel, Tourism and Recreation.’ It is to be held in Las Vegas.

## Overview Session

This session set the context for the symposium. Growth in world trade, changing world economic structure, globalization, and the United States' role as the world's largest economy were discussed. While Dr. Magaddino put freight in context of the U.S. economy, Mr. Caldwell took stock of the U.S. transportation infrastructure and Federal Highway Administration's view of the situation.

### International Trade and the US Economy

**Dr. Joseph Magaddino, Ph.D., California State University, Long Beach**

Dr. Magaddino spoke about the growth trends of U.S. international trade and its impact on freight movement. He described the importance of international trade to the United States and other countries. Countries trade a variety of goods to capitalize on their cost competitiveness in the international market. World merchandise exports have grown from \$87 billion in 1953 to \$6.2 trillion in 2000.

During the last forty years, U.S. exports<sup>1</sup> have grown by a factor of 41 (growth rate of 9.7 percent); and U.S. imports have grown by a factor of 51 (growth rate of 10.3 percent). Growth in U.S. international trade was sluggish between 1960 and 1980. However, growth of U.S. exports gained fresh momentum after shifts in international trade policy in 1980. U.S. exports grew dramatically after 1986 due to the export of knowledge intensive goods such as computer software. Between 1990 and 2000, the U.S. share of world exports of manufactured goods, chemicals, machinery, transport equipment and automotive products grew whereas U.S. share of world exports of office machines, telecom equipment and agricultural products declined. During 2001, the largest share of U.S. exports (in value) went to the NAFTA countries (37 percent) followed by Europe (24 percent), Asia (27 percent), South America (5 percent) and 7 percent to all other countries.

Between 1990 and 2000, U.S. share of world imports (in value) of manufactured goods, clothing, machinery and transport equipment, automotive products agricultural products etc. grew. Presently, the U.S. is the largest consumer of world imports (in value): nearly 80 percent of the total world imports are consumed by U.S. The largest share of U.S. imports comes from Asia (39 percent) followed by NAFTA countries (30 percent), Europe (22 percent), South America (4 percent) and other nations (5 percent). Canada is the largest overall trading partner of U.S., followed by Japan and Mexico.

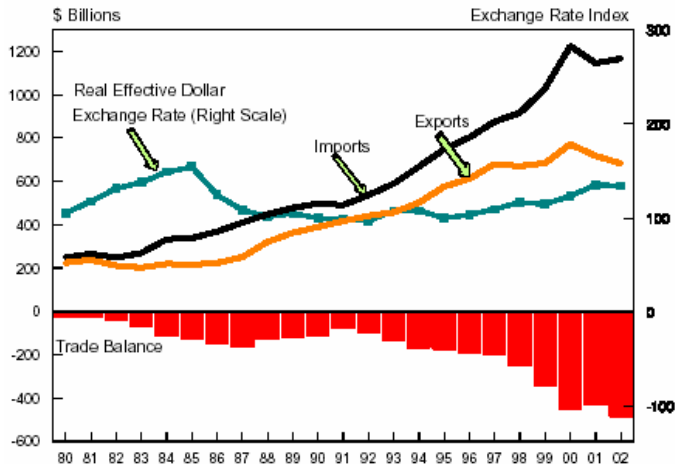
During the last two decades, the value of U.S. imports has been greater than the value of U.S. exports (figure 1). Dr. Magaddino indicated that the current account balance will remain imbalanced for

---

<sup>1</sup> Dr. Magaddino has measured all imports, exports and trade in U.S. Dollars, unless stated otherwise

the foreseeable future. The rate of growth in exports should improve relative to the rate of growth in imports, reducing the size of the trade deficit over time. Export growth is linked to anticipated declines in the dollar exchange rate.

Dr. Magaddino presented future growth trends in international trade as forecasted by DRI-WEFA, a leading U.S. economic forecasting firm. Real U.S. GDP is forecasted to grow at an average annual rate



**Fig. 1** U.S. Imports, Exports, Merchandise Trade Balance, and Real Effective Dollar Exchange Rate, 1980-2002

**Source:** U.S. Dept. of Commerce; International Monetary Fund

of 3.1 percent through the year 2027. During the same period, U.S. imports (in real value) are forecasted to grow at an average annual rate of 5.8 percent. These figures are on the conservative side. However, Dr. Magaddino added that due to recent concerns, some of the nation's resources will be diverted towards homeland security measures, possibly resulting in slower economic growth and hence slower growth in trade.

More international trade means more freight moving across the nation's highways, railroads, airports, waterways and seaports. Considering the U.S. international trade trends, U.S. freight transportation demand will definitely increase in future. A very important component in goods movement is the 'For-Hire Transportation Service Industry.' For-hire transportation services are goods and passenger transportation services that are available to anyone willing to pay the price. For-hire transportation services include railroads, inter-city passenger transport, trucking, water carriers, air-carriers and gas pipelines. U.S. for-hire transportation services industry underwent several changes after 1960. Various for-hire transportation modes were deregulated by the federal government. Following deregulation, transportation services became highly competitive. Several technological innovations were made to make operations more efficient. Competition resulted in lower market prices and reduced profit margins. Effectively, it led to transportation of larger volumes of freight at lower cost. Therefore, between 1960 and 2000, for-hire transportation services' share of U.S. GDP declined despite growth in international trade.

During the last four decades, the share of freight transported by railroads decreased dramatically, while that of airlines increased. During 2000, the largest share of U.S. exports (in value) was transported out of the country by air followed by trucks, water, railroads and pipelines. During the same year, the

largest share of U.S. imports (in value) came in via water followed by air, trucks, and railroads. Nearly 35 percent of all U.S. imports came in via sea routes. As the total value of U.S. imports is greater than the total value of U.S. exports, maximum value of all international freight was transported by water, followed by air and truck (Figure 2).

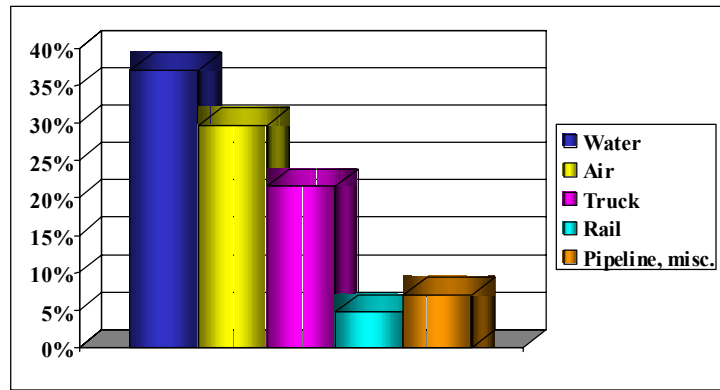


Figure 2 Transportation Distribution of Value of U.S. Merchandise Exports & Imports, 2000

Dr. Magaddino described ‘Supply Chain Management’ as another important component in goods movement. The freight industry has now recognized the importance of logistics to goods movement. Recent important innovations in goods movement have been in supply chain management: reduced fixed inventories, shorter production cycle times and lower cost of goods supply. Earlier, only large firms engaged in supply chain management. But with deregulation and rapid innovation in information technology particularly internet tools, smaller firms have also begun using supply chain management techniques. Dr. Magaddino noted that supply chain management could offset some of the delays and cost increases in freight transport caused by additional security measures after 9/11.

International trade and therefore freight traffic is expected to increase in the region and throughout the United States. Sustaining growth in international trade is a challenge to the Southern California region and the United States. Transportation and housing are critical factors in the region’s and the country’s economic development. Dr. Magaddino mentioned that if not addressed promptly, housing and transportation needs might become bottlenecks to future economic growth.

## **Transportation System and International Trade**

**Harry Caldwell, Federal Highway Administration, USDOT**

Mr. Caldwell began his presentation by noting the growth in U.S. international trade over the last three decades: from 11 percent of GDP in 1970 to 25 percent of GDP in 1997. U.S. trade is forecasted to grow (in value) to 35 percent of U.S. GDP through 2020<sup>2</sup>. As any growth in trade leads to proportionate growth in freight, U.S. international freight (volume) is forecasted to grow at the rate of 2.8 percent per annum between 1998 and 2020, while U.S. domestic freight is forecasted to grow at the rate of 2.4 percent during the same period. Maximum growth is anticipated in the west and south, 55 percent and 80 percent respectively, over current freight volumes.

Both freight and passenger traffic has been growing over last several decades. Interestingly, freight traffic has been growing faster than passenger traffic. Growth in vehicle traffic has serious social and environmental impacts. Some of the adverse impacts of high traffic volume are:

- Traffic bottlenecks and congestion
- Growth in air and noise pollution levels
- Increase in complexity of expanding marine, rail, truck and air terminals

Mr. Caldwell noted some of the unique challenges of freight traffic growth. Many parts of the highway network are already congested. The situation is aggravated by poor intermodal connections between highways, railroads and marine terminals. If the existing network is not expanded, congestion will increase. Appropriate measures to accommodate growth in traffic volumes are critical.

Mr. Caldwell also noted that the highway network is not only important for goods and passenger movement, but also for swift deployment of defense supplies and personnel when needed. One of the current goals of the US Department of Defense is to reduce the current deployment time of defense personnel from 180 days to 30 days, a reduction of 80 percent. He added that after September 11, defense and security have become more important.

Commenting on the demand and supply of U.S. highways, Mr. Caldwell noted that the existing highway network capacity is grossly inadequate for smooth traffic flow. Over the past 15 years, the average annual increase in highway travel demand has exceeded new highway capacity by a 12:1 ratio,

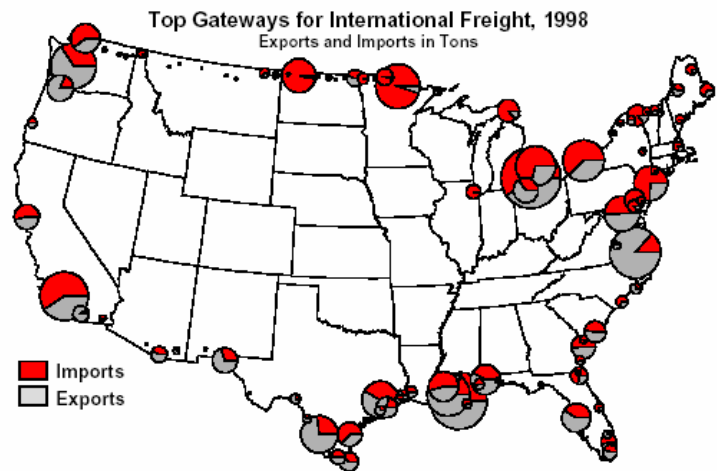
---

<sup>2</sup> World Bank, World Development Indicators, 1999

leading to high levels of congestion in and around major metropolitan areas and between urban areas. He added that anomalies exist in capacity utilization of various freight transportation modes. While highways are congested, rail network capacity remains highly underutilized; seaports are congested due to excessive demand while inland ports remain underutilized.

Mr. Caldwell feels that the existing U.S. railroad system could be used more intensively for freight transport along certain high density corridors. Railroads theoretically could accommodate as much as 45 percent of all contestable freight currently transported by trucks. Contestable freight includes 'Dry Van Containerizable' freight, long haul (more than 500 miles) freight, and freight moving on highway lanes parallel to the existing intermodal rail service network. He noted that US Class-1 railroads are not covering their cost of capital and, as a result, have been unable to make the necessary capacity and service investments to compete with the network economics and accessibility of trucking. Railroads' capital improvements and expansion have lagged because of inadequate funds. Railroads not only require significantly higher capital investment than trucking for any capacity enhancement, they are also not profitable enough to readily attract sufficient long term investment. In Mr. Caldwell's view, a more active public role will be required to allow better use of rail capacity as part of the nation's intermodal freight transport system.

Mr. Caldwell observed the importance of 'Freight Gateways' to the U.S. economy. Freight gateways are nationally or regionally significant ports of entry and/or transportation hubs for domestic and international trade including supporting corridors and intermodal connectors, for example Chicago and Los Angeles. Freight gateways are not federally (politically) selected locations. Freight gateways emerge from geographic advantages and market forces. Mr. Caldwell is of the view that national freight gateways should be provided institutional support to facilitate goods movement. A potential way to facilitate institutional support is creating a single point of contact for freight transportation coordination at the state level, preferably within the state Department of Transportation (DOT). He cited the Washington State model as a functional example. Mr. Caldwell lauded the formation of California statewide freight advisory council as a good step in the same direction.



Mr. Caldwell also proposed several potential options to facilitate financial assistance to freight gateways for building additional infrastructure:

1. State/local finance initiatives, including new user fees
2. Federal pilot programs to actively support innovative funding initiatives
3. Use of federal aid in privately owned intermodal freight facilities, where a public benefit can be demonstrated
4. Grouping of linked freight productivity projects within a gateway region or state to benefit from economies of scale
5. Expedite infrastructure improvement projects at intermodal terminals to prevent cost escalation

Mr. Caldwell added that major U.S. transportation corridors often span several states and regions. Hence, integrated multi-state planning efforts are needed to address issues in goods movement most effectively. Bi-national planning efforts are needed for swift freight movement across borders. Mr. Caldwell feels that infrastructure projects in Mexico and Canada could be given U.S. financial assistance, if the project has a clear benefit to the U.S.

With respect to the Federal Highway Administration (FHWA), Mr. Caldwell noted that FHWA's policy development strategy for freight productivity involves four steps:

- Improve understanding with state and local partners
- Comprehensive outreach to address functional issues
- Sponsorship of regional case studies to reinforce policy elements
- Comprehensive six-level public information efforts to build support, and educate decision makers

Mr. Caldwell made several suggestions for increasing freight productivity at the state and Metropolitan Planning Organization (MPO) level. He stressed better intermodal freight transportation planning efforts in the states and MPOs. States should include freight planning in a comprehensive professional capacity building initiative. Comprehensive training programs are required for the state and MPO personnel dealing with freight movement. Freight advisory groups with participation from public and private sectors are required for effective transportation planning at the state level. He added that the state, MPO and local governments should initiate professional exchange programs, beginning with public agencies and later extending them to private sector industries. Acknowledging the importance of education and skill improvement to deal with freight issues, Mr. Caldwell suggested that universities should be encouraged to include freight and trade issues in relevant programs. Research on freight security processes and procedures is very important and a new authority could be set up to facilitate

research. He also talked about a Highway Trust Fund (HTF) excise tax exemption for certain safety and security devices and acknowledged its limited popularity.

Mr. Caldwell noted that the forthcoming TEA-21 reauthorization is a great opportunity to advance public policy options that improve the effectiveness of the nation's intermodal freight transportation system. Freight transportation needs and concerns should be articulated in TEA-21 reauthorization to solicit adequate and sustained investment.

Mr. Caldwell also talked about increasing globalization. Globalization is not a choice now, but a reality. Globalization has its own positive and negative aspects. Positive aspects include growth in the number of Internet users, 33 military regimes replaced with civilian governments since 1980 and so on. Negative aspects include democracy only in 82 countries, no free press in 61 countries, and 3.6 million deaths in internal national conflicts globally. The share of world population in extreme poverty has declined from 29 percent in 1980 to 23 percent in 1999. Yet, the richest 5 percent of the world's population have 114 times more wealth than the poorest 5 percent.

International trade is an important component of the nation's economic strength. Economic strength and trade relationships will define America's global influence in the 21<sup>st</sup> century. Excellent transportation infrastructure does not ensure economic success. But, lack of adequate transportation infrastructure definitely leads to inferior economic performance. Transportation performance, therefore, is one of the major considerations in future national well being. Investment in transportation is a strategic investment.

## **Stakeholder Panel 1: Industry Perspectives**

The purpose of this session was to present the perspectives of key stakeholders in the goods movement supply chain. The panel discussed issues in goods movement from the perspectives of the trucking industry, port authorities, labor union, terminal operator and railroad industry. Different industries have different issues, but they are interconnected and cannot be addressed in isolation. Interestingly, though industries have different views of the problems, suggested solutions that emerged from the discussions were surprisingly complementary. The moderator for this session was Marianne Venieris, CSULB.

### **Trucking**

#### **Warren Hoemann, California Trucking Association**

Mr. Hoemann talked about the problems and needs of the U.S. trucking industry. He began his presentation by acknowledging the historic importance of ports as centers of urban growth. Ports are no longer centers of urbanization, but still remain important to the nation due to the economic significance of imports and exports. Citing some of the problems of ports, Mr. Hoemann stated that ports are becoming more congested day by day. Often, cargo sits at ports for several days before it can be transported out. The present operating hours of terminal gates are not sufficient to handle the volume of cargo going through the ports. As a result, trucks are delayed and often wait for as long as four hours at gates to pick or drop cargo, creating severe congestion. Mr. Hoemann noted that trucking is a hugely competitive industry today operating at marginal profits. Delays at ports and traffic congestion on highways add to costs and reduce profit. He proposed several alternatives for improving truck transport.

First, terminal gate hours should be expanded to expedite container movement. Typically, container terminals operate 10-12 hours everyday, Monday through Friday. Terminal operating hours are decided collectively by the terminal operators and the labor unions, for example the Longshoremen Union (ILWU). Operating container terminals for longer durations, for example 18 hours, would help in clearing any accumulated backlog at the ports. As truck trips would get dispersed over longer periods of time, traffic congestion at ports and on highways would be reduced. Eventually, it would reduce the waiting periods for trucks at ports. Truck drivers would then be able to spend more time driving, hence increasing productivity and profits of the trucking industry.

Second, the statutory regulations on maximum work hours per day for truck drivers should be amended. Presently, maximum daily work hours for truck drivers are restricted as a safety precaution. In the existing regulations, the time truck drivers spend while waiting in queues at container terminals is counted towards their respective work hours. Effectively, the actual driving time for truck drivers is less

than the time safety precautions allow. It decreases productivity and increases operating cost of trucking. If either the total work hours permitted for truck drivers are increased or the time spent while waiting in queues at terminals is not counted towards the current permitted driving hours, trucking industries' productivity and profits would improve. Further, it will not compromise safety, as effective driving hours will not exceed desired periods.

Third, he argued for truck-only lanes where the level of traffic is high. Presently, freight and passenger traffic is mixed on highways. Making exclusive truck-only lanes, thereby segregating trucks from cars and other passenger modes, will have multiple benefits. It will make driving on highways safer. Truck flow would improve and travel time would become more predictable.

Fourth, truckers want to add larger trucks with greater payload capacity to their fleet. These trucks are longer and heavier when loaded. These trucks also have longer turning radii than trucks in use now. Existing highway design is not compatible with such large trucks. Highway ramps and truck lanes should be retrofitted to accommodate these trucks. It will benefit both the trucking industry and traffic in general; trucking will benefit by increased productivity and traffic movement by reducing truck trips.

Finally, Mr. Hoemann stressed the need for a more comprehensive and integrated land use policy. He argued that often transportation needs are overlooked when areas are zoned. Land uses that generate significant truck traffic may be approved, but after the fact restrictions are imposed that negatively impact the business activity. Mr. Hoemann concluded that transportation costs are increasing, but profits are not. Steps to increase efficiency and productivity are essential for the long term health of the trucking industry.

## **Rail Transportation: Critical Challenges**

### **John Samuels, Norfolk Southern Railroads**

Norfolk Southern, like other freight transport railroads in the United States, is a private, for-profit, tax paying company. Railroads are primarily used for inter-city transport of bulky freight in the United States. Since 1929, railroads have lost significant market share, measured in ton-miles, of intercity freight transport<sup>3</sup>. In 2000, railroads had 9 percent share of U.S. intercity freight market, measured in ton-miles<sup>3</sup>. Since 1964, annual volumes of freight transported by railroads have been growing. However, annual revenues (in real dollars) of railroads have been declining over the same period.

---

<sup>3</sup> Source: Eno Transportation Foundation

Mr. Samuels noted that unlike trucking, railroads are a highly capital intensive industry. Presently, 84 percent of the total revenue generated by railroads is used to cover operating cost and 14 percent is used for dividends, capital programs and investment. Railroads have very large sunk costs and hence a high ratio of assets to revenue. Return on investment in railroads is lower than the cost of borrowing capital itself, which makes borrowing from capital markets very difficult. Railroads face a huge shortfall in capital investment. Therefore, the main challenge for the railroads is raising capital for a very long term investment.

Railroads expect to reduce their immediate capital needs by increasing the longevity of the rail network through innovative technology. Despite scarcity of funds, railroads are investing in research and development of technology that would increase the longevity of its network. For example, friction between the rail-wheel interface is a significant source of wear and tear. Norfolk Southern is conducting research on how to reduce rail-wheel friction. This research is expected to increase travel speeds to 70 mph as well as significantly lengthen the life of the rail guideway. Norfolk Southern Railroads has deployed automated wheel profile condition monitoring systems (sensor box with high speed cameras and lasers) to identify thin flange, tall-flange, and hollow-worn wheels at track speed.

Mr. Samuels argued that railroads are a safer mode of transport than trucks. Railroads average about 22 fatal accidents every year, much less when compared to trucks. Ninety six percent of all railroad accidents occur at grade crossings or involve trespassers. Railroads are making efforts to identify the causes of these accidents and take appropriate corrective measures to prevent them. Video cameras are now installed on locomotive windshields to document railroad crossing accidents for analysis.

Mr. Samuels observed that railroads have the potential to carry significant volume of freight. A well coordinated intermodal transport system that uses a combination of trucks and railroads could provide fast, reliable, and cost-effective goods movement, especially on long haul (greater than 500 miles) routes.

## **Port Authority**

### **John Glover, Port of Oakland**

Mr. Glover began his presentation by noting that Los Angeles and Long Beach together form the largest port in the United States, followed by the port of New York-New Jersey, and Oakland. Per Mr. Glover ports have three major concerns: Productivity of marine terminals, security, and congestion.

Population growth has led to increased consumption of all goods and services, which in turn has led to growth in international trade. As international trade volume increases, cargo container movement through ports also increases. Corresponding to growing cargo volumes, each new generation of ships has greater cargo capacity. Carrying capacity of ships has increased from 1,000 Twenty Feet Equivalent Units<sup>4</sup> (TEU) in the early years of containerization to 6,000 TEU at present. Future ships are expected to reach 10,000 TEU. Larger ships need deeper ports with larger cargo handling capacity and container yards.

Despite expected increases in port activity, the nation's major ports are nearly built out. Ports increasingly compete for space as harbor areas have become attractive places for building affluent housing, hotels, and resorts. Growing residential and commercial interests make it difficult to expand container yards or to build additional freight facilities, despite expected increases in port activity. Hence ports have to become innovative and adapt technology to improve port operations for higher productivity.

Security of U.S. ports has gained more importance after September 11. Cargo containers arrive at U.S. ports from all over the world. Presently, it is very difficult to ensure the correct origin of a cargo container. A container may be carrying weapons or explosives and might be acting as a weapon itself. It is therefore very important to verify contents of all containers on a ship before the ship enters a U.S. port. The volume of cargo arriving at ports everyday is far too large to make physical inspection of even a significant share of all containers feasible. Presently, only 2 percent of all containers arriving at U.S. ports are physically inspected. Technology is available for inspection of containers, but is very expensive. Ports cannot afford it without federal support. Water borders are as sensitive as land borders for national security. Therefore, the federal government has as much responsibility for port security as for land border security.

Large volumes of freight movement add to traffic congestion. Traffic congestion in turn leads to air pollution, stress and other indirect impacts. Mr. Glover concluded by suggesting several ways to relieve traffic congestion on highways. One is to improve public transit, which in turn would lead to

increased transit ridership and decrease automobile traffic on streets and highways. Another is to improve railroad infrastructure and transfer some freight movement from highways to railroads. In his view, shifting freight from streets to railroads could provide dramatic relief from traffic congestion.

### **Terminal Operator**

#### **Alan McCorkle, Mearsk APM Terminals**

Mr. McCorkle noted that vessel (ocean-carrier) sizes have been growing over time. Large ships depend on large ports for loading and unloading their cargo. Smaller ports do not have sufficient capacity to accommodate large vessels. With increasing vessel size, container cargo arriving at ports is also increasing. Per Mr. McCorkle ports have been increasing their productivity to handle growing cargo volumes.

Mr. McCorkle described the Pier 400 project, a maritime terminal owned by APM Terminals. The Pier 400 project is currently under construction. It will be completed in two phases. The first phase, to be completed in 2002, is spread over an area of 343 acres. It has 10 “Gantry Cranes,” which are specialized cranes with maximum outreach of 210 ft, lift height of 135 ft, and capacity to handle 22 container wide ships. The Phase 1 terminal is projected to handle 800,000 lifts or 1,280,000 TEU of cargo in 2002. The second phase of the project will be completed in 2004, taking the project area to 484 acres and the capacity to run gantry cranes to 18. If required, Pier 400 could be extended towards the southeast with additional landfill.

Mr. McCorkle feels that the major concerns in goods movement are the road and highway network, intermodal transportation and a skilled workforce. He feels that the technology being used presently at ports is sufficiently advanced and does not require any immediate change. But, the work process or the way in which technology is being used needs changes. Port operations can be modified to achieve higher productivity. Intermodal transportation also needs a lot of improvement. Larger warehouses are needed to accommodate growing volumes of cargo. Consolidation of warehouse facilities would also improve goods movement.

Mr. McCorkle concluded by pointing out that skilled workforce is necessary to take complete benefit of technology<sup>5</sup>. A better trained workforce would result in higher productivity. A skilled workforce is also important for the entire logistics supply chain.

---

<sup>4</sup> A unit of measurement of freight containers

<sup>5</sup> Mr. McCorkle spoke about the port workforce in general, not about longshoremen or any other specific group.

## **Labor Union**

### **Domenick Miretti, Ph.D., International Longshore Workers Union (ILWU)**

Dr. Miretti began his presentation by noting that container cargo has been growing continuously at ports over the last several years. At present, the ports of Los Angeles and Long Beach handle close to 9 million TEUs of cargo annually. By 2020, this number is expected to grow to 36 million<sup>6</sup>. Presently, trucks make 35,000 trips every day to these ports. Truck trips are projected to increase to 50,000 by the year 2010 and to 91,000 by the year 2020.

Dr. Miretti finds the rise in global trade a mixed blessing. On the one hand, it has positive economic benefits, and on the other hand it leads to traffic congestion on ports and highways and related problems like air pollution. Efficient port operations are very important for the economic success of international trade. Any cargo-port gridlock will seriously damage the national economy. Dr. Miretti argued that efforts are required to ensure swift movement of cargo through ports and increased productivity of ports.

To keep pace with growing cargo volumes, increasing throughput of containers from port terminals is very important. Dr. Miretti proposed several ways to do that. One is to operate terminal gates for longer hours. Clearly if the work hours increase, output should also increase. Opening gates for longer hours does not require any expansion of the existing facility. It would greatly reduce yard congestion. But, longer terminal hours would be beneficial only if shippers and warehouses increase their corresponding work hours.

Second, the dwell time of containers on ports should be reduced to the minimum practically possible. Often a recipient of cargo does not allow the shipper to deliver it for some period of time after its arrival at the port. The shipper in turn does not remove that container from the port for as long as possible to minimize warehousing cost. This practice should be discouraged. Docks should not be used as warehouses. Close monitoring and strict regulations are required to prevent any misuse of container yards.

Third, port workers should have the required skills when they are employed. Often unskilled labor is employed at the ports. These unskilled workers learn as they work. To achieve greater efficiency, workers should be properly trained before they start working. Clearly, trained workers will be more productive than the untrained.

Fourth, a standardized format of documents should be adopted internationally to facilitate faster processing of paperwork at ports. Presently, the format of paperwork varies from country to country, which makes processing lengthier and more time consuming.

Finally, an appointment system for truck drivers should be developed and adopted at ports. Presently, trucks wait in queues for hours to load/unload at terminal gates. This wastes a lot of man-hours and creates traffic congestion and air pollution at ports. If truckers were given appointments to arrive at the terminal at a certain time, truck queues could be significantly reduced, if not eliminated completely. Shippers would fix appointments ahead of time, which will save them time and money spent on drivers' wait hours at terminal gates. Dr. Miretti concluded by mentioning that steps to improve efficiency and productivity of ports require cooperation and joint efforts of all private and public agencies involved in freight transport.

### **Discussion and Comments**

#### On security:

- Railroads have adapted a highly sophisticated communication system for nationwide alerts. The systems works like a cascade on the railroad network. Using this system, railroads can shut down the entire system in as little as two hours.
- Large ports tend to become inefficient over time. But, more importantly, large ports are at a greater security risk than smaller ports. Several smaller ports distributed along the coast line would reduce risk and distribute traffic.

#### On productivity:

- Port authorities are not averse to opening terminal gates for longer duration per se. But, ports need commitment from truckers that these additional hours will be used productively. Commitment from warehouses to operate during corresponding hours is also required. Extended work hours will be useful only if both ends of the trip are functional.
- Double decking of containers on railroads has greatly increased its productivity. Efforts are underway to standardize the chassis sizes to provide seamless intermodal transportation.
- More projects like the Alameda Corridor are needed to improve goods movement in the country.

---

<sup>6</sup> DRI WEFA Forecasts, 1998

## **Luncheon Address**

**Honorable Maria Contreras-Sweet, Secretary, California Business, Transportation and Housing Agency**

Ms. Contreras-Sweet congratulated AASHTO and METTRANS for organizing the symposium, and welcomed all attendees. She acknowledged that international trade has become a major component of the U.S. economy. It now accounts for 25 percent of the nation's current GDP. Successful trade is, therefore, critical to the country's economic growth. International trade involves significant freight movement, both within the country and across international borders. Swift freight movement requires a highly efficient transportation system. Hence, success of the nation's economy also depends on an efficient transportation system. International trade involves a lot of interstate freight movement. Hence, interstate transportation as well as intercity transportation needs to be very efficient. It needs coordination and cooperation between states.

California has the most important seaports in the country. Significant volumes of international cargo are transported through these ports. The Governor of California recognizes the importance of transportation and housing. Four years ago, education was the top priority for the Governor of California. But today, he focuses more on transportation, business and housing. He has initiated preparation of an infrastructure plan for California's future.

California has taken several measures to address issues in transportation. In the last three years, California Department of Transportation (Caltrans) budget outlays increased by 50 percent. At present, Caltrans has \$7 billion worth of construction work underway. Caltrans has innovatively deployed the California Highway Patrol (CHP) to clear accidents and keep the traffic moving on freeways and highways. California was the first state to use CHP traveling on state business as security officers on commercial flights. California also needs a goods movement safety program. The California Office of Traffic Safety would overlook such a safety program. Proposition 42 has been placed on the November ballot to assure that the state sales tax on gasoline is dedicated to transportation. California is making many efforts to ensure that the transportation programs remain stable even with a government change.

The U.S. transportation system needs attention. It is not working as efficiently as it did in the past. Growing traffic volumes and insufficient capacity expansion are responsible for the present state of transportation infrastructure. The nation's transportation infrastructure needs investment in capacity enhancement and improvement. Hence, freight transportation funds should form a significant part of TEA-21 reauthorization. She concluded by saying that transportation impacts everybody in everyday life.

We should rise to the challenge and address the issues and problems in transportation of passengers and goods.

## **Speaker Session**

### **Freight Transportation Research: Issues and Problems**

This session discussed the current state of research in freight movement and addressed four key areas: congestion, financing, safety and security, data and research. The moderator for the session was C. Michael Walton, Ph.D., University of Texas at Austin.

#### **Congestion/Reliability: How bad it is?**

##### **Lance Grenzeback, Cambridge Systematics**

Mr. Grenzeback took an historical approach to discussing congestion and reliability. He noted that the 18<sup>th</sup> century was the ‘sail era.’ The British established their empire across continents because they could travel across oceans. Water transport was in fact the foundation of the colonial economy. It cost as much to move a ton of goods 30 miles inland as moving it across the Atlantic. Cities grew around major ports and along the Atlantic coastline. Most of the settlements were within 50 miles of the Atlantic coast. More than two-thirds of the population lived in coastal towns.

During the 19<sup>th</sup> century, the invention of the steam engine and the development of rail routes opened new ways of transportation across the country. Rail replaced water as the most efficient mode of transport. Domestic trade became possible as time and cost of inland transportation of goods were reduced significantly. Business and industry were less dependent on sea trade and ports. Domestic trade flourished and regional economies were built. East-west rail routes were built to follow development of the Midwest and west.

The 20<sup>th</sup> century was the age of automobile. It was the ‘truck era’ for goods transport. Trucks became most popular means of goods transport in these years. Business and industry were not solely dependent on railroad anymore for inland goods movement. A north-south and east-west highway grid was built, connecting cities and regions. During this century, U.S. trade with Gulf and Pacific Rim countries expanded.

The 21<sup>st</sup> century is the ‘information technology era’. Information, telecommunication and technology driven U.S. international trade has been growing. Low-cost, long-haul transportation by air, water and rail drives global trade. North-south NAFTA trade is expanding rapidly. Large metropolitan areas like Los Angeles and New York have developed as centers of multi-state and international U.S. trade. These metropolitan areas are very large distribution centers and generate a significant number of short-haul, i.e. under 500 miles truck trips. In the year 2000, highways surrounding the metropolitan areas of Los Angeles, San Francisco, Boston and other ports were highly congested.

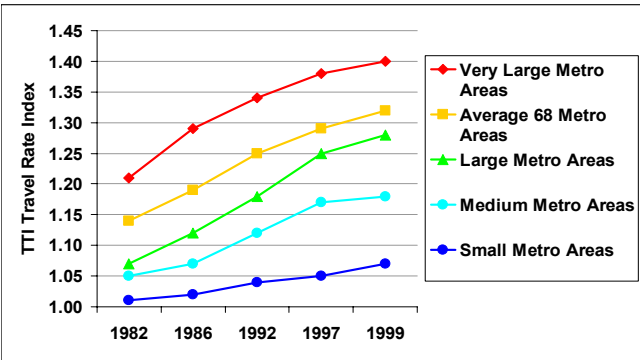


Figure 2 Congestion Trends in the United States  
Source: Texas Transportation Institute

impacts include increased stress, pressure to work harder to maintain productivity (due to time loss in traffic) and an overall decreased quality of life.

Mr. Grenzeback mentioned that traffic congestion affects businesses too. Various businesses are exposed to direct and indirect impacts of traffic congestion. These include retail operations, walk-in as well as field-service operations, research and other manpower intensive operations like manufacturing, goods distribution, transportation and warehouses. Direct impacts of traffic congestion on business include increase in staff and vehicles, decreased reliability of timely deliveries, increased inventories, disruption to operations, higher cost of goods and services. Indirect impacts of traffic congestion on business are reduction in labor and market accessibility, increase in prices of goods to final consumers, decline in business growth, and in extreme cases relocation of businesses.

Businesses resort to or could resort to several mitigation measures to offset the adverse impacts of traffic congestion. Firms can hire additional workers and keep more vehicles to make up for the productive hours lost. Businesses can change work hours to enable off-peak or night travel, use telecommunication instead of physical face to face interaction. Businesses can establish satellite branches to reduce travel. In extreme cases, businesses can relocate completely to areas where they are least affected by traffic congestion.

Mr. Grenzeback stressed that policy changes are required to reduce traffic congestion on streets and highways. The transportation system needs physical improvements as well as better traffic management technology like signal synchronization. Significant points of traffic congestion are connectors to major streets, major freight and passenger corridors and gateways to communities and businesses. These areas need specific attention to mitigate traffic congestion. Freight flows are as important as passenger movement for transportation planning. Economic development policies should be

Mr. Grenzeback noted that congestion is eroding freight reliability; peak-period travel times have increased significantly compared to off-peak travel times. Traffic congestion impacts travelers in several direct and indirect ways. Direct impacts include increased travel time, increased vehicle operation cost, decreased productivity and decreased reliability of travel schedule. Indirect

coordinated with transportation investment to prevent creation of new bottlenecks, especially in areas described earlier, and optimum utilization of existing street networks.

Concluding his presentation, Mr. Grenzeback observed that given the existing circumstances, traffic congestion is most likely to worsen in the future. Innovations in technology are needed to mitigate the adverse impacts of traffic congestion.

### **Financing and Pricing: How and Who Pays?**

#### **Robert Poole, The Reason Foundation**

Mr. Poole raised concerns about projected traffic growth in California and the U.S. The California Transportation Plan (2025) projects 32 percent growth in California's population, increasing from 34 million to 45 million; vehicles are projected to increase by 50 percent, from 23 million to 34 million; vehicle miles traveled (VMT) from 307 billion to 475 billion - a growth of 55 percent. In the same report, total growth in goods movement by all modes is projected to double. Specifically, truck traffic to and from the ports of Los Angeles and Long Beach would grow most dramatically- it is projected to nearly triple by the year 2020. Such growth in traffic is a phenomenal challenge to transportation planners and policy makers.

In the Southern California region, the I-710, SR-60, I-5 and I-15 freeways are truck-impacted now and will become more congested in the future. Mr. Poole discussed several innovative ways to improve traffic conditions on these freeways, which could also be applied to other congested freeways. Innovative ways include proposals to segregate truck traffic from passenger traffic by double decking of lanes within existing right-of-ways. Such proposals may appear fantastic today, but could well become reality in the future.

Per the FHWA 2001 Conditions and Performance Report<sup>7</sup>, highway funding outlays for the financial year 2000 totaled \$64.6 billion. In the same report, FHWA estimated that to properly maintain the existing system, spending should have been \$75.9 billion per annum. Moreover, to keep pace with growth and to maintain the system, investment should be \$106.9 billion per year. Per these estimates, the financial shortfall in transportation funds is \$10-\$41 billion per year.

---

<sup>7</sup> Chapter 9: Comparison of Spending and Investment Requirements, available at <http://www.fhwa.dot.gov/policy/2002cpr/ch9b.htm>

Mr. Poole said that one option for funding these improvements is increasing the gas tax. But, it may not be possible for political reasons. He described the innovative concept of toll truckways as a more realistic option. Truck-only lanes could be built on the existing right-of-ways on long distance interstate routes. Southern California Association of Governments (SCAG) Regional Transportation Plan estimates a financial requirement of \$9.9 billion for building 132 miles of four-lane truckway in the greater Los Angeles region. SCAG's initial feasibility study estimated that only 30 percent of these funds could be raised from truck tolls.

Mr. Poole discussed pros and cons of using Longer Combination Vehicles (LCVs) for freight transportation. LCVs have the capacity to carry 2 to 6 times more payload than conventional 18-wheeler trucks. Truck shipping is a \$610 billion business; if shipping costs were cut by even 10 percent, it would mean saving of \$61 billion every year. But LCVs pose a safety dilemma. Nearly 5000 fatalities occur every year in truck-car collisions. It is feared that LCVs are more unsafe than regular trucks.

Mr. Poole reviewed the Comprehensive Truck Size and Weight Study<sup>8</sup>. It studied the costs and benefits of rebuilding the Interstates and National Highway System to handle LCVs. The study estimated net savings of \$9 billion to \$40 billion per year from nationwide use of LCVs, under various scenarios. But, it did not resolve the issues of funding, safety and politics. That led Reason Foundation to propose and analyze an alternative: instead of rebuilding all lanes to handle LCVs, just add special heavy-duty lanes only for trucks. In 2001-02 Reason did a study to evaluate the economic and financial feasibility of adding such lanes to long-distance Interstate routes, to see if such lanes could be financed by tolls.

Reason's economic feasibility analysis found that truck-tolls in the range of \$0.43/mile to \$0.80/mile could be charged, if LCVs were allowed to use the new lanes in states where they are currently prohibited. Rationally a trucking company would pay tolls up to 50 percent of the effective cost saving due to using LCVs on the truckways. Financial analysis also shows that Return on Investment (ROI) for long-distance, rural toll truckways could range from 4.12 percent - 16.97 percent at a toll of \$0.40/mile. Increasing tolls to \$0.80/mile would increase the ROI to 9.17 percent - 33.19 percent.

Political feasibility of toll truckways was also analyzed by the Reason Foundation, using the Ohio Turnpike as a case study. Ohio turnpike has tolls ranging from \$0.38/mile to \$0.43/mile for LCVs. In addition to tolls, these LCVs pay fuel tax of \$0.16/mile. Effectively, total tax on LCV is \$0.54/mile to \$0.59/mile. Clearly, a toll of \$0.40 to \$0.80 could be charged if LCVs were not subject to double taxation by paying tolls as well as fuel tax. Mr. Poole proposed that LCVs should be offered a rebate on federal

---

<sup>8</sup> FHWA, Comprehensive Truck Size and Weight Study, FHWA, August 2000

and state diesel tax. Miles driven by trucks could be recorded by electronic toll system and state agencies could periodically refund the tax collected to trucking companies.

Successful implementation of the concept of toll truckways (TTWs) will require several policy changes. These include provision of right-of-way on Interstate/national network routes for toll truckways (TTWs), liberalizing the existing size and weight limits on TTW lanes, removal of the ban on Interstate tolling for TTWs, exemption from federal and state fuel tax for miles driven on TTWs, and adopting highway design for heavier loads. Finally, adapting the TTW model to southern California's proposed truck lanes would mean designing them to allow operation by LCVs. That, in turn, would mean that significantly higher tolls could be charged than were assumed in the SCAG study.

**Safety, Security: Reducing Risks vs. Increasing Costs.**

Chelsea White, Georgia Tech University

In his presentation, Prof. White discussed the practice of supply chain management and security issues in goods movement. He noted that security and safety issues of international borders and sea ports have direct and indirect impacts on goods movement. Supply chain management has to be modified and made more efficient to offset the impacts of increased security at borders and ports. Therefore, it is very important to clearly understand the factors affecting supply chain dynamics.

A supply chain consists of a combination of several segments involving different firms, also called extended enterprises. Major components of a supply chain include suppliers (of raw material or components), manufacturers and wholesalers/distributors. From a port or border crossing, the inbound or imported goods go either to a manufacturer or to a wholesaler/distributor; from a manufacturer goods may either go to a wholesaler/distributor or directly to retailers. Wholesalers/distributors send the goods received to retailers. No single company has sufficient expertise in management of all aspects of a supply chain. A well-managed supply chain would involve several firms, specialized in management of its different segments. Supply chain management is aimed at savings in time and cost of transportation, and reliable delivery schedules. Prof. White cautioned that once a supply chain is put together, careful monitoring is required to ensure its smooth functioning. Uninterrupted capital supply, safety of freight, and efficient transportation are critical to smooth functioning of a supply chain. Proactive planning could protect supply chain from any disruption due to transportation delays caused by security checks at international border.

Prof. White mentioned that heightened security concerns after 9/11 have led to research on:

- Port access control
- Models of risk management
- Policy changes to increase border security
- Firm level strategic issues
- Other operational complexities arising out of increased security measures.

Ideally, a container should be inspected before it is allowed to enter U.S. ports. But, the volume of containers arriving at U.S. ports is too large for manual inspection of all containers. Per Prof. White, as an innovative security measure, electronic container seals are being developed for better security control on containers. Prof. White feels that security measures are necessary, but they should not delay the entire supply chain. Internal transfer time including security clearance of transit containers should also be minimized.

Prof. White described an emerging concept in port security, the “Container Security Initiative.” It identifies three key issues that need to be addressed to ensure effective security:

- 1) Operational- order in which a container should be processed to minimize delay at ports
- 2) Strategic- maximum percentage of all arriving containers to be inspected individually
- 3) Policy- cost and benefits of determining which containers are to be inspected

Concluding his presentation, Prof. White mentioned that the National University of Singapore and Georgia Tech University have initiated a research partnership on container port efficiency. This partnership has played a major role in the emerging research and development networks in Asia Pacific, Europe and the United States.

### **Measuring Impacts: Data and Research Needs**

#### **Paul Bingham, DRI-WEFA**

In his presentation, Mr. Bingham highlighted the importance of freight data. Data is essential to quantify impacts of traffic congestion on reliability, financing, pricing, safety, security and other issues. Forecasting is not possible without good historical data. Data is also critical to making the right decisions. Data on the freight transportation system is divided between the public and private sectors. Public sector data is collected at many levels and is organized along political boundaries. Private sector data is collected and maintained by carriers, shippers, trade associations and private vendors often organized along market boundaries. Both public and private data are important in making decisions about

the freight transportation system in the U.S. Access to private sector data is restricted due to confidentiality and privacy issues and the fact that key data sources are proprietary.

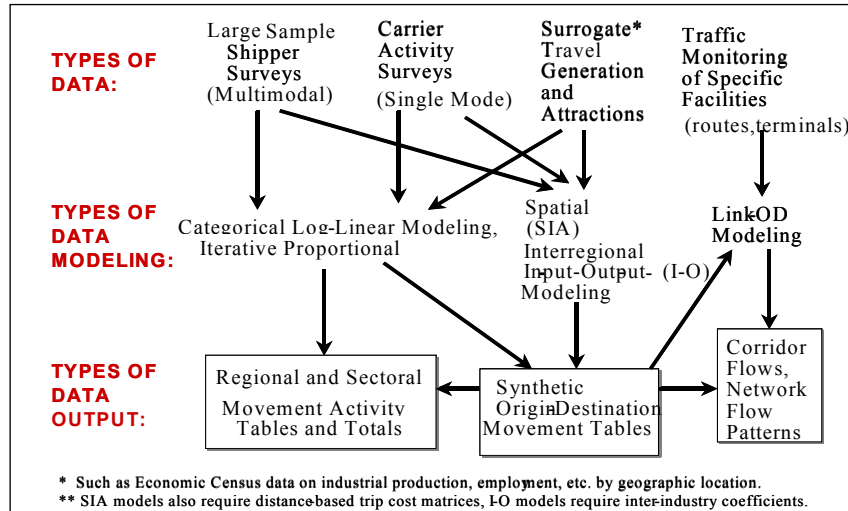


Figure 3. Functional linkages between Data Types, Data Model, and Data Options

to develop affordable and easy to use technology for data collection and transfer is required. The biggest concern in sharing freight data is that of maintaining privacy. Firms want to maintain confidentiality of business information, and fear any secondary use of data i.e. other than research, and security risks from data disclosure. Firms also fear growing liability issues in collection, storage, supply and use of data. Firms are also unsure about the protection of their intellectual property rights in sharing data.

In contrast to freight transportation, passenger transportation data is more readily available. As a result, modeling goods movement is not as advanced as modeling passenger traffic. Freight forecasting model performance could be improved by using better quality and quantity of data from which to estimate relationships. Data mining and data fusion are needed to minimize the costs of any new freight data requirements placed upon the freight industry. Research is critically needed in developing freight data architecture to improve future collection and data applications for policy making needs. Technology needs to be developed for collecting, distributing, analyzing and disseminating data. Better integration of inter-modal transportation data across the supply chain is required. Mr. Bingham concluded by stating that advanced tools to fill data gaps are needed.

Mr. Bingham noted that among various freight transportation modes, truck data is least accessible, followed by air, rail and water, in that order. Often firms and individuals have real problems in collecting and sharing information. Cost of equipment and manpower in data collection is an extraneous financial burden to a firm or individual. Research

## **Stakeholder Panel 2: Policy Perspectives**

This section, moderated by James C. Codell, III, Kentucky Transportation Cabinet, discussed stakeholders' view on various government policies that affect goods movement including problems and deficiencies in existing policy framework and its impacts.

### **State Department of Transportation**

#### **Tom Norton, Colorado Department of Transportation**

Mr. Norton began his presentation by acknowledging the benefits of public-private partnerships. Public-private partnerships are an effective way to implement government policies. The best utilization of public funds requires cooperation between public and private transportation agencies. Public-private partnerships should be encouraged in building and operating the transportation system. The Colorado State Department of Transportation (CDOT) has a four-way partnership with Federal Highway Administration (FHWA), Federal Transit Authority (FTA) and U.S. Department of Transportation (USDOT) and the Regional Transportation District- Denver (RTD) to implement the T-REX project (Transportation Expansion Project- a combination highway and transit project). The Colorado model can be replicated to develop partnerships with the freight industry. Mr. Norton also cautioned that in any joint venture, details of sharing and use of revenues and other funds should be unambiguously defined in advance.

### **Local Communities**

#### **Richard Hollingsworth, Gateway Cities Partnership, Inc.**

Mr. Hollingsworth began his presentation by noting the involvement of several agencies in goods movement. Each agency has its own perspective. Often, agencies do not comprehend relationships between various issues. For example, a sea-carriers' major concern is to bring cargo containers to the ports; they are not much concerned about traffic congestion and air pollution generated by inland freight movement.

While international trade has global benefits, its negative impacts like traffic congestion are largely local. Lately, communities have been voicing their concerns over the externalities of voluminous truck traffic. Excessive truck traffic drives communities' dissatisfaction with international trade, which affects local governments' willingness to absorb additional trade related traffic. From the perspective of local governments, international trade consumes too much land in warehouse space, for example, relative to the number of jobs it creates locally. The local benefits of international trade, such as job creation are not always apparent, but issues concerning its negative impacts remain alive for a long time. Major problems and concerns of local communities include toxic diesel pollution and congestion due to truck

traffic. With all its externalities, community and local governments consider international trade to be a huge cost center.

Mr. Hollingsworth recommended that ports should be sensitive to the problems of their local communities. He suggested several steps that ports could take to curb traffic congestion. He suggested extended hours of operation at the marine terminal gates, would disperse truck trips in time. Opening terminal gates at night would transfer some of the day time truck traffic to the night, and therefore reduce traffic congestion during day. But, such measures require cooperation of ports and private businesses including trucking and warehouses.

Opening terminal gates at night will increase operation cost for marine terminal operators. But, it will also produce benefits like faster goods movement, timely deliveries, and fewer waiting hours for trucks at ports. Presumably, the extra cost of such measures would be passed down the supply chain, where retailers like Wal-Mart would finally pass it on to consumers. As a significant number of trips are critical to financial viability of opening the terminal gates at night, Mr. Hollingsworth recommended introducing longer gate hours port-wide and not on a piecemeal basis.

In addition, other policy measures like congestion pricing are needed to check traffic congestion. Freeway expansion would reduce congestion temporarily, but may cause other problems like obstructions during construction. If their concerns are not addressed appropriately, the communities may themselves intervene in the process of goods movement and use the political process to restrict or prohibit trucking and/or warehousing in their cities.

## **Local Government**

### **Eugene Ryan, Chicago Area Transportation Study**

In his presentation, Mr. Ryan discussed freight issues in the Chicago metropolitan area. He noted that Chicago is a major freight center of the United States. Freight problems in the Chicago metropolitan area are similar to those in large port cities of California, e.g. Los Angeles. However, the flow of TEU of cargo containers in Chicago is larger than any city on the west coast:

- An estimated 2.5 million tons of freight are moved daily by 1,100 freight trains and 36,000 railcars (1996)
- An estimated 1.6 million tons of freight are delivered daily by an estimated 213,000 medium and heavy duty trucks (1996)

Freight movement in Chicago is closely related to its location in the country and its historic role as a distribution center. Chicago has remained a major distribution center for U.S. imports and exports.

Large growth in freight volumes transported through the Chicago port has caused severe traffic congestion in the entire metropolitan area.

In the past, there have been several efforts in Chicago to deal with traffic congestion. But only recently, authorities of Chicago have developed a notion that public policies are needed to address the problems arising due to freight movement. Mr. Ryan also mentioned that policies that curb traffic congestion should not adversely affect Chicago's position as the main intermodal transportation center in the United States.

Until recently, the Chicago Area Transportation Study (CATS) was mainly concerned about passenger traffic. But realizing the importance of freight to the Chicago metropolitan area, CATS is including economic and other impacts of freight movement for Long Range Planning and Programming.

Significant infrastructure improvements are required in the Chicago metropolitan area. But funding these improvement projects is a problem. Increasing the gasoline tax, even by a few cents, does not sound politically possible. But it can still be put on the ballot and efforts be made to achieve popular approval. The need for gas tax increase and its social benefits should be articulated and made known to local communities. Additional revenues generated by increasing gas tax should be dedicated for infrastructure improvement only. Dedicated tolls on roads and highways are another option for funding of infrastructure projects. Mr. Ryan concluded by observing that these are sensitive political issues and require cooperation between public and private agencies for successful implementation.

## **Highway Users**

### **Stephen Finnegan, Auto Club of Southern California**

Mr. Finnegan began his presentation by highlighting traffic congestion, safety on roads, and funding for infrastructure projects as three main issues in freight transportation today. Like several previous panelists, Mr. Finnegan noted that population has been increasing in the United States and so has automobile traffic. In addition to passenger traffic, freight traffic has grown significantly since 1990. In the future, cargo container traffic is forecasted to increase even more. Total vehicle miles traveled (VMT) have been growing at a greater rate than the capacity of highways (roadway miles) over the last two decades (Figure 4). The imbalance between demand and supply is increasing. Insufficient transportation capacity creates traffic congestion, road accidents and travel delays.

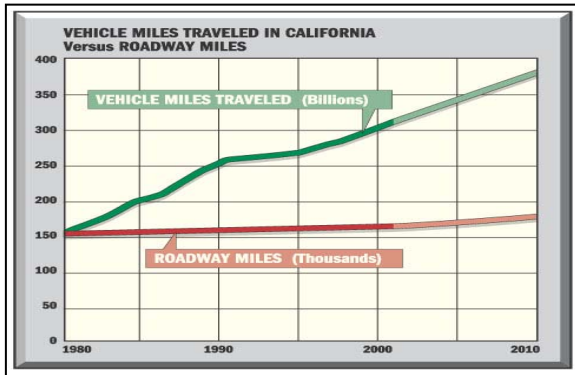


Figure 4. Growth in highway capacity vs. growth in automobile traffic

Funding for these projects is still an issue. Traditional as well as innovative financing mechanisms should be explored to generate the required funds. The Alameda corridor is an exemplary project in innovative finance.

Four major infrastructure improvement projects are proposed in Southern California:

1. Addition of traffic lanes in each direction along the I-710 corridor
2. Addition of truck lanes to SR-60
3. The I-10 National Freight Corridor
4. The Alameda Corridor East

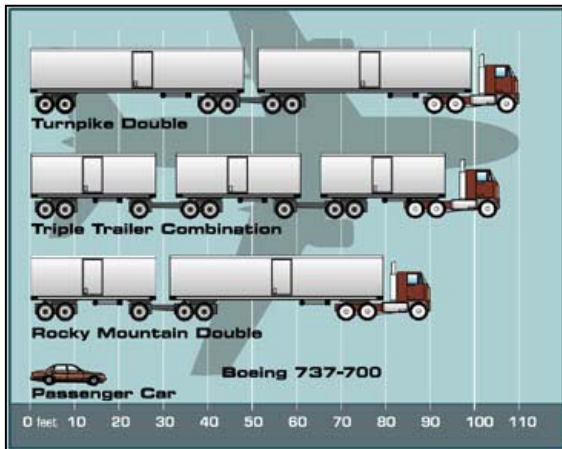


Figure 5. Length of LCVs as compared to a Boeing 737

The Auto Club is concerned about safety issues on highways, especially with growing truck traffic. Driving Long Combination Vehicles (LCV) mixed with general traffic raises serious safety issues. Some LCVs today are comparable to the length of a Boeing 737-700 jet (see Figure 5). LCVs should never be mixed with general traffic. Exclusive-use lanes should be built for truck and LCV traffic and LCVs should be limited to the states and areas in which they are currently approved and currently operate. A survey shows that 70 percent of all AAA members are opposed to LCVs due to safety concerns. Truck traffic and other uses of diesel engines also raise health issues like toxic emissions from diesel vehicles and potential PM-10 pollution.

## Policy Options

This section discussed potential policy changes to address various issues in goods movement. Innovative ways to address freight issues were also discussed.

### **John Horsley, AASHTO**

Mr. Horsley discussed the financial needs of the U.S. transportation infrastructure and suggested several ways to meet them. He noted that the country's transportation infrastructure needs significant funds for highway and transit improvement programs. AASHTO estimates place an annual requirement of \$45 billion for highway projects and \$11 billion for public transit improvements. The nation's transportation needs should be promoted aggressively. States and MPOs should develop expertise to compete for transportation funds in federal budget outlays. Like other development projects, research in transportation is very important. Mr. Horsley proposed that \$ 900 million should be set aside each year for financing transportation research programs.

Active public-private partnerships are very important for successful infrastructure projects. A better government industry interface is needed to facilitate cooperation and coordination. Mr. Horsley recommends a 'National Freight Transportation Council' to effectively address freight transportation needs. The council would include members from key industries (shippers, carriers, trucking) as well as public agencies (State DOTs, MPOs, others). AASHTO also recommends that:

- Existing financing instruments should be used more widely and aggressively.
- State Infrastructure Banks (SIBs) should be adopted in all states.
- The threshold for Transportation Infrastructure Finance and Innovation Act (TIFIA) tax credit bonds should be lowered to 25 percent.
- Additional innovative financing techniques should be developed.
- The Alameda corridor is an excellent example of multiagency, public-private partnership and innovative financing. More of such efforts are required to build the nation's transportation infrastructure.
- Finally, goods movement projects should become eligible for Congestion Mitigation/ Air Quality (CMAQ) and other special finding sources.

Global Gateways, Global Outcomes

**Richard Nordahl, Office of Goods Movement, Caltrans**

Mr. Richard Nordahl began his presentation by describing the Global Gateways Development Program (GGDP). Senate Concurrent Resolution 96 (SCR 96) requested Caltrans to develop GGDP. The goal of the GGDP is to improve the access to, and mobility through the major freight gateways in California. It focuses on facilities with the highest freight volumes and greatest transportation challenges including international airports, seaports, trade corridors (rail lines and highways), border crossings, major intermodal transfer facilities and goods movement distribution centers. It defines the priority facilities as:

- Gateways- Los Angeles, San Francisco Bay Region, Central Valley, and border
- Seaports- Los Angeles, Long Beach, Hueneme, Oakland, Sacramento, Stockton
- Highways- International trade corridors, for example I-710, SR-60
- Rail Lines- UP, BNSF, short line

The GGDP identifies sixty-one *improvement concepts* across six categories. Each concept description includes the transportation mode or route, a deficiency description, and a proposed improvement methodology. Types of improvements under consideration include:

- Capacity Enhancements- additional lanes, dedicated truck lanes, etc.
- Operational Improvements- auxiliary lanes, interchange modifications, grade separations, etc.
- Intelligent Transportation System (ITS) Applications- system management, incidence response, pre-clearance, equipment safety and security, etc.
- Other improvements like safety projects, new roadside rest areas and truck parking, grade crossing improvements, etc.

Mr. Nordahl stated that the GGDP recommends that the state, regional and local entities should take an aggressive role in the planning, development and funding of freight transportation projects. It also recommends that during the TEA-21 reauthorization process in 2003, the state should seek a stronger goods movement emphasis and greater funding flexibility in the use of traditional federal transportation funding programs. The GGDP also recommends promoting and funding public-private partnerships and joint-venture infrastructure projects to improve the effectiveness of trade mobility in the state. These efforts will require a well-coordinated statewide coalition to compete for funding of the best goods movement transportation investments. The bottom line, however, is goods movement projects selected for funding should be those that have the highest transportation, economic and community benefits.

In his presentation, Mr. Nordahl emphasized the importance of international trade to the U.S. economy and how the nation's economic competitiveness now depends on it. Growth in international trade has fueled a large increase in freight traffic, especially through global gateways. Due to capacity constraints, freight traffic growth has created congestion, pollution and other problems. Currently

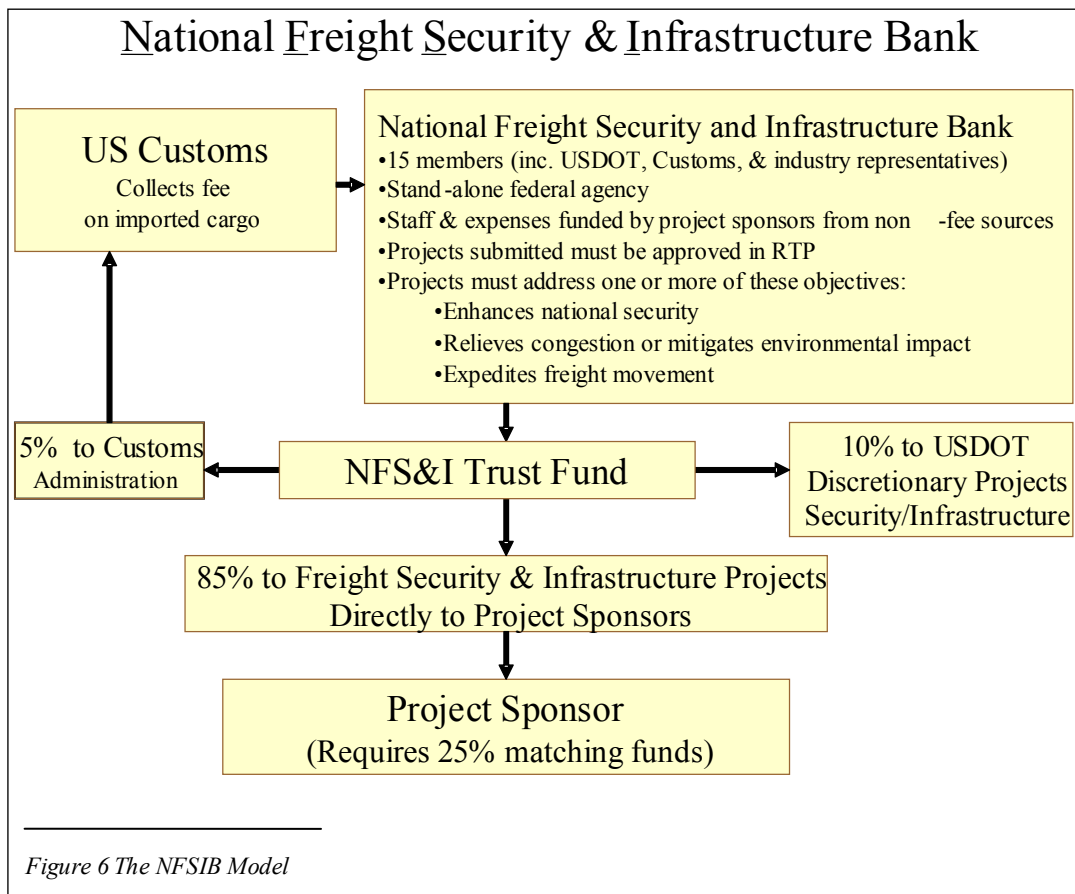
available financial resources, however, are insufficient to address the infrastructure needs completely. Therefore, additional financial resources and innovative financing mechanisms are needed to fund goods movement infrastructure projects. The efficiency of the existing system should also be improved to achieve higher throughputs through innovative technology like ITS to enhance the existing transportation system's performance.

As a state goal, Mr. Nordahl specified that the GGDP advocates the development of a multimodal goods movement transportation system that is safe, efficient, reliable and effective. The achievement of this goal would reduce congestion, improve mobility, improve accessibility, reduce transportation costs, foster economic development, and promote overall livability and high quality of life. Mr. Nordahl concluded by calling for a coalition between federal agencies like USDOT and FHWA; state governments; regional and local agencies, the freight industry and all other stakeholders in transportation to address goods movement issues.

**James Preusch, Infra-Trans, LLC**

Mr. Preusch proposed an innovative revenue source for freight transportation needs, creation of a "National Freight Security & Infrastructure Bank," (NFSIB). It would be a stand-alone federal agency, funded by an innovative fee called "NFSIB security and infrastructure fee." U.S. Customs would administer the fee based on existing custom duties. This fee would apply to all commodities crossing U.S. boundaries. The fee would be adjusted annually by the Consumer Price Index (CPI). It would be applied nationwide at all seaports handling international import cargo, at land border crossings, and at inland cargo interchange points. It would be attached to products and importers who would presumably pass the fee on to consumers. In this way responsibility for freight mobility, intermodal transfer, and infrastructure development would be shared by beneficiaries. The burden of NFSIB fee would not be solely borne by importers.

The collected fee would flow to NFSIB funds. Eighty five percent of NFSIB funds would be dedicated to finance projects, 10 percent would go to USDOT, and 5 percent to U.S. Customs for administration. Staff and administrative costs of NFSIB would be funded by project sponsors application fees (See Figure 6).



Projects funded by NFSIB would have to be included in the Regional Transportation Plan adopted by the local MPO. Project sponsors/applicants might include states, cities, regional and local public agencies, port authorities, Joint Power Authorities and joint applicants, i.e. public agencies and private firms. Projects would have to address one or more of the following objectives to become eligible for NFSIB funding:

1. Increase national or homeland security
2. Expedite shipments of imported cargo
3. Increase capacity
4. Improve communications and information sharing
5. Reduce delays or increase speed or efficiency of shipment
6. Relieve traffic congestion
7. Reduce air and noise pollution or mitigate other environmental impacts

Project sponsors or applicants would have the option of choosing between direct funding, debt or a combination of both as a financing mechanism. Project sponsors would provide 25 percent matching funds. NFSIB's Board of Directors would include 15 representatives from public and private sectors. Public agencies would include USDOT, U.S. Customs and Ports. Private sector representatives would come from ocean-carriers, shippers, trucking and railroad industries. The Board of Directors would

decide the projects for NFSIB funding. However, USDOT would have the authority to veto any project recommended by the Board of Directors of NFSIB. Mr. Preusch concluded that new revenue sources are critically needed to meet the national infrastructure needs, and all beneficiaries should pay for benefits of improving infrastructure.

**Juanita Millender-MacDonald, Congresswoman 37<sup>th</sup> District, California**

Miss Millender began her speech with the slogan, “Transportation is America.” The nation’s economic growth depends on sound transportation infrastructure. Therefore, we should invest in transportation. The Governor of California recognizes this and therefore, supported the Alameda Corridor project. This project is an example of successful public-private partnership, more of which are needed to move people and goods. Highway funds are needed not only for California, but for all the states in the country. We must make all efforts to ensure that transportation funding is not reduced.

California is very important to rest of the nation. The port shutdown last month gridlocked the nation’s economy. The Bush administration had to intervene to resolve the matter. The port lockout is a grim reminder of interdependence of all regions within the entire country.

The transportation system has become a “virtual warehouse” for our businesses. ‘Just-in-time’ delivery enables smaller inventories, keeps operation costs down and is very important for businesses. An efficient transportation system is needed to meet the delicate timing needs.

Population has increased, and so has international trade. California has 12.5 percent of the nation’s population, and Southern California has 6 percent of the nation’s population in its geographic area. We cannot afford traffic jams and gridlocks on highways; transportation is a critical part of quality of life. Miss Millender concluded by repeating her commitment to the transportation needs of California.

**Transportation International Trade and Economic Competitiveness**

**James R. McCarville, Port of Pittsburgh Commission**

Mr. McCarville began his presentation by noting that the Port of Pittsburgh is the second largest inland river port in the nation and the 14th largest port of any kind. It is a strategic intermodal center, served by more than 30 privately-owned public river terminals, 18 barge lines, 2 class I railroads, and 4 interstate highways. 54 million tons of cargo was handled in the Port of Pittsburgh in 2000. He added

that the U.S. inland waterway system has significant potential for moving freight. Inland ports could be used to reduce congestion at coastal ports, and reducing some freight traffic on highways as well. Inland ports could be combined with railroad network to provide a multimodal freight transportation service, which would be more efficient and less expensive way to transport cargo from a port. He suggested that waterways and inland ports should also be considered as potential solutions in the analysis of all modal traffic congestion problems.

Inland ports across the nation can participate in goods distribution network. Presently, freight is transported across the country by trucks and/or railroads to cities like Los Angeles and Chicago that are transportation hubs. From here, goods are distributed in the region, on mostly short-haul routes. As freight volumes increase, inland distribution centers would be needed as connectors to existing transportation hubs. Mr. McCarville feels that ports in Pittsburgh, Kansas City and Tulsa are potential inland distribution centers.

Dams are built primarily for flood control and water supply, but they also serve as recreation areas. The designed lifespan of dams is 50 years. However, many dams have exceeded their 50-year life span, and need significant funds for maintenance. Presently, the U.S. Army Corps of Engineers maintains dams and channels in the Pittsburgh region. Due to budget cuts, maintenance of dams is lagging. States need to be concerned about the lack of maintenance provided for the locks and dams because the federal government is reducing service levels on what they term low-use rivers and at some point may try to transfer them to the states.

Mr. McCarville noted that inland ports need access to federal funding for intermodal connectors and technology improvements. He stressed the implementation of federal policies that would utilize the funds already collected from the Inland Waterway User Fund (with a current surplus of \$400 million) and the Harbor Maintenance Trust Fund (with a surplus of \$1.6 billion as of December 2000) for the purposes for which they were collected. He also suggested that a portion of the U.S. highway gas tax funds should be dedicated to port-intermodal development projects. Border and corridor funds should be used for domestic as well as international corridors. Ports should be allowed to form multi-jurisdictional transportation intermodal finance infrastructure authorities, similar to the Alameda Corridor project, which would allow the ports to access leverage and flex funds from existing TEA-21 programs.

Mr. McCarville concluded by noting that it is prudent to invest in the transportation infrastructure- it has potential to generate \$6 in economic benefits for every \$1 invested.

## Conclusion

The symposium presentations were thought provoking discussions on a variety of issues and problems related to international trade and goods movement in the United States and potential future strategies to ensure competitiveness in the international market.

There was substantial agreement that international trade will continue to increase, and hence goods movement volumes will increase as well. There was also agreement that transportation infrastructure is a critical component in international trade and economic competitiveness. Many strategies exist for improving productivity of the goods movement supply chain.

The symposium discussed potential ways to improve goods movement within the existing infrastructure. Port operation could be made more productive by increasing gate hours of container terminals, if possible to 24 hours. Extending the terminal gate hours would help goods movement in two ways. First, longer work hours would result in higher container throughput from terminals; and second, truck traffic would be better distributed over time, which would reduce some traffic congestion during the day. Workforce training could also improve productivity of terminals. There is scope for developing intermodal facilities using the existing railroad network. Railroads could present capacity options for carrying freight on long haul routes. Port authorities feel an intentional standardized format of paperwork would help them process it faster, thereby improving productivity at terminals. There is scope for improvement in logistics of freight movement, particularly supply chain management.

However, given projected increase in trade, additional infrastructure capacity is likely required. In addition to maintenance and rehabilitation needs, several major capital investments were identified: retrofitting highways to accommodate larger trucks, expanded terminal facilities, and in a post 9/11 world, heightened security across the entire supply chain. There is little consensus, however, the relative effectiveness of proposed alternatives, or on how the necessary funds should be raised. Possibilities include tolled truck lanes, innovative financial instruments, container fees, or broader access to the highway trust fund. Some participants recommended federal funding eligibility for private infrastructure projects which have clear public benefits.

To achieve any significant improvement in freight movement, a combined and coordinated effort of all stakeholders including ports, trucking and warehousing, railroads, and other public and private agencies will be needed. There were several suggestions to better coordinate the efforts of public agencies and private industry including establishing a single point of contact for freight issues at the state level, a freight advisory council consisting of representatives from public and private stakeholders.

AASHTO recommended establishing a freight transportation council at the national level. More aggressive policy support for promoting public private partnerships was also recommended.

All participants agreed on the need for improving goods movement. But there was difference of opinion on the scope and area of improvements. While some stressed the need for research and development of advanced technology, others felt the existing technology is adequate but is not being used to its full potential. While private industry demanded longer port hours, authorities and technical operators were apprehensive about the economic and financial feasibility of such measures. Another contentious issue was local impacts of international trade, like traffic congestion, air pollution and safety. Individually, several participants focused on a smaller part of the entire operation, missing out the larger picture.

Research on freight movement related issues is needed. Unlike passenger movement data, freight data is not readily available. Access to private sector data is restricted due to confidentiality and privacy issues and the fact that key data sources are proprietary. As a result, freight movement modeling is not as advanced as passenger movement. Technology is needed to facilitate data collection and sharing. Speakers suggested that universities and colleges should be encouraged to include freight and trade related issues in relevant programs. AASHTO recommended setting aside significant funds every year for freight research.

Recommendations presented were frequently politically contentious. While federal funding for essentially private infrastructure is attractive to port operators, for example, state highway operators see a threat to already scarce transportation dollars. A new customs fee to fund trade-related infrastructure may be considered an appropriate user fee, but manufacturers and importers argue that such fees would be passed on, increasing costs to U.S. users and consumers. Extending terminal gate hours has been discussed for several years, yet never implemented due to concerns about warehouse access, high costs of swing or night shift labor and other implementation problems. The challenge remaining is to develop consensus around a goods movement agenda that would both use existing resources as efficiently as possible and provide for the future infrastructure needs of a growing economy.

## Appendix 1 Agenda

### Friday, October 25

7:30 – 8:30

#### **Registration, Continental Breakfast**

8:30 - 9:00

#### **Introduction and Welcome**

Genevieve Giuliano, Ph.D.  
Director, METRANS  
University of Southern California

Jeff Morales,  
Director, Caltrans

John Horsley  
Executive Director, AASHTO

9:00 – 10:30

#### **Overview Presentations The National Transportation System and International Trade**

##### **Moderator**

Genevieve Giuliano, Ph.D.  
University of Southern California

Joseph Magaddino, Ph.D.  
California State University, Long Beach

Harry Caldwell,  
Freight Management and Operations, FHWA

10:30 – 10:45

#### **BREAK**

10:45 – 12:30

#### **Stakeholder Panel 1: Industry Perspectives**

##### **Moderator**

Marianne Venieris,  
California State University, Long Beach

##### **Trucking industry**

Warren Hoemann  
California Trucking Association

##### **Rail Industry**

John Samuels, Ph.D.,  
Norfolk Southern

##### **Port Operator**

John Glover  
Port of Oakland

##### **Terminal Operator**

Alan McCorkle  
Mearsk APM Terminals

##### **Labor/Union Representative**

Dominick Miretti, Ph.D.  
International Longshore and Warehouse Union  
Local 63

12:30 – 2:00

#### **LUNCH**

#### **Luncheon Address: Transportation and the Global Economy**

Hon. Maria Contreras-Sweet, Sec. California  
Business, Transportation & Housing Agency

2:00 – 3:30

#### **Freight Transportation: Issues and Problems**

##### **Moderator**

C. Michael Walton, Ph.D.  
The University of Texas at Austin

#### **Congestion/Reliability: How Bad is It?**

Lance Grenzebach  
Cambridge Systematics

#### **Financing and Pricing: How and Who Pays?**

Robert Poole  
The Reason Foundation

#### **Safety/Security: Reducing Risk vs. Increasing Costs**

Chelsea White  
Georgia Tech University

#### **Measuring Impacts: Data and Research Needs**

Paul Bingham  
DRI/WEFA

3:30 – 3:45

#### **BREAK**

3:45 –5:00

**Stakeholder Panel 2: Policy Perspectives**

**Moderator**

James C. Codell, III  
Kentucky Transportation Cabinet Secretary

Tom Norton  
Colorado DOT

Richard Hollingsworth  
Gateway Cities Partnership, Inc.

Eugene Ryan  
CATS, Chicago

Stephen Finnegan  
Auto Club of Southern California

James McCarville  
Port of Pittsburgh Commission

5:00 – 6:00

**Policy Options**

John Horsley  
AASHTO

**Congresswoman Juanita Millender-McDonald**

Richard Nordahl  
Office of Goods Movement, Caltrans

Jim Preusch  
Infra-Trans, LLC

6:00 – 7:30

**RECEPTION**

**Saturday, October 26**

**Morning Site visits:**

1. Pier 400 Maersk APM Terminals
2. Alameda Corridor

## Appendix 2

## Roaster: Speakers and Moderators

**Alan McCorkle**

Operations Management  
Mearsk APM Terminals

**C. Michael Walton, Ph.D.**

Professor of Civil Engineering  
Ernest H. Cockrell Centennial Chair in Engineering  
The University of Texas at Austin

**Chelsea White**

Director, Trucking Industry Program  
Georgia Tech University

**Dominick Miretti, Ph.D.**

Senior Liaison  
Port of Los Angeles and Long Beach, ILWU

**Eugene Ryan**

Associate Executive Director  
Chicago Area Transportation Study (CATS)

**Genevieve Giuliano, Ph.D.**

Director, METRANS  
Professor in the School of Policy, Planning and Development,  
University of Southern California (USC)

**Harry Caldwell**

Chief of Freight Policy  
Freight Management and Operations, FHWA

**Hon. Maria Contreras-Sweet**

Secretary  
California Business, Transportation  
& Housing Agency

**James McCarville**

Executive Director  
Port of Pittsburgh Commission

**Jeff Morales**

Director  
California Department of Transportation (Caltrans)

**Jim Preusch**

Principal  
Infra-Trans, LLC

**Joseph Magaddino, Ph.D.**

Director, Office of Economic Research  
Professor of Economics  
California State University, Long Beach

**John Glover**

Deputy Executive Director  
Port of Oakland

**John Horsley**

Executive Director  
American Association of State Highway and  
Transportation Officials (AASHTO)

**John Samuels, Ph.D.**

Norfolk Southern

**Juanita Millender-McDonald**

Congresswoman 37<sup>th</sup> District

**Lance Grenzeback**

Senior Vice President and Principal  
Cambridge Systematics

**Marianne Venieris**

Executive Director, CITT  
Deputy Director, METRANS  
California State University, Long Beach

**Paul Bingham**

Principal, Global Trade and Transportation Practice  
DRI-WEFA

**James C. Codell, III,**

Kentucky Transportation Cabinet Secretary  
President of AASHTO

**Richard Hollingsworth**

President/CEO  
Gateway Cities Partnership, Inc.

**Richard Nordahl**

Chief of Office of Goods Movement  
Caltrans

**Robert Poole**

Director of Transportation Program  
Reason Public Policy Institute

**Stephen Finnegan**

Management Consultant  
Auto Club of Southern California

**Tom Norton**

Executive Director  
Colorado Department of Transportation

**Warren Hoemann**

Vice President  
California Trucking Association

## Appendix 3: Speaker and Moderator Biographies

### **Alan McCorkle**

Operations Management, Mearsk APM Terminals

Mr. McCorkle has been with Maersk affiliated companies for 12 years. In addition to Long Beach, he has been in operations management for Maersk facilities in Tacoma, Washington, Oakland, California and Kingston, Jamaica. He has served on the Southern California PMA Sub-Steering Committee and the Steamship Association of Southern California. Alan graduated from Clemson University in 1989 with a degree in Business Management.

### **C. Michael Walton, Ph.D.**

Professor of Civil Engineering, Ernest H. Crockrell Centennial Chair in Engineering, University of Texas at Austin  
Dr. Walton is Professor of Civil Engineering and holds the Ernest H. Cockrell Centennial Chair in Engineering at The University of Texas at Austin (UT). In addition, he holds a joint academic appointment in the Lyndon B. Johnson School of Public Affairs. Dr. Walton is a member of the National Academy of Engineering. He is a past-chair of the Transportation Research Board (TRB) Executive Committee and the western region vice chairman of the American Road and Transportation Builders Association (ARTBA). He is a founding member of the Intelligent Transportation Society (ITS) of America and currently serves as chair on the Board of Directors. He is a Fellow of the American Society of Civil Engineers and the Institute of Transportation Engineers. He also holds many other positions in technical societies and the Transportation Research Board. Currently he is chair of TRB's Committee for the Congressional Study for a Future Strategic Highway Research Program and the Research and Technology Coordinating Committee (FHWA). Dr. Walton is the recipient of numerous honors and awards, including the 2000 George S. Bartlett Award in recognition for outstanding contributions to highway progress, a joint award of the American Association of State Highway and Transportation Officials (AASHTO), TRB and ARTBA; The American Society of Civil Engineers', 1999 Francis C. Turner Lecture for contributions to transportation research, education and practice. The Transportation Research Board presented Dr. Walton with the 1998 W.N. Carey, Jr. Distinguished Service Award.

### **Chelsea White**

Director, Trucking Industry Program, Georgia Tech University

Mr. White III teaches courses about decision-making under uncertainty and risk. His areas of research interest include stochastic optimization and artificial intelligence for problem solving, with application to transportation, logistics, and supply chain systems. His current research focus is concerned with how real time information can help improve productivity and security in the transportation and logistics sector of the economy. He is the Director of Georgia Tech's Trucking Industry Program, which is a member of the Sloan Foundation's Industry Centers Network. His involvement with the IEEE includes serving currently as editor of two of the IEEE Transactions. He is past president of the IEEE Systems, Man, and Cybernetics Society, a Fellow of the IEEE, the recipient of the 1999 IEEE SMC Norbert Wiener Award (an award for life long contributions in research), and a recipient of the IEEE Third Millennium Medal. He is a member of the Board of Directors of several public and private organizations, including Intelligent Transportation Society (ITS) of America, a Utilized Federal Advisory Committee to USDOT. As the ITS America representative, he has recently testified before the U.S. Senate Committee on Environmental and Public Works regarding the "Reauthorization of the Federal Surface Transportation Research Program."

### **Domenick Miretti, Ph.D.**

Senior Liaison, Port of Los Angeles and Long Beach, International Longshore and Warehousing Union

Dr. Miretti is the Senior Liaison, Port of Los Angeles and Long Beach, ILWU. Dr. Miretti is currently a member of the International Longshore & Warehouse Union, Local 63, Marine Clerks Association. He has been a member of the ILWU for the past 51 years. Dr. Miretti serves the union as senior liaison to the ports of San Pedro Bay and holds membership on numerous maritime committees. His most recent appointments include State Senator Betty Karnette's Maritime Advisory Committee and the Los Angeles/Long Beach Harbor Safety Committee. Dr. Miretti served on the initial Planning Committee for the ports' 20-20 Plan. In addition to his union duties, Dr. Miretti is an educator, professor and director of the International Commerce and Career Center at East Los Angeles College in Monterey Park. Dr. Miretti is a member of the Executive Board of the Policy and Steering Committee of the Center for International Trade and Transportation (CITT) at CSULB. He was recently appointed to Mayor Hahn's Port Security Task Force, 2002.

**Eugene Ryan**

Associate Executive Director, Chicago Area Transportation Study (CATS)

Mr. Ryan is the Associate Executive Director of the Chicago Area Transportation Study (CATS). CATS is the Metropolitan Planning Organization (MPO) for northeastern Illinois responsible for regional transportation planning for an area containing over eight million people with an extensive highway, public and freight transportation system. The Chicago region is the largest intermodal volume handler in North America. Mr. Ryan will be completing his third decade with CATS this year where he has been involved in the full spectrum of planning projects and issues affecting the Chicago area. He received his education at the University of Illinois at Chicago holding B.S. and M.S. degrees in engineering.

**Genevieve Giuliano, Ph.D.**

Director, METTRANS, Professor in the School of Policy, Planning and Development, University of Southern California  
Professor Giuliano is Professor in the School of Policy, Planning, and Development, University of Southern California and Director of the METTRANS joint USC, and California State University Long Beach Transportation Center. Professor Giuliano's research interests include: relationships between land use and transportation, transportation policy evaluation, and impacts of information technology on transportation and travel behavior. Results of her research have been published extensively, she has presented numerous papers at conferences both within the US and abroad. Professor Giuliano is currently directing the Provost's Initiative on Information Technology, Society and Space. She is a former faculty fellow of the Lincoln Institute of Land Policy, serves on the Editorial Boards of Urban Studies and Journal of Transport Statistics, and is a member of the Executive Committee of the Transportation Research Board. She has participated in several National Research Council committee projects; most recently the Committee for Evaluation of the CMAQ Program.

**Harry Caldwell**

Chief of Freight Policy, Freight Management and Operations, Federal Highway Administration

Mr. Caldwell is the Chief of Freight Policy for the Federal Highway Administration. He develops policy and legislative strategies to promote freight and international trade transport. From 1988-1998 he managed the biennial Condition & Performance Report to Congress, assessing the capital needs on the Nation's highway, bridge, and transit systems. In 1994 he managed the readiness assessment of North American transport systems for international trade, and authored the US borders program in TEA-21. Currently, Mr. Caldwell is drafting comprehensive freight productivity initiatives for TEA-21 reauthorization. He works closely with regional trade transport coalitions, and speaks frequently throughout North America on issues of trade transport, economic development, and institutional reform. A professional geographer by training, he has been with FHWA for 29 years.

**Hon. Maria Contreras-Sweet**

Secretary, California Business, Transportation and Housing Agency

Secretary Contreras-Sweet directs one of the most powerful agencies of state government. She manages business regulation, transportation and housing in California, and is responsible for a budget of \$12.4 billion, comparable to the size of the defense budget for Canada. Secretary Contreras-Sweet directs a workforce of more than 47,000 employees, the same number of employees at Microsoft. She is listed by Hispanic Business magazine among 80 of the most influential and "Elite Hispanic Women" in the United States. Secretary Contreras-Sweet:

- Is a member of the Governor's Small Business Reform Task Force, which is responsible for identifying problems and ideas from the small business community concerning the regulation and assistance of state government with small business.
- Spearheaded the Governor's largest transportation augmentation in the state's history – \$6.8 billion. She manages this major program aimed at traffic congestion relief.
- Led an economic summit last winter at Disney Studios that brought Governor Gray Davis together with nearly 80 business leaders, elected officials, labor leaders and economists to discuss California's economy and measures that can be taken for job creation and growth.
- Assisted the Governor in investing an unprecedented \$500 million for housing since taking office.
- Championed the Governor's efforts to create the Department of Managed Health Care and the Office of Patient Advocate—a watchdog over HMO's and the medical industry that will assure a more responsive and accountable health care system.

Governor Davis appointed Contreras-Sweet Secretary in January of 1999. She is the first Latina in California history to be a member of the Governor's cabinet.

**James McCarville**

Executive Director, Port of Pittsburgh Commission

**Jeff Morales**

Director, California Department of Transportation (Caltrans)

Director Morales is Director of the California Department of Transportation (Caltrans), where he manages a \$10 billion budget and over 23,000 employees working to build, maintain and operate the largest state transportation system in the country. Director Morales came to the Department after serving as Executive Vice President for Management and Performance at the Chicago Transit Authority (CTA). Prior to his tenure at the CTA, he was a senior staff member with Vice President Al Gore's National Performance Review, the task force to reinvent the federal government. He also held senior positions at the U. S. Department of Transportation and on the staff of the United States Senate. Today, the Caltrans is implementing the largest transportation investment program in the State's history, with \$7 billion of work underway – 60% more than just three years ago. A centerpiece of the program is Governor Davis' Traffic Congestion Relief Program. Through the Governor's program, the Department not only is making record investments in the State's highways, but also is working to expand transportation options for Californians through unprecedented investments public transportation.

**Jim Preusch**

Principal, Infra-Trans, LLC

Mr. Preusch is Principal of Infra-Trans, LLC and has 30 years of financial and strategic planning, project management, and operations experience. His background includes a balance of public and private sector knowledge. His financing and project experience includes work with the U.S. Department of Transportation, the Oregon Department of Transportation, the Oregon Department of Energy, the Port of Los Angeles, the San Joaquin Hills Transportation Corridor Authority, the Alameda Corridor Transportation Authority (ACTA), the Orange North America Transportation Access Corridor (OnTrac), the North Coast Rail Authority, and the Los Angeles Export Terminal (LAXT). Mr. Preusch has focused his talent and expertise on assisting public sector agencies in designing and implementing funding strategies for capital development and infrastructure projects. During the past several years he worked with the U.S. Department of Transportation-Federal Highway Administration (FHWA) in crafting and implementing the Transportation Infrastructure Finance and Innovation Act (TIFIA). Approved by Congress in 1998, this innovative financing program, which was modeled after the \$400 million FHWA–ACTA loan, provides funding for major transportation projects.

**Joseph Magaddino, Ph.D.**

Director, Office of Economic Research, Professor of Economics, California State University, Long Beach

Dr. Magaddino is the Chairman and Professor of Economics at CSULB. Dr. Magaddino serves as director of the Office of Economic Research. Dr. Magaddino received his doctorate at Virginia Tech in 1972 and joined the faculty at CSULB in 1973. He has served as chairman since 1982. Dr. Magaddino has been involved in the Economic Forecast Project, which studies the economic performance of the region, since 1997. The forecast is presented every May at the Regional Economic Forecast Conference held on the Long Beach campus. A mid-year forecast update is presented at the Southern California Association of Governments sponsored Regional Forecast Conference held in November-December. He made numerous presentations on the forecast as well as authoring or co-authoring a number of studies concerning the local economy. In addition to the forecast project, Dr. Magaddino's research interests include law and economics as well as forensic economics. Dr. Magaddino has served, on numerous occasions, as an expert witness in civil litigation involving estimates of damages. His professional writings have appeared in a wide variety of professional journals. Prior to assuming his duties as chair, Dr. Magaddino taught at the University of Connecticut, Lakehead University, Virginia Tech and the University of California, Irvine.

**John Glover**

Deputy Executive Director, Port of Oakland

Mr. Glover is Deputy Executive Director of the Port of Oakland, a port authority operating the 4th-largest container seaport in the U.S., a 12-million passenger airport, and an extensive commercial real estate portfolio. In this position he acts as second-in-command to the Executive Director, and oversees the activities of the Corporate Administrative Services, Equal Opportunity, Finance, Strategic and Policy Planning, and Social Responsibility Divisions. Prior to this appointment he was the Director of Strategic and Policy Planning for the Port, responsible for planning the continued growth and development of the Port's maritime, aviation and commercial real estate activities.

**John Horsley**

Executive Director, American Association of State Highway and Transportation Officials (AASHTO)  
Mr. Horsley is Executive Director of the American Association of State Highway and Transportation Officials (AASHTO). He served from 1993 to 1999 as Associate Deputy Secretary of the U.S. Department of Transportation where he was an advocate for intermodal policies, quality of life initiatives and liaison to State and Local Governments, US Congress, and transportation constituencies. A native of the Northwest, Horsley was elected to five terms as County Commissioner in Kitsap County, a community just west of Seattle. He is a graduate of Harvard, an Army veteran, a former Peace Corps volunteer and Congressional aide, and did graduate study at Georgetown. He is Past President of the National Association of Counties, and was founding Chairman of the Rebuild America Coalition.

**John Samuels, Ph.D.**

Senior Vice President Operations Planning and Support, Norfolk Southern  
Mr. Samuels is responsible for Material Management and Research and Tests. Mr. Samuels joined Conrail in 1978 and most recently was named NS vice president Operations Planning and Budget in 1998.

**Juanita Millender-McDonald**

Congresswoman 37<sup>th</sup> District  
Representative Millender-McDonald has been the powerful voice and legislative pioneer of the people of California's 37th District, which includes part of the county of Los Angeles, Carson, Compton, Long Beach, Signal Hill and Watts, since 1996. She is a Democrat with an abiding passion for fairness and justice and is known nationally as a powerful advocate for women, families and small business. Representative Millender-McDonald holds the prestigious position of Democratic Chair of the Congressional Caucus on Women's Issues. She is also serving her fifth year as a Democratic Deputy Whip. Millender-McDonald began her meteoric rise to the House of Representatives in 1990 when she served as a Carson City Council member and, later, as Mayor. In 1992 she was elected to the California State Assembly and, during her first year, she was appointed by the Speaker to chair two powerful Committees—Insurance and Revenue and Taxation. After serving only 20 months in Congress, she became the Ranking Member of the Small Business Committee's Tax, Finance and Export Subcommittee. Currently, she serves as the Ranking member on the Employment and Empowerment Subcommittee. She sits on the powerful Transportation Committee and is the Senior Democrat from California on the Aviation Subcommittee where she established a task force on California Aviation and Airports.

**Lance Grenzeback**

Senior Vice President and Principal, Cambridge Systematics  
Mr. Grenzeback is a Senior Vice President and Principal of Cambridge Systematics, a transportation planning, economics, and management-consulting firm with offices in Boston, San Francisco, Chicago, and Washington, DC. Mr. Grenzeback's areas of practice include freight policy, intelligent transportation systems (ITS), transportation planning and policy, and economic development. Recent projects include: National Freight Productivity Program (Freight Analysis Framework Project) for the Federal Highway Administration's Office of Freight and U.S. DOT Office of the Secretary; Mid-Atlantic Rail Operations Study for the I-95 Corridor Coalition; and Freight Rail Bottom-Line Report for AASHTO (American Association of State Highway and Transportation Officials). Mr. Grenzeback holds undergraduate and graduate degrees from Harvard.

**Marianne Venieris**

Executive Director, Center for International Trade and Transportation, Deputy Director, METRANS, California State University, Long Beach  
Ms. Venieris is the Executive Director of the CITT at California State University, Long Beach—University College and Extension Services. She is responsible for the establishment of CITT, and the Annual State of the Trade and Transportation Industry Town Hall Meetings were instituted under her direction. Ms. Venieris is also the Deputy Director of METRANS and director of the Center for Commercial Deployment of Transportation Technology (CCDoTT). She is currently serving on the Executive Committee and Board of Directors at the Gateway Cities Partnership, Inc., the California Marine and Intermodal Transportation System and the Southern California Marine Transportation System Advisory Council. She serves on the Panel "Integration of Freight Transportation with Intermodal Facilities" under the NCHRP project, and the Editorial Advisory Board of the World Trade Magazine. She is a graduate of Leadership Long Beach, and is the recipient of the Soroptimist's 2002 Woman of Distinction Award in International Goodwill and Understanding.

**Paul Bingham**

Principal, Global Trade and Transportation Practice, DRI-WEFA

Bingham is a Principal in the Global Trade and Transportation Practice of the economic forecasting and consulting firm DRI-WEFA. He has almost 20 years experience managing studies of international trade and freight transportation for public and private sector clients. He has led freight and trade forecasting efforts for more than thirty studies for the U.S. Department of Transportation, several state departments of transportation, Metropolitan Planning Organizations and port authorities during this time. His group also sells the DRI-WEFA World Trade Service, which provides regularly updated forecasts of international commodity trade used in planning efforts by carriers, facility operators and public agencies around the world. Mr. Bingham was an original member and now serves as Chair of the Transportation Research Board Freight Transportation Data Committee. He is also a member of the TRB Committees on National Transportation Data Programs and Requirements, and International Trade and Transportation. He was a member of the National Research Council Committee for their recent study of Freight Capacity for the 21st Century. He is also a member of the Transportation Research Forum and a past member of the editorial review board of the Journal of the Transportation Research Forum.

**Richard Hollingsworth**

President/CEO, Gateway Cities Partnership, Inc.

Mr. Hollingsworth is President/CEO of Gateway Cities Partnership, Inc., an economic development collaborative for 27 cities in south east Los Angeles County. In addition to overseeing the growth of the Partnership into a powerful force for economic development and sustainability in the region, Mr. Hollingsworth has authored two white papers, one dealing with the creations of family wage jobs in the region, and the other proposing an integrated approach to managing the growth of container traffic in the southern California port complex. Mr. Hollingsworth became President of Gateway Cities Partnership in January 1998 having served as a founding board member since the Partnership's inception in 1996. He is Vice Chairman of the Center for International Trade and Transportation at CSULB and he taught classes in Integrated Logistics, Information Technology, Emerging Trends in the Logistics Industry and Transportation Infrastructure in the Global Logistics Specialist Program at CSULB. Mr. Hollingsworth was born in Dublin Ireland. He was appointed Chief of Staff to the Minister for Industry and Energy in the Irish government in 1979. Mr. Hollingsworth came to Southern California in 1983. He joined Kaufman and Broad Home Corporation, California's largest homebuilder, in 1985 and was Vice President of Kaufman and Broad's Urban Division. During the 1990s, he held executive positions in two transportation companies.

**Richard Nordahl**

Chief of Office of Goods Movement, Caltrans

Mr. Nordahl is currently the Chief, Office of Goods Movement, of the California Department of Transportation. His office, as part of the Division of Transportation Planning, is responsible for statewide goods movement planning, including the analysis of goods movement by truck and rail, and movement through California's airports, seaports, and border crossings. His office was recently responsible for the development under legislative request of the Global Gateways Development Program, completed in January 2002. Mr. Nordahl has worked in the goods movement field over eight years. His other major assignments have included being the Department's Acting Chief of Planning in San Diego, staff to Governor Gray Davis' Commission on Building for the 21st Century, and project manager/assistant project manager for the 1993 California Transportation Plan. Mr. Nordahl is a 1976 graduate of the California State University, Sacramento with a degree in Environmental Studies (Planning Concentration). He also holds a 1984 certificate in Rail Transportation from the University of California, Institute for Transportation Studies.

**Robert Poole**

Director of Transportation Program, Reason Public Policy Institute

Mr. Poole is founder and was long-time President of the Reason Foundation, a national public policy think tank based in Los Angeles. He is nationally known as an expert on privatization and transportation policy. He now serves as Director of the transportation program at the Reason Public Policy Institute, a division of the Reason Foundation. In the surface transportation field, Poole's 1988 policy paper proposing supplemental privately financed toll lanes as congestion relievers directly inspired California's landmark private tollway law (AB 680), which authorized four pilot projects including the highly successful 91 Express Lanes in Orange County. To date, 16 states and the federal government have enacted similar public-private partnership legislation. In 1993 Poole oversaw a study that coined the term HOT (high-occupancy/toll)Lane, a term which has become widely accepted since then. As of 2000, several dozen HOT lane projects are either planned or in operation in a dozen states.

**Stephen Finnegan**

Management Consultant, Auto Club of Southern California

Mr. Finnegan has over 15 years of experience in transportation planning, finance, and advocacy. His career includes work as a financial analyst with Bank of America, several positions in planning, operations, and finance with the Los Angeles County Metropolitan Transportation Authority, serving as a management consultant to cities and counties, and leading transportation policy, analysis, and advocacy work for the Automobile Club of Southern California. While at the MTA, Mr. Finnegan served as the planning director for the San Gabriel Valley area where he worked with 30 cities and other agencies to develop and implement improvements to the area's streets and freeways and transit systems; he managed Los Angeles County's \$12 billion, seven-year Transportation Improvement Program and served as the MTA's liaison to the California Transportation Commission; and, he managed the nation's largest public motorist aid system and lead statewide motorist aid planning and policy as the chair of California SAFE Committee and as a member of the Governor's Emergency Roadside Assistance Advisory Committee.

**Tom Norton**

Executive Director, Colorado Department of Transportation

Mr. Norton is the Executive Director of the Colorado Department of Transportation. He was appointed by Governor Bill Owens to serve as executive director for the Colorado Department of Transportation (CDOT) in January of 1999. Mr. Norton is responsible for the overall direction and management of CDOT with a staff of more than 3000 employees and an annual budget of nearly \$1 billion. Prior to his position at CDOT, Mr. Norton spent 12 years in the Colorado Legislature, including six consecutive years as Senate president. During this time, he sponsored landmark legislation that revised worker compensation laws, was a driving force on numerous environmental and air quality issues and worked tirelessly to obtain additional revenue for transportation, doubling CDOT's budget over the past six years. A graduate of Colorado State University with Bachelor's and Master's degrees in civil engineering, Mr. Norton has worked for more than 30 years in the engineering private sector. Mr. Norton is the recipient of numerous awards and citations from organizations such as the American Society of Civil Engineers, Colorado State University, National Federation of Independent Business and the Colorado Association of Commerce and Industry. He is a member of the Regional Air Quality Council, a member of the Commission on Information Management and chairman of the American Association of State Highway and Transportation Officials (AASHTO) subcommittee on maintenance.

**Warren Hoemann**

Vice President, California Trucking Association

Mr. Hoemann is Vice President of the California Trucking Association, located in West Sacramento. He oversees several departments, including Safety, Seminars & Training, Public Affairs and Highway Policy. A twenty-six year veteran of the trucking industry, Mr. Hoemann came to CTA in 1997 from Yellow Corporation, the parent of Yellow Freight System, one of the nation's largest motor carriers, with revenues of over \$3 billion. In his eleven years at Yellow, Mr. Hoemann served as Vice President-Government Relations, handling the company's political and legislative affairs in all 50 states and Congress.

**James Codell**

Secretary, James C. Codell, III, Kentucky Transportation Cabinet Secretary, President of the American Association of State Highway and Transportation Officials (AASHTO)