

TESTIMONY OF LANCE R. GRENZEBACK

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on

FUTURE FEDERAL ROLE FOR SURFACE TRANSPORTATION

before

**COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE**

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Introduction

Madam Chairwoman, distinguished committee members, my name is Lance Grenzeback. I am a senior vice president with Cambridge Systematics. We provide transportation policy, planning, and management consulting services to federal, state, and local transportation agencies and to private-sector transportation and investment companies.

I am pleased to appear before you to discuss future federal roles in ensuring a well-performing surface transportation system. I will focus my remarks on freight transportation and the nation's highway system. I will argue that key federal roles in the future should be to—

- Maintain the capacity and reliability of our highway freight system;
- Reduce major highway bottlenecks to freight movement;
- Authorize new institutional arrangements to improve and operate highway networks, especially at the multistate and corridor levels; and
- Balance economic risk as the freight transportation system adjusts to changes in demand, fuels and fuels costs, carbon taxes, and greenhouse gas regulation.

Maintain the capacity and reliability of our highway freight system.

A primary federal role for future surface transportation should be to maintain the capacity and reliability of our highway freight system. The U.S. economy is forecast to grow at a compound annual rate of between 2.4 and 2.8 percent over the next 30 years. At this rate, the demand for freight transportation will nearly double. This rate of growth is not extraordinary. It is slightly

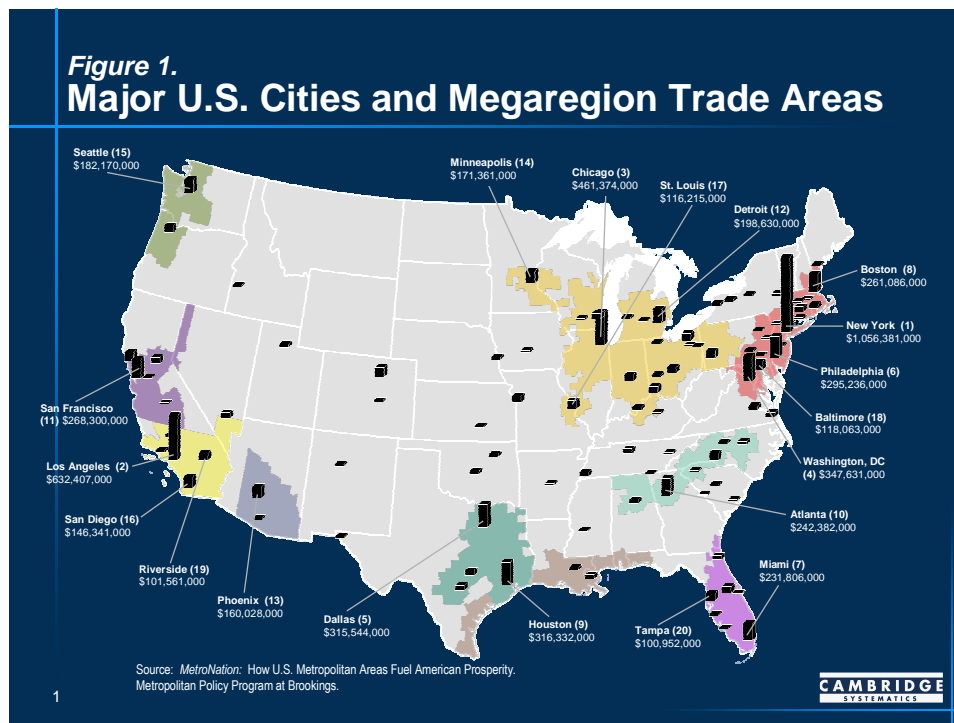
lower than the rate of growth over the last decade, which averaged three percent, and about the same rate of growth as experienced over the last 30 years.¹

The four major drivers of future freight demand are changes in consumption, production, trade, and supply chain practices:

- **Consumption** (*the purchase of goods by individuals, households, and government*). The U.S. population reached 300 million people in 2006 and will reach 380 million by 2035. A larger population will consume more food, clothing, and housing. This means more freight to be moved and more trucks on the highways.
- **Production** (*investment and the creation of goods by businesses*). Although the number of people employed in manufacturing will likely continue to drop, industrial production will rise because of automation, generating more manufactured products. This means more freight transportation, and because higher-value, time-sensitive, manufactured products tend to be shipped in trucks, more industrial production means more trucks on the highways.
- **Trade** (*the exchange of goods*). Trade is expected to grow faster than the economy as a whole. In 2005, the combined value of U.S. imports and exports was equivalent to 27 percent of the U.S. real GDP (i.e., GDP adjusted for inflation). The value of U.S. imports and exports is forecast to be equivalent to 60 percent of GDP by 2030. This will intensify the flow of imports and exports moving through U.S. international trade gateways. Whether imports are delivered directly from ports to the customer or are moved inland by rail and then delivered to the customer, the last miles of an import trip (and the corresponding first miles of an export trip) are almost always by truck. More trade means greater truck volumes on the highways, especially around our major international gateways.
- **Supply Chain Management** (*the movement and storage of raw materials, inventory, and finished goods from point-of-production to point-of-consumption*). Thirty years ago, most suppliers delivered materials to a manufacturer, who pushed products to a distributor or retailer, and then to the customer. Each business maintained a large and expensive inventory of critical materials and products to protect against stockouts. Today, most businesses are moving toward pull or on-demand supply chains, cutting costs by reducing inventory and replenishing whatever the customer consumes as soon as it is sold. This results in smaller shipment sizes (since units are consumed one by one), more individual products per shipment (to make lot sizes economical to ship), more time-sensitive shipments, and more shipments in total. This trend favors the use of trucking and air freight over rail and waterborne transport, which means more trucks on the highways.

Most of the demand for freight transportation will center on our major cities and their surrounding megaregion trade areas, shown in Figure 1. These megaregions are expected to house most of the nation's population and be the engines of economic growth over the next decades.

¹ Statistics and maps are drawn from the *Freight Transportation Bottom Line Reports*, prepared by Cambridge Systematics, Inc. for the American Association of State Highway and Transportation Officials (AASHTO), forthcoming, 2008.

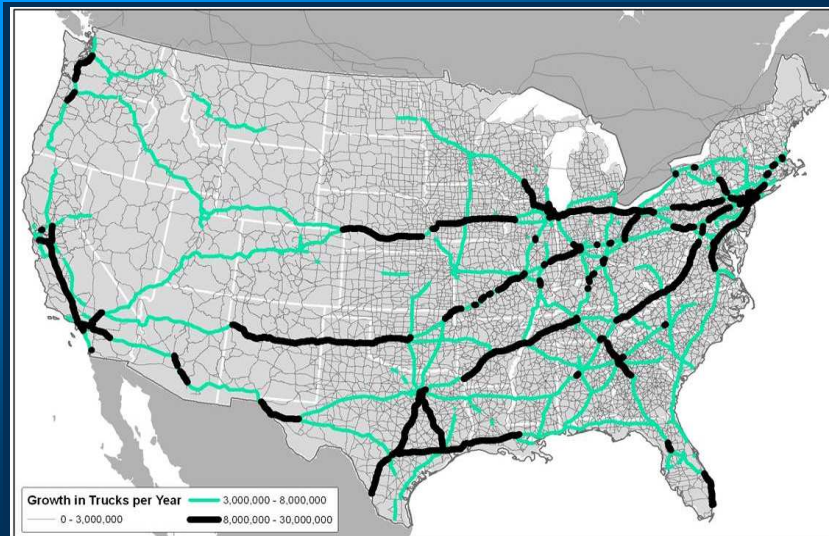


Trucks will serve the majority of the freight transportation demand in the cities and megaregions in 2035. Trucks and the highway freight system are forecast to carry upwards of 80 percent of all domestic freight by tonnage (up from 77 percent in 2005) and 95 percent of all freight by value (up from 92 percent), accounting for 65 percent of all ton-miles of freight moved (up from 61 percent).

Rail freight transportation will be vitally important in meeting future transportation demand, especially for longer-distance freight transportation, but even if the freight railroads expand their market share substantially, overall population and economic growth will result in many more truck trips on the nation's highways.² Figure 2 shows the anticipated growth in freight truck trips over the next 30 years. The black lines indicate highways that will see between 8 million and 30 million new truck trips per year; the green lines, highways that will see 3 million and 8 million new truck trips.

² For a discussion of the outlook for rail freight capacity, see the *National Rail Freight Infrastructure Capacity and Investment Study*, prepared by Cambridge Systematics, Inc. for the Association of American Railroads, Washington, DC, September 2007.

Figure 2.
Growth in Trucks per Year
2005 to 2035



Source: Cambridge Systematics, Inc. AASHTO Freight Transportation Bottom Line Reports, based on Global Insight 2004 TRANSEARCH data and economic forecasts.

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The federal government should continue to play a major role in maintaining and reconstructing the highway freight system to accommodate population and economic growth. In recent studies for the U.S. Chamber of Commerce and the Transportation Research Board, we calculated that current spending by all levels of government—federal, state, and local—is about \$60 billion less than needed annually to maintain the condition and performance of the nation’s highway and transit systems and \$120 billion less than needed annually to improve the systems to levels that best serve the nation’s economy.³

In the short term, maintaining the highway freight system will likely mean increasing and indexing federal and state motor fuel taxes to keep up with inflation, tolling where traffic volumes and congestion will support market pricing, and leveraging state and local sales taxes and other revenue sources. In the longer term, maintaining the capacity and reliability of our highway freight system will likely mean shifting from gallonage-based fuel taxes to mileage-based or vehicle-miles-of-travel (VMT) user fees.

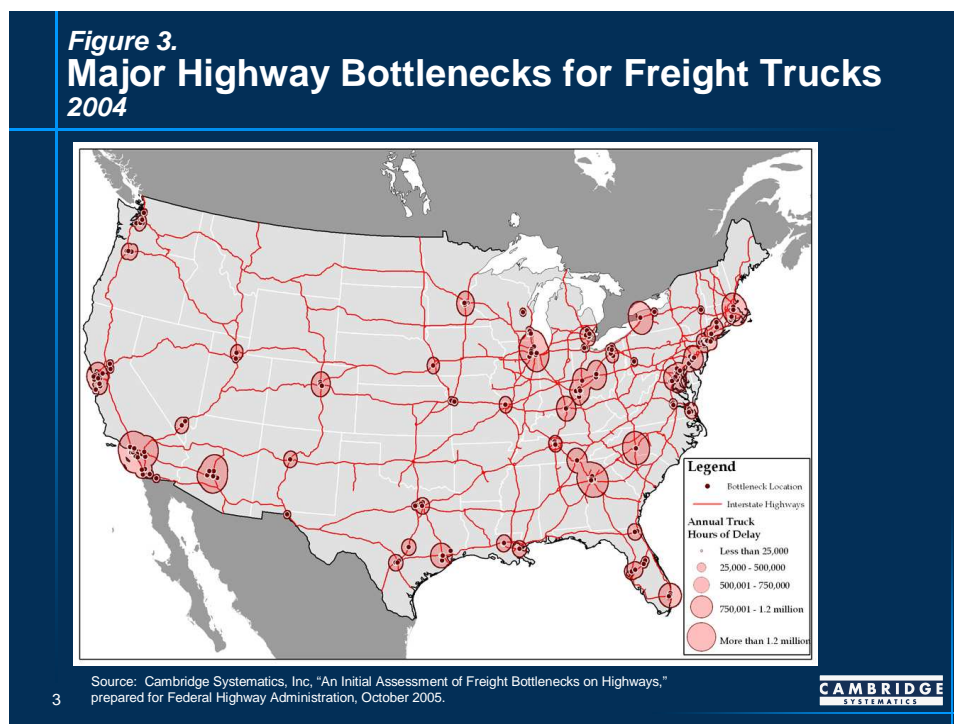
The cost of failing to maintain the highway freight system and keep pace with growth in freight demand will be economic stress. When trucks are delayed for hours on the road, the costs are passed back to shippers and receivers, and eventually to their customers. And when

³ “Maintain” means that pavement and bridge conditions and traffic levels of service remain the same, on average. Below this level, conditions will deteriorate, and congestion will grow. “Improve” means funding projects that have a positive benefit/cost ratio and improve U.S. economic productivity. For additional detail see *Future Highway and Public Transportation Finance Study*, prepared by Cambridge Systematics, Inc. for the National Chamber Foundation of the U.S. Chamber of Commerce, Washington, DC, 2005; and NCHRP Report 20-24(49), “Future Financing Options to Meet Highway and Transit Needs,” prepared by Cambridge Systematics, Inc. for the Transportation Research Board, Washington, DC, December 2006.

transportation costs are passed back to businesses and households, they increase the cost of doing business and the cost of living, weakening the productivity and competitiveness of business and industry. It is vital that the federal government act in the next authorization of the surface transportation legislation to maintain the capacity and reliability of our highway freight system.

Reduce major highway bottlenecks to freight movement.

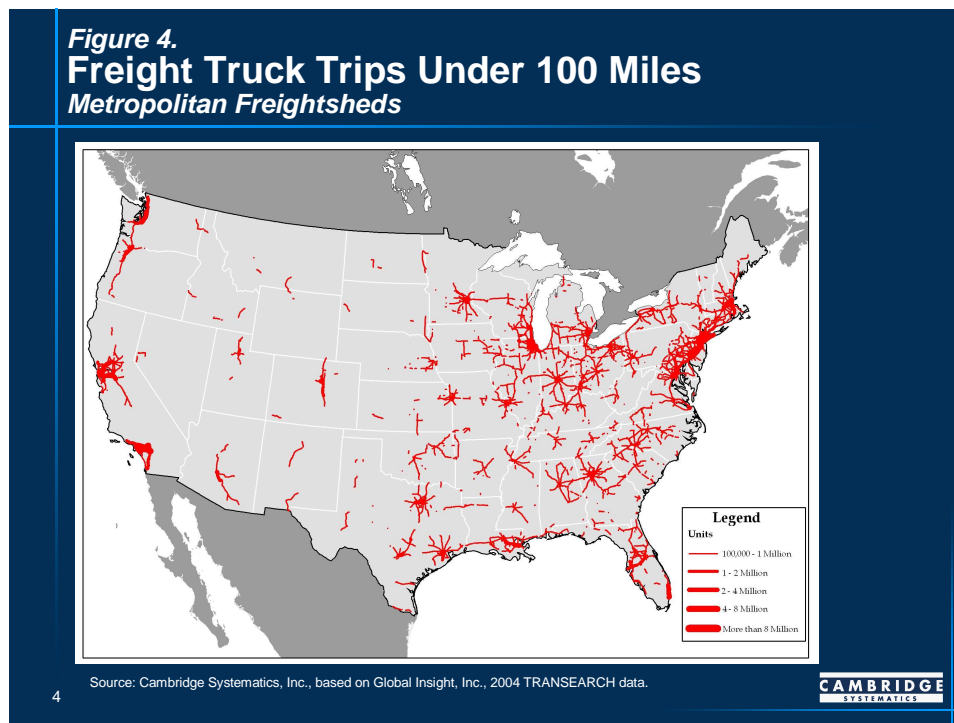
The greatest challenge to maintaining our highway freight system and accommodating future growth will be reducing delays at highway bottlenecks. As more and more urban areas have become saturated with traffic, strings of bottlenecks have grown along highway freight routes, creating corridors of congestion instead of corridors of commerce. In a study for the Federal Highway Administration, we identified highway bottlenecks for freight trucks. The major bottlenecks are mapped in Figure 3. We estimated that these highway bottlenecks caused 243 million hours of delay annually to freight trucks at a direct cost to truckers of \$8 billion per year in 2004.⁴



The worst bottlenecks were at urban Interstate highway interchanges. Bottlenecks at urban Interstate highway interchanges accounted for half of all delay and costs—124 million hours of delay at a cost to truckers of \$4 billion. These direct costs are magnified as they work their way through the economy. When trucks are delayed at highway bottlenecks, shipping costs go up and reliability drops across supply chains and distribution networks. Businesses react by holding more inventory and passing the costs on to customers.

⁴"An Initial Assessment of Freight Bottlenecks on Highways," prepared for the Federal Highway Administration, Office of Transportation Policy Studies by Cambridge Systematics, Inc. in association with Battelle Memorial Institute, October 2005.

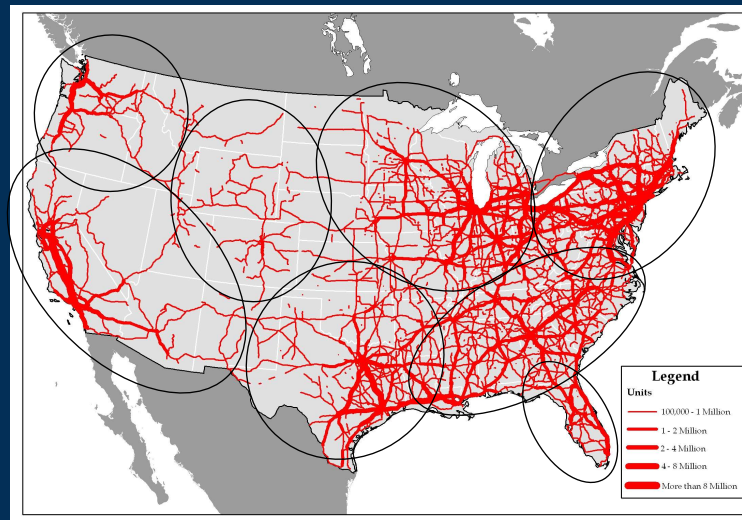
The cost of delay at these bottlenecks is high because they are at the centers of our metropolitan freightsheds, at the hubs of our megaregion trade areas, and at the intersections of our national trade corridors. One-third of all freight truck trips are under 100 miles in length, as shown in Figure 4.⁵ These trips distribute food to supermarkets, bring fuel to gas stations, and move freight from ports, airports, and rail terminals to local businesses. Highway bottlenecks catch and delay these truck trips.



Another third of freight truck trips are between 100 and 500 miles. These trips, mapped in Figure 5, support the nation's warehousing and distribution centers—New York/Northern New Jersey, Atlanta, Chicago, Denver, Dallas-Ft. Worth, Seattle/Portland, and Los Angeles—and typically cross two or three states. Highway bottlenecks catch and delay these truck trips.

⁵ U.S. Census Bureau, Vehicle Inventory and Use Survey.

Figure 5.
Freight Truck Trips Between 100 and 500 Miles
Multi-State/Trade-Area Freightsheds



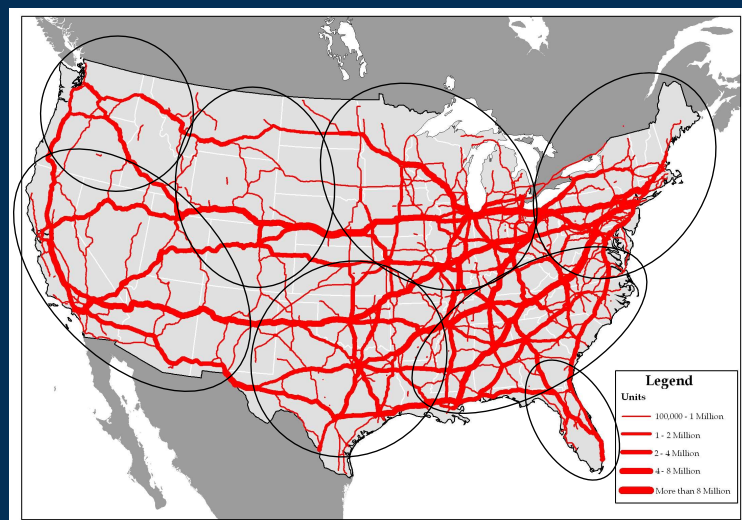
Source: Cambridge Systematics, Inc., based on Global Insight, Inc., 2004 TRANSEARCH data.

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The final third of freight truck trips are over 500 miles. These trips, shown in Figure 6, move along our national trade corridors, linking together our major cities and megaregions, and providing access to international trade gateways. Depending on their routing and timing, transcontinental truck trips may be caught up in and delayed at a dozen major bottlenecks.

Figure 6.
Freight Truck Trips Over 500 Miles
National Trade Corridors



Source: Cambridge Systematics, Inc., based on Global Insight, Inc., 2004 TRANSEARCH data.

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We know where the bottlenecks are, and we know how to redesign them and reengineer their operation, but we are not moving to fix them. We are not addressing these projects because—while the benefits are local, regional, and national—their costs are often so high they cannot be solved by a single state or city. The solutions are site specific and complex, especially in densely developed urban areas. Few states or cities have the money to tackle them, and even fewer have a way to share the costs and risks with other states. Yet the future cost to the nation's economy of not addressing these bottlenecks is growing because delay at these bottlenecks is growing much faster than the overall increase in traffic.

Dealing with metropolitan traffic congestion has traditionally been the responsibility of state and local government, not the federal government. But we need a new approach—a national program that focuses on major highway bottlenecks. A relatively small number of bottlenecks—probably less than 100—accounts for large share of the delay, but these bottlenecks are widely scattered across the nation, and they sit squarely on the cross-roads of our interstate and global trade lanes.

We built the Interstate system to gain the benefits of interstate trade. We have been so successful that we risk choking on traffic congestion and losing the benefits of both interstate and global trade. We can now identify the critical bottlenecks to this trade, measure the costs to shippers and carriers, and target solutions. We need a federal initiative and new federal, state, and private sector revenues to implement solutions at these nationally and regionally significant freight bottlenecks.

Authorize new institutional arrangements to improve and operate highway networks, especially at the multistate and corridor levels.

To implement the Interstate Highway program, the federal government created new organizations at the national and state levels. Congress created the Federal Highway Administration to manage the program at a national level and funded the creation of state highway departments to manage the program within states. Congress subsequently created metropolitan planning organizations (MPOs) to coordinate highway and transit investment at the metropolitan level.

Congress should strengthen the mandate of all three organizations to address freight transportation issues. But we need another level of organization between the federal and state governments to coordinate and facilitate improvements and operations to highway systems at the megaregion or trade-bloc level. Today, most major industries and the motor carriers and railroads that serve them are organized at a multistate, megaregion level, but state departments of transportation and their economic development agency counterparts are not. States lack a mechanism to plan and invest in projects—such the reduction of major highway bottlenecks—from which they would benefit but which are located outside their boundaries. Institutional mechanisms are needed to bridge the gap between the federal government's focus on national and international trade and state governments' focus on local transportation and economic development. Filling this gap would facilitate private sector investment where it is most needed—in major projects that have a long economic life and substantial economic development potential but which are not implemented today because their costs are too high for any one or even several states to bear.

The I-95 Corridor Coalition, which serves the state departments of transportation and transportation agencies from Maine to Florida, has been exploring the issues and opportunities for multistate action in the Northeast, Piedmont, and Southeast/Florida megaregions. One idea emerging from the Coalition's workshops would involve Congressional authorization and initial capitalization of a national transportation infrastructure bank, which could in turn establish multistate infrastructure banks where groups of states define programs and projects that warrant coordinated action. The concept is described in more detail in Figure 7.

Whether through a multistate bank or other institutional arrangement, Congress should consider taking a lead role in defining and supporting new institutional approaches that allow states to coordinate and facilitate public sector planning, investment, and operations at the same scale as private sector business.

Figure 7. National and Multistate Transportation Infrastructure Banks

A multistate transportation infrastructure bank serving the Coalition region would act as a regional transportation investment bank (RIB), expanding upon congressionally approved state infrastructure banks (SIBs). State infrastructure bank legislation allows states to capitalize a bank using a portion of their federal grant funds, add state funds, and match the public funds with private sector monies to help finance major transportation infrastructure improvement projects. Financing can be done through direct grants, but more often is done through loans that are paid back over time, with the proceeds used to finance additional improvements.

A multistate transportation infrastructure bank addresses the need to:

- Provide a forum to identify regional needs, define improvements, describe benefits, set priorities for investment, organize multi-year programs, and evaluate results;
- Provide a mechanism for financing mega-projects that serve a multistate area; and
- Provide a mechanism for recouping investments and sharing risks and benefits.

A multistate transportation infrastructure bank might be created and work as follows:

- By an act of Congress, establish a national transportation infrastructure bank with the powers to create multistate transportation infrastructure banks for specific multi-state regions. The banks could be established as non-federal, non-profit enterprises or as multi-state investment banks and authorized to receive funding directly from national transportation infrastructure bank or from other federal transportation financing entities.
- Capitalize the national and multistate banks by direct Congressional appropriation, by authorizing the banks to issue tax-credit bonds, or by a combination of measures. The direct Congressional appropriation could be a grant or subsidy authority to the banks to fund a long-term, low-interest capitalizing loan.
- Charge the banks to identify regional transportation investment needs, set priorities, support individual state applications for funding, and commit to coordinated sharing of project risks and benefits.
- Provide economic development incentives for state participation by making businesses in states that participate in regional transportation advisory committees and projects eligible for federal tax benefits if the businesses invest in qualified transportation infrastructure projects.
- Adopt procedures for soliciting applications from states or groups of states and awarding funds for network improvements. Awards should consider transportation needs and benefits, consistency with a regional master plans, state and private sector contributions, and provisions to capture future benefits through tolls or other value-capture mechanisms.
- Allow the states and transportation providers, working through the regional advisory committees, to negotiate their contributions on a project-by-project basis, considering public sector benefits, private sector benefits, and risks.
- Encourage the use of regional network tolls or other value-capture mechanisms to recoup a portion of the investment in transportation capacity from future growth in traffic. Tolls should be based on reasonable expectations of the future network growth that would be catalyzed by the investments and apportioned equitably among the users, based on network access, use, and public and private benefits.
- Permit a portion of toll revenues to be used to capitalize a revolving fund supporting additional improvements.

Balance economic risk as the freight transportation system adjusts to changes in demand, fuels and fuel costs, carbon taxes, and greenhouse gas regulation.

In the mid-1800s, a consensus emerged that investment in rail was critical to economic development. In the mid-1900s, a consensus emerged that rail had peaked and investment in highways was critical to future economic development. Today, we may be nearing the peak of what we can accomplish with today's highway freight system. But we have no clear vision of the new transportation investments that will be critical to the next generation of economic development.

Nevertheless, increasing demand, underinvestment in infrastructure, rising fuel costs, carbon taxes, and greenhouse gas regulations will restructure supply chains. These factors will change the relative cost of freight transportation by air, truck, rail, and water. Businesses will adjust their supply chains to take competitive advantage of the changes, relocating production and distribution facilities, and rerouting freight flows. We can anticipate shifts in manufacturing from out-sourcing to in-sourcing, especially for heavy and lower value commodities and products moving long distances. And we can anticipate diversion of freight from air to truck to rail to waterborne transport, depending on trip length, reliability, and safety.

These shifts will affect industry competitiveness, jobs, and economic development across the United States. The federal government should establish a strong role for itself in the next surface transportation authorization to coordinate national policies on transportation, energy, greenhouse gas regulation, and economic development with the objective of balancing the economic risk between businesses and carriers, the public and private sectors, and regions and communities. Congress should not let compounding uncertainty lead to continuing underinvestment in existing and new freight transportation systems.

I thank you for your time and attention.