

# FUTURE FEDERAL ROLE FOR SURFACE TRANSPORTATION

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## HEARING

BEFORE THE

### COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

### UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

SECOND SESSION

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JUNE 25, 2008

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COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ONE HUNDRED TENTH CONGRESS  
SECOND SESSION

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## **FUTURE FEDERAL ROLE FOR SURFACE TRANSPORTATION**

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**WEDNESDAY, JUNE 25, 2008**

U.S. SENATE,  
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,  
*Washington, DC.*

The full committee met, pursuant to notice, at 10 a.m. in room 406, Dirksen Senate Office Building, Hon. Barbara Boxer (chairman of the full committee) presiding.

Present: Senators Boxer, Inhofe, Barrasso, Baucus, Cardin, Isakson, Lautenberg, Sanders, and Whitehouse.

### **OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA**

Senator BOXER. The meeting will come to order.

We are very happy to call this meeting to order because the topic that we are talking about today is essential for the economic growth of our great Country. The hearing is entitled The Future Federal Role for Surface Transportation. The current SAFETEA-LU that is the highway transit and highway safety bill will expire on September 30th, 2009. As we prepare for the next authorization, it is important for us to examine the role the Federal Government has played in the development of our current transportation system, and to look ahead to the role the Federal Government should play in the future.

The upcoming transportation bill should address modern concerns in a post-interState era. Highways and bridges built in the 1950's and 1960's are reaching the end of their expected service life and additional funding is needed for major repair or replacement. This means we need to make significant investments in the short term just to maintain our infrastructure at safe levels, followed by, in my view, even larger investments over the next 20 to 30 years to completely replace aging infrastructure.

Not only is our infrastructure aging, but our population is growing and placing greater demands on existing transportation systems. According to the Census Bureau, by the middle of the century, the Nation will have grown to 420 million people from the 300 million mark hit in 2007. This equates to 11 new Los Angeles metropolitan areas and an increase of 50 percent in 50 years.

The DOT has estimated the cost to our economy from congestion alone is \$200 billion per year. With freight movement expected to nearly double over the next 30 years, congestion will become an even larger problem. But it is not too late. Transportation pro-

grams and policies have evolved over time as needs and policy objectives have changed.

The authorization of the next bill gives us the opportunity to take a fresh look at the current program and make the changes necessary to ensure the Nation's transit systems will meet needs in the coming years. Given tight financial constraints, determining what is truly in the Federal interest is even more important as we balance competing interests.

However, the Federal role is not just to provide funding. There is a Federal role in increasing the safety of our Nation's highways. There is also a Federal role in ensuring the efficient movement of people and goods which affects our economy and quality of life every day.

Protection of the environment to me is another Federal role. In this next bill, we need to more closely examine the linkage between transportation and the environment, including air quality, air quality, greenhouse gases and land use. This is the Environment and Public Works Committee and we need to successfully address the environment and public works issues together.

These are but a few of the issues that may be raised today. This hearing is intended to start the discussion on the key policy issues that will frame the future Federal role in surface transportation beyond SAFETEA-LU.

I want to say a thank you to my ranking member, Senator Inhofe, who as you know was chair of this Committee for quite a number of years. We don't see eye to eye on certain things and we are very open about it, but when it comes to the infrastructure of our Nation, so far we have worked very well together, and I am very hopeful we can continue. That also means Senator Baucus, Senator Isakson, and Senator Lautenberg, who plays such a key role in all these matters. I think the bipartisanship that we can bring to this issue will serve our Nation well.

With that, I will call on Senator Inhofe.

[The prepared statement of Senator Boxer follows:]

STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR  
FROM THE STATE OF CALIFORNIA

The current highway, transit and highway safety authorization legislation, SAFETEA-LU, will expire on September 30, 2009.

As we prepare for the next authorization, it is important for us to examine the role the Federal Government has played in the development of our current transportation system, and to look forward to the role the Federal Government should play in the future.

The upcoming transportation bill should address modern concerns in a post-Interstate era. Highways and bridges built in the 1950s and 60s are reaching the end of their expected service life, and additional funding is needed for major repair or replacement.

This means we need to make significant investments in the short term just to maintain our infrastructure at safe functioning levels, followed by even larger investments over the next 20 to 30 years to completely replace aging infrastructure.

Not only is our infrastructure aging, but our population is growing and placing greater demands on existing transportation systems. According to the Census Bureau, by the middle of the Century, the Nation will have grown to 420 million people from the 300 million mark hit in 2007. This equates to 11 new Los Angeles metropolitan areas and an increase of 50 percent in 50 years.

The Department of Transportation has estimated that the cost to our economy from traffic congestion alone is as high as \$200 billion per year. With freight movement expected to nearly double over the next 30 years, congestion will become an even larger problem.

But, it's not too late. Transportation programs and policies have evolved over time as needs and policy objectives have changed.

The authorization of the next bill gives us the opportunity to take a fresh look at the current program and make the changes necessary to ensure our nation's transportation system will meet needs in the coming years.

Given tight financial constraints, determining what truly is in the Federal interest is even more important as we balance competing interests.

However, the Federal role is not just to provide funding. There is a Federal role in increasing the safety of our nation's highways. There is also a Federal role in ensuring the efficient movement of people and goods, which affect our economy and quality of life every day.

Protection of the environment is another area in which there is a Federal role. In this next bill we need to more closely examine the linkage between transportation and the environment: including air quality, greenhouse gases, and land use.

This is the Environment and Public Works Committee; we need to successfully address the environment and public works issues together. These are but a few of the issues that may be raised today.

This hearing is intended to start the discussion on the key policy issues that will frame the future Federal role in surface transportation beyond SAFETEA-LU. I appreciate all the witnesses being here today, and I look forward to your testimony.

**OPENING STATEMENT OF HON. JAMES M. INHOFE,  
U.S. SENATOR FROM THE STATE OF OKLAHOMA**

Senator INHOFE. Thank you, Madam Chairman. I agree with those comments. We have a serious problem here and we are going to handle it together. As we begin to focus more on the transportation issues with the expiration of SAFETEA-LU, I think it will be increasingly important to evaluate the structure and performance of the highway program.

One indication of the lack of focus of the program is the enormous number of programs that DOT frequently cites, with 109 programs varied within a large highway and transit program. Of course, simply reducing the number of the programs is not going to resolve the problem. We have to re-think the fundamental role of the Federal Government highway program. The current Federal program now tries to be all things to all people.

Now, 50 years ago-plus when President Eisenhower first conceived the InterState system, he envisioned the system to connect the Nation's, and hence the national defense. The enormous economic benefits provided by the system would not be fully understood for some time. Since then, many new responsibilities were added, largely because of the success and popularity of the program. In other words, when we were able to get funding, everyone else wants in on the deal and I think we have too many things that are in on the deal.

Many of the activities that were added over the years are very meritorious, and my primary question is whether the highway program is the appropriate vehicle, especially given the limited resources that we are facing now that we were not facing back during the conception of the program. The new responsibilities were added while maintaining essentially the same revenue resources. The result is that there are not sufficient resources to properly address the core responsibilities of the program, let alone some of these things that have been added on. As we begin the reauthorization discussions, I would hope that we would be able to work together to redefine the core mission.

Now, finally I want to point out that yesterday Senator Boxer and I, I guess the day before yesterday, along with 65 other Sen-

ators, sent a letter to the Finance Committee and to the leadership urging a quick resolution to the looming highway trust fund crisis. Due to the high gas prices and the weaker economy, the gas receipts have fallen far below the expectations of SAFETEA. Now, we have to address this.

I know there are a lot of things that we are all uncomfortable talking about, even to the extent of adding on the about \$8 billion shortfall from the expectations of this program. Initially, maybe in the form of something on the extension of the FHA or someplace, I feel comfortable as a conservative going back to 1998 when I complained bitterly when President Clinton at that time took \$8 billion out of the trust fund and put it into the general fund. At that time, I said we were going to regret that we did it. Well, I now regret that we did it. I think everyone else does too.

I think that we could actually get that replaced, and it is my understanding without CBO scoring on this thing. I think we have to do it. We are all concerned about our own States, but also about the overall program. I know that in my State of Oklahoma there are a lot of jobs at risk, along with the fact that we desperately need the infrastructure that we had anticipated with the reauthorization of 2005.

So let's work together and try to make it happen.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR  
FROM THE STATE OKLAHOMA

Thank you Chairman Boxer. I appreciate the opportunity to examine the role of the Federal Government in our nation's transportation system. As this Committee begins to focus more on transportation issues with the expiration of SAFETEA approaching, I believe it will be increasingly more important to evaluate the structure and the performance of the highway program.

One indication of the lack of focus of the current program is the enormous number of programs—DOT frequently cites 109 separate programs buried within the larger highway and transit programs. Of course simply reducing the number of programs does not provide focus. We must rethink the fundamental role of the Federal Government in the highway program. The current Federal program now tries to be all things to all people.

When President Eisenhower first conceived the Interstate System over 50 years ago, he envisioned a system to connect the Nation and enhance national defense. The enormous economic benefits provided by the system would not be fully understood for some time. Since then many new responsibilities were added largely because of the success and popularity of the program. It now funds everything from building museums to a program designed to get our children to exercise more.

Many of the activities added over the years are very meritorious. My primary question is whether the highway program is the appropriate vehicle—especially given the limited resources.

The new responsibilities were added while maintaining the essentially the same revenue sources. The result is that there are not sufficient resources to properly address the core responsibilities of the program, let alone the extra programs we have added.

As we begin SAFETEA reauthorization discussions, my hope is that we will be able to work together to re-define the core mission of the Federal highway program. We need to determine the fundamental missions of the Federal program and ensure that those needs are being met and those aspects of the system are performing well. We must be bold in refocusing our limited resources to our nation's greatest infrastructure needs.

And finally, I want to point out that yesterday Senator Boxer and I along with 65 other Senators sent a letter to the Finance Committee and leadership, urging a quick resolution to the looming Highway Trust Fund crisis. Due to high gas prices and a weaker economy gas tax receipts have been far lower than expected when we

wrote SAFETEA. As a result, the Highway Trust Fund is going to run out of money next year. We need to solve this problem as soon as possible.

Senator BOXER. Senator, I would ask unanimous consent to place in the record this letter that you and I signed, along with many of our colleagues from both sides of the aisle, so we have that in the record.

Now, it is a pleasure to call on Senator Lautenberg.

**OPENING STATEMENT OF HON. FRANK R. LAUTENBERG,  
U.S. SENATOR FROM THE STATE OF NEW JERSEY**

Senator LAUTENBERG. Thank you, Madam Chairman.

For almost daily in big cities and small American towns, a gallon of gas hits a new record high in price. These high prices are a strain on family budgets and force Americans to make choices that they should never have to make between filling their stomachs or filling their gas tank, or between driving to work or saving some gas for a ride with the kids on the weekend.

But these high prices also spotlight the lack of planning for our current transportation demands. If we want to permit life to have a semblance of days past, when families could routinely go places where and when they chose, we must change the way we travel. The Federal Government has to lead the way.

First, America needs more and better passenger rail service. When good rail service is available, people take the trains. As an indication of the need for change, May 2008 was the highest month for travel on Amtrak in history. Ridership was more than two million passengers, which was up more than 12 percent from May 2007. Along the northeast corridor, which is critical to New Jersey and other populous States, ridership on Amtrak regional train was also up more than 12 percent.

So I am glad that after passage in both the Senate and the House, the President will soon have a chance to make a contribution to grow passenger rail in America by signing my Amtrak bill. Getting cars off the road and getting people onto trains is more convenient, energy efficient, and economical, especially with such high gas prices.

Second, we need to support transit options for our commuters, from subways and buses to commuter trains. Just like with Amtrak, more people are riding America's public transit options than ever before. In the first 3 months of this year, ridership on the Nation's trains, subways, buses and other transit options was up more than 3 percent. Just think, in 3 months it was up 3 percent compared with the year before. That is a rapid shift in choices.

Third, there is no question that we need a lot of repair for our highway infrastructure. When our bridges are collapsing, as we saw last year in Minnesota, there is no need to debate whether or not our bridges and roads are in disrepair. In fact, nearly 25 percent of our Nation's bridges are deficient. They have to be fixed if we are going to rely on them for the future.

The bottom line is this, to meet demands of tomorrow, we need to make major changes in our surface transportation programs today. We clearly have to fix what we have and make sure that passenger rail and mass transit play major roles in our future.

Travelers can no longer get to where they need to with just their cars. They need better options, and transit and rail are a key part of the solution. Madam Chairman, I am pleased that we are having this hearing because if we don't focus now, we are going to be in even worse difficulty than we are in the future.

Thank you.

Senator BOXER. Senator, thank you. I think the timing is key here because the House has already said that by January 1, they are going to have the principles of the bill already put out in outline form. I think that means we have a lot of work to do because we want to get the principles of this bill done. We are going to be leaving fairly early this year. We have a lot of work to do.

One of the key people who's going to be a big player in this, and that is Senator Isakson. I just want to publicly say what a pleasure it is to work with you, Senator, not only on this, but so many other issues.

**OPENING STATEMENT OF HON. JOHNNY ISAKSON,  
U.S. SENATOR FROM THE STATE OF GEORGIA**

Senator ISAKSON. Thank you, Madam Chairman. I join you and Ranking Member Inhofe in full support of the transfer of the \$8 billion back from the general fund back to the Highway Trust Fund. We all have to recognize that is a temporary fix that does not solve a long-time problem that we have in terms of financing surface transportation in the future.

Finding the appropriate role in ensuring a well-performing service transportation system in light of our limited resources and our revenue-raising mechanism is crucial to ensure we have a robust reauthorization bill. The Federal role, whatever it may be, must be able to adapt to an ever-changing demand on our system.

Finding solutions in my State is critical. The State of Georgia's Transportation Department estimates we are \$7 billion short in funding current commitments that they have made. In Fiscal Year 2007 alone, it was estimated alone that maintenance, safety, and other transportation improvements were \$445 million short.

On that note, I do believe the current revenue mechanism for surface transportation is broken and no longer appropriate for funding our Nation's surface transportation infrastructure. Just raising the tax on an already-broken system will not solve the problem.

Madam Chairman, recently our State legislature convened a joint study committee to study the Federal role in transportation and the State role in transportation. They recommended that USDOT turn back the Federal Highway Transit program moneys to the States and allow them to collect the money and spend those revenues in coordination with their transportation plan. This is just one of the out-of-the-box proposals that we have to consider as we move toward this reauthorization.

I am very grateful for the opportunity to work on this Committee and in particular focus on surface transportation, and I thank you for the time today.

Senator BOXER. Thank you so much.

I was so pleased that Senator Baucus could join us, who is the Chair of the Subcommittee on Highways. We are just thrilled to see you here, Senator.

**OPENING STATEMENT OF HON. MAX BAUCUS,  
U.S. SENATOR FROM THE STATE OF MONTANA**

Senator BAUCUS. Thank you, Madam Chairman. I assume everyone else has spoken.

Senator BOXER. Yes.

Senator BAUCUS. Good. Thank you.

Thanks for calling this hearing. Let me start by saying our national population is expected to increase by about 150 million over the next half-century, and by 2020 freight volumes will have grown 70 percent over the levels around the end of the 20th century. Further, a recent study estimated that we need to invest \$225 billion annually across all levels of government for the next 50 years to stay globally competitive.

To meet these needs, I think we need a robust Federal role in surface transportation, now as much as ever before. Some people look at our current situation and say we need to abandon the Federal role. Even right now, I have a bill that would fix the Highway Trust Fund for a while, but is getting blocked in the Senate.

While we do need to consider all options, I think the most crucial thing is we need a program that is national in scope. As with other national programs such as our defense, space and farm programs, where our shared efforts benefit all Americans, our transportation system is inherently a national program. My State of Montana relies on the Federal program. My constituents frequently drive long distances along Federal-aid roads across a vast rural State, and at nearly 28 cents per gallon for gasoline and 29 cents per gallon for diesel, we have one of the highest fuel taxes in the Country, but our smaller population makes it impossible to generate sufficient tax revenue to cover needs.

Meanwhile, it is very difficult to afford to toll roads because we have one of the Nation's lower per capita income taxes. We are about 48th or 47th in the Country. As a rural State, we are less likely to generate private investment. Simply put, without Federal investment, Montana cannot meet the needs.

It is important to remember that the needs in Montana are not just restricted to Montanans. We have fewer than one million residents, but approximately 10 million people travel to Montana annually to see our natural wonders and scenic areas. Also, like other nearby rural States, Montana serves as a key bridge State for freight movements that rely on seamless roads across State borders.

Finally, Montana enjoys a positive trade balance, which demonstrates that those not lucky enough to live in Montana need my State's agriculture and mineral products. As Chairman of the Subcommittee on Transportation which is charged with taking the lead in writing key parts of this bill, I held a recent hearing on global competitiveness because I believe that for our Country to be competitive, we have to have a much, much more robust national transportation system than we now have. Clearly, we must think

way out of the box and not just go down the usual ways of doing business.

Witnesses discussed other countries' efforts to invest massive amounts of money in infrastructure. One point is clear: They understand the significance of infrastructure. I don't know how many here have been to the Shanghai Port, but anybody here on this Committee who has been to the Shanghai Port will be blown away by what Shanghai is spending on infrastructure, and immediately ask yourself, why in the world are we so far behind in America? Go to Shanghai. Madam Chairman, if you take our Committee to Shanghai, you are going to get a good transportation bill.

Today's hearing is another part of that process where we determine just what we need to do for the future. I have worked on several of these bills and I am looking forward to putting together a strong, far-sighted bill this time.

I again thank you very much for this hearing. We have a lot of work ahead of us, but the main thing is it is exciting.

Senator BOXER. It is exciting.

Senator BAUCUS. We have great possibilities here, great opportunities to do a lot for this Country. We are on the cusp of doing something big.

Senator BOXER. I am so happy that you came by. I know what your duties are these days. My goodness, you have 10 things you are juggling. We are just so happy you came by. Thank you.

Let's see. We will go back and forth. Senator Barrasso, are you ready? Or do you want to wait for Senator Sanders?

Senator BARRASSO. I would be happy to wait for Senator Sanders.

Senator BOXER. OK.

Senator Sanders.

#### **OPENING STATEMENT OF HON. BERNARD SANDERS, U.S. SENATOR FROM THE STATE OF VERMONT**

Senator SANDERS. Thank you.

Maybe it talks about the way we live our lives here in the Senate. I agree with Senator Baucus that this is really exciting. Now, the rest of the world probably would not think transportation infrastructure is exciting, but that is the world we live in, and he is absolutely right. There are enormous opportunities to improve the quality of life of the American people, to create millions of good-paying jobs, to strike a blow against greenhouse gas emissions and global warming, to clean up our environment. We can do all these things within a transportation bill.

I was in Shanghai some years ago. My wife and I were coming back from the airport, and she is always more observant than I am. We were just driving in this bus and I was half asleep when she said, "What was that went by?" It was the magnetic levitation train that went by. I didn't see it, of course, but she saw it zooming by. It does say something that we have a rail system which is crumbling and China has trains that we don't even have in this Country.

It says something. There was an editorial, Madam Chair, in the Brattleboro Reformer, a paper in the southern part of the State of Vermont, comparing rail transportation from southern Vermont to



New York City in 1919 compared to today. You know what? We have fewer trains, slower trains today than in 1919 from Brattleboro, Vermont to New York City.

Meanwhile, we talk about the need to reverse global warming and address pollution, and that is where we are today. It is absolutely insane, and I know Senator Lautenberg is working so hard on Amtrak. But we need a revolution in transportation.

So I think clearly in my State and all over this Country, all you have to do is drive down a street in Burlington, Vermont. There are potholes all over the place. Cities and towns don't have the resources to address that. We have a rail system which is crumbling. We have all kinds of infrastructure needs. Especially in these difficult economic times, we have the opportunity to put a large number of people to work in good-paying jobs by rebuilding our infrastructure.

Also, I think it is fortuitous that on this particular Committee where we deal with issues like global warming, we are also dealing with infrastructure because, Madam Chair, we have the opportunity now to make sure that new transportation modes are addressing the environmental and global warming challenges that we face.

Today, in the United States of America, and I don't know how it is in Montana, but I will tell you in rural Vermont people have no option but to use the automobile. I don't know how it is in Montana. There is virtually no efficient bus systems, so people have to use their cars at great expense. It makes no sense to me at all. We have to do something about rural transportation in general.

So as I think Senator Baucus indicated, if you look at what goes on in Europe, if you look at what goes on in Scandinavia, Asia, we are behind the eight-ball. We have the opportunity in this bill to take some giant steps forward.

Now, obviously, for the great challenges that we face, we don't have enough money. We are going to have to do some hard thinking. I think investing in infrastructure, creating jobs, cleaning up the environment, dealing with global warming—this is exciting stuff. I look forward for us to engage these issues.

Thank you very much, Madam Chair.

Senator BOXER. Senator, thank you so much.

Senator Barrasso.

**OPENING STATEMENT OF HON. JOHN A. BARRASSO,  
U.S. SENATOR FROM THE STATE OF WYOMING**

Senator BARRASSO. Thank you, Madam Chairman. I do thank you for taking the time to hold this hearing today.

I appreciate the panel for taking your time to join us as we take a look at the future Federal role in the highway bill authorization.

For those of you who are not very familiar with my home State of Wyoming, I will describe it in a few words. Wyoming is a rural State with small towns and very long roads. It is not uncommon for people in Wyoming, as in Montana, to commute 100 miles round-trip to work, to school, or just to shop for groceries.

Wyoming still serves the national interest, and we do that as an integral bridge as people State products from the West Coast all the way from various ports to a pinch-point in Utah, where they

then all come onto InterState 80 and then across the Country toward Chicago. I-80 runs across the entire State. It is 401 miles long. Sixty percent of the traffic on I-80 is truck traffic, and it is truck traffic most of which does not originate or terminate in Wyoming.

This constant flow of traffic results in significant damage to the InterState system, but the current highway formulas don't recognize that pressure on I-80. It is a national issue and deserves national attention.

When I was in the State legislature, I served and was Chairman of our Transportation Committee. We realized then in Wyoming that we could not rely solely on Federal funding to maintain our roads. So we dramatically put up State dollars, knowing that Federal highway bill funding was not going to be all things to all people. That was a tough and expensive decision for the people of Wyoming, but I believe that this Committee is going to have additional tough decisions as we move forward, such as: What are the Federal roles?; What is the local role?; Is congestion a Federal role or a local role?; Are there Federal aid programs that are duplicative and can be consolidated?; Do we put more money into urban areas or do we increase funding for other programs?; How do we pay for the new highway bill?; Who is paying for it?; Are motorists paying taxes at the pump that fund ferries and rail systems, or are the users of the rails and other mass transit modes paying for their infrastructure?

In Wyoming, we are always proud to serve our Country, whether it is in the military or simply getting goods across the Country. However, we must also not forget the rural States. Montana and Wyoming work closely together as rural States. Both of those States serve the national interest, although we are, as I say, few people, small towns, long roads.

So I am looking forward to participating in this. Madam Chairman, thank you again for holding this hearing. I look forward to hearing from the witnesses today.

Thank you, Madam Chairman.

Senator BOXER. Thank you so much, Senator.

Now, we are going to start with our experts. I am going to ask you to hold to 5 minutes. Just given how much interest there is, we want to get to the questions.

So Dr. Seely, Chair of the Social Sciences and Professor of History, Michigan Technological University. Welcome, sir.

**STATEMENT OF BRUCE E. SEELY, CHAIR OF SOCIAL SCIENCES  
AND PROFESSOR OF HISTORY, MICHIGAN TECHNOLOGICAL  
UNIVERSITY**

Mr. SEELY. Thank you, Madam Chairman, and members of the Committee.

I began my interest in highways as a dissertation project with support from the National Science Foundation almost 30 years ago. I am glad to hear that there are others who think transportation infrastructure is of some interest. There are times when even my own children are not sure that this is an exciting topic.

Listening to you, though, I am struck by the fact that this is not the first time these kinds of issues have come up. I could tell you

of examples when other members sitting in other committee rooms in this building talked about very similar issues in the past. What I cannot do is tell you where the future is going, and I don't necessarily have very specific policy recommendations. What I can try to do is explain as a historian how we came to be in some of the situations that we are in.

I have periodized in my testimony three periods, and I want to in each instance suggest some features of the Federal role that emerged. Two hundred years ago, Albert Gallatin, Secretary of the Treasury for Thomas Jefferson, was presenting to the Congress a plan for roads and canals as a national system that was necessary for the Country. The key thing that emerged at that time in Gallatin's idea was that this was a national system that had to be addressed, not something that could be addressed on a smaller, piecemeal role.

Over the course of the 19th century, a second key feature, though, was that the Federal Government was one of a series of actors in this story. Local, State and private, each had their own role. The Federal Government's role tended to be to address those problems of national significance that others lacked the resources, the capacity, or the expertise to deal with.

Real innovation began in terms of the Federal role with the push for highways at the turn of the 20th century, and a number of very important features are connected with that story of building highways. A key emphasis was the need to provide technical expertise and knowledge, and was something that only the Federal Government was deemed to be able to address.

In the course of doing that, especially at the turn of the century, there was a special emphasis on efficiency. The idea was very strongly held that technical experts, especially engineers, were the best people to try to make sure that Federal funds would be spent most efficiently and best in terms of the national need. This was not easily accepted. Senator Borah in 1919 with some horror addressed the question to the Chief of the Bureau of Public Roads, Thomas Macdonald, who would serve from 1919 to 1953 as head of the bureau. That is an amazingly long period of time. But Macdonald testified that roads in this Country would never be completed, and that the Federal role would never be done. Senator Borah, a conservative, was a bit bothered by this, but that role has in fact proven to be true.

The Federal aid system is also a big part of this story, that it has been done cooperatively with the States, but always focused on a national network as the key focus of Federal activities. The Federal role changed rather substantially, as in so many aspects of American life, during the depression. It was only in 1938, for example, that cities were eligible for Federal aid highway funding. That has certainly opened up a major change in the process.

But the Interstate system, funded in 1956, but conceived in the 1930's, planned in the 1940's, funded in 1956, and then built over the next 30 years, fundamentally alters many aspects of American life. Funding and technical standards remain key aspects of the Federal role, but ironically the Interstate program also bore the seeds of its own problems, because the so-called freeway revolt of the 1960's altered in very substantial ways this idea that we could

leave experts to take care of the problem of building American highways.

Public hearings, environmental impact statements, beautification of highways, attention to aesthetics, a whole range of things emerged in the 1960's as new pieces of the Federal role in highways.

In the end, we have lost trust in expertise, I fear, with some less than positive results for the way that funding has been produced for highways in the last few years. The emergence of earmarks, demonstration projects and a whole range of things that have displaced expertise as a central, but not the sole factor in deciding how to spend for highways is one result.

The last point I would make is that the entire process by which transportation policy has been addressed in this Country has tended since 1912 at least, even earlier, to be modal. We have policy on roads, aviation, shipping, canals, buses. We do not have transportation policy. In 1991, the transportation bill that year, ISTEA, emphasized intermodal service as the essential dimension. We have only begun to try to get there, but unfortunately not only do we still think in terms of modes, Congress is structured in terms of modes. So this Committee deals with highways, while others deal with railroads, with aviation. The result is an inability structurally to talk about transportation, as opposed to trying to deal with a mode-by-mode analysis.

Looking forward, I would suggest then issues of intermodal ability, of conception of a national system, and especially one focused on the Federal role in terms of expertise would be key issues that I would suggest we should be thinking about for the next 50 years.

Thank you.

[The prepared statement of Mr. Seely follows:]

**Testimony before the Committee on Environment and Public Works  
United States Senate  
Hearing on Future Federal Role for Surface Transportation  
June 25, 2008**

Bruce E. Seely  
Chair, Department of Social Sciences  
Michigan Technological University  
Houghton, MI 49931-1295

I am deeply honored by the invitation to present a historian's viewpoint concerning the federal role in surface transportation. For more than 25 years, this topic has been one of my primary interests as a historian of technology, and I am pleased to have the opportunity to share with members of the committee some of what I have learned in the course of my research. As a historian, I would like to discuss what I see as patterns in the federal role in transportation over the last two centuries. I hasten to add that historians are not very comfortable projecting current trends into the future, but we do believe that attending to history helps us understand how we have arrived in the situation of the moment.

Let me begin with a basic point: The role of the federal government in the history of surface transportation has not been static or fixed. Rather, the federal position has evolved with the needs and demands of the nation and its people, and such evolution continues today. Yet amidst those changes, several primary elements of the federal presence in transportation have been long-lasting and remain highly significant as shapers of both the policy and the financing of surface transportation as this country moves into the 21<sup>st</sup> century. I propose to quickly examine features that emerged in the 19<sup>th</sup> century, then explore those elements of the federal role that took shape when highway construction began in earnest at the beginning of the 20<sup>th</sup> century, and conclude with a general comment about the federal government and transportation policy.

#### **Nineteenth-Century Patterns**

The beginnings of a federal role in transportation usually can be traced to a report prepared by Albert Gallatin, Thomas Jefferson's secretary of the treasury, and presented to Congress 200 years ago. In his *Report on Roads, Canals, Harbors, and Rivers*, Gallatin argued that a network of roads and a system of canals were needed to knit the country together economically AND politically. Most importantly, Gallatin proposed these public works as a coordinated national system, rather than piecemeal improvements. Gallatin's report stimulated a number of projects, such as the National Road from Cumberland, Maryland, through Wheeling and on across the midwest to Vandalia, Illinois. Inland waterways and canals also grew from this report, as Gallatin basically laid out the logic of a federal role. He adopted the assumption that the federal government must take the lead in transportation because other likely actors lacked the ability, the resources, and the scope of action to accomplish the task. Gallatin argued, "No other single operation, within the power of the Government, can more effectually

tend to strengthen and perpetuate that Union which secures external independence, domestic peace, and internal liberty.”

Gallatin’s approach was often challenged, for funding of public works often WAS piecemeal. The National Road, the Natchez Trace, and a number of harbor and river improvements projects were launched in the aftermath of the Gallatin Report. There was little inclination on the part of Congress to create a national system of roads and canals, yet Gallatin’s logic has usually been cited as the basis for federal involvement. Indeed, his articulation of the national goals of transportation that cut across state boundaries all but demanded federal leadership in this area. Gallatin had identified a key point – that transportation mattered for more than the movement of people and goods. Transportation systems met more than local purposes and advanced the prospects of the entire nation.

Such high-sounding logic, however, often got lost in another pattern of the federal involvement in transportation: the paramount importance of politics. Indeed, the entire question of public improvements became a hugely contentious political football in the 1820s and 1830s, pivoting on the question of whether the federal government possessed constitutional authority to undertake such projects. But while a constitutional issue was at stake, the feud over internal improvements also was a key definitional issue between the two leading political parties of the day. The situation came to a famous head in 1838, when Henry Clay successfully led the effort to have Congress end funding for the National Road. Since then, it is fair to say that politics have never been far removed from discussions and debates about the nation’s surface transportation needs.

A primary reason behind the change in public outlook in the 1830s concerning the federal government’s role in road building was the emergence of other ways of developing transportation. After 1820, for example, canal construction began on a large scale at the behest of several state governments, a situation that seemed to eliminate Gallatin’s argument about the need for a special federal presence. During the depression of the late 1830s, however, the interest payments on canal bonds drove a number of those states into bankruptcy and prompted state constitutional bans on state-sponsored internal improvements projects. Just at that time, however, another transportation mechanism was emerging – the railroads. Significantly, most railroads were private enterprises, which seemed a better organizational answer to many observers of transportation.

But if we look under the surface, it is clear that private rail corporations received significant assistance from governments at every level. Local and state governments offered pivotal assistance in the form of free land and stock purchases. Indeed, many communities did everything possible to lure railroads to their towns. The federal government also played a number of roles in the evolution of the railroads. Land-grants are the most widely known mechanism, one that proved pivotal to the construction of many western rail lines, but as important were the efforts of Army engineers to locate the routes of many early railroads and then to help design and oversee construction, often while on loan to the rail companies. By the 1850s, federal government surveys across the west located the routes used by every later trans-continental railroad. Again, the logic resembled that first laid out by Gallatin – the federal government undertook roles that no

others could, in order to advance the prospects of the country as a whole and complete a national system of railroads. This same logic later prompted the federal government to impose the first large-scale program of regulation on the railroads, beginning with the Interstate Commerce Act of 1887. In other words, even as the free enterprise ideal dominated the nation's economic and political landscape, the federal government retained a presence in the area of transportation as both encourager of projects in the national interest and a limiter of actions that seemed predatory and monopolistic. In every instance, the federal role rested upon the desire to achieve national systems and insure service that met national needs.

### **The Federal Role in the 20<sup>th</sup> Century: The Bureau of Public Roads**

The federal role in surface transportation developed in new directions and became more extensive at the end of the 19<sup>th</sup> century. Beyond the rebirth of programs of waterway improvements and railroad regulation, a primary reason for an expanding federal presence was the revival of public interest in roads and highways. Since the 1840s, most roads had been the responsibility of local governments. Largely as a result, the nation's roads were terrible: dusty nightmares in summer and impassable mud holes in fall and winter. Pressure for improvements emerged in the 1880s from a combination of interests -- the safety bicycle craze, which first demonstrated the possibilities and the freedom of individual transportation; a growing desire among rural Americans for free mail delivery; and the railroad's support for improved farm-to-market roads. Congress acted in response to the growing pressure, creating the Office of Road Information (ORI) in the Department of Agriculture in 1891. The office soon grew into the Bureau of Public Roads (BPR), predecessor agency to today's Federal Highway Administration. A permanent federal presence in surface transportation had been created.

Between 1891 and 1916, members of Congress and the early leaders of the federal highway office established several approaches to federal involvement in surface transportation that have remained central features of the nation's transportation policy. First, a basic underlying assumption of federal involvement in surface transportation was the desire to advance the base of knowledge and level of expertise in the field of road construction. Here was something that no other agency at that time could do. Thus the primary purpose of the Office of Road Information was to gather data on road materials, construction methods, and maintenance systems; conduct tests on what worked; and demonstrate the results in a variety of ways for all users. A publications program began immediately, and a materials testing laboratory was in place by 1896. By 1900 federal officials were acknowledged as THE experts in the field of highway construction. Ever since, research has been a fundamental element of the federal role, even as the BPR encouraged the states, industrial trade and professional associations, and many universities to undertake research as well. Throughout, the federal government played the key role in encouraging and supporting such work. And because of their reputation as experts, federal engineers successfully developed widely-adopted model legislation for state and local road building agencies. They also taught local road officials the basics of good administration, just as they proposed standards for construction and materials. In short, federal engineers influenced all aspects of road construction, finance, and

administration. Indeed, this model of experts as policy makers became a fundamental feature of the federal role in surface transportation.

The emphasis upon technical expertise grew from a core assumption of the Progressive Era reformers at the turn of the 19<sup>th</sup> century, namely their desire for efficiency and the prevention of waste and corruption. To many middle class Americans, the way to achieve efficiency was to give scientists and engineers more authority and influence on the making and implementation of public policy. Indeed, technical experts who drew upon science were seen as the ideal problem solvers, since they acted not upon passion or emotion, but upon information, especially statistics. Indeed, some held that experts were immune to graft and corruption and their scientific training insured that they served only the public interest. The federal government's approach to road construction was not the only instance of this reliance upon, and trust in, engineers and experts, but the federal highway program proved an important and long-lived example. In 1900, Congress first mandated that the Bureau of Public Roads be headed by an engineer, believing that this step insured efficient management of road building efforts. From there, it was a small step to the conclusion that politics and politicians ought to be removed from all but large-scale decision-making about roads, so that engineers could make rational choices that served the entire country. This approach guided American highway policy—especially the federal role in building roads—until the late 1960s. Epitomizing the role of engineers was the leadership of Thomas H. Macdonald, an Iowa engineer who headed the BPR from 1919 to 1953—an unprecedented period of service. And he was not the only engineer who provided the federal leadership of the nation's highway program because of the deep respect with which he was held by all parties involved in road construction.

A third element of the federal role in surface transport that emerged in the early years of the 20<sup>th</sup> century mirrored the ideals expressed by Gallatin and others, namely that federal transportation efforts should address national concerns. This point assumed even greater significance after the federal government began to provide funding for road building. Significantly, federal funding for roads came only after the BPR had established its reputation for neutral or apolitical expertise in the administration of road programs. Thus federal engineers were highly influential as members of Congress debated road construction funding. In 1912, congress approved a pilot program to explore federal support for roads that advanced rural mail delivery. The success of this effort led to the passage of the Federal-Aid Road Act of 1916, which provided the first funds, matched 50/50 by the states, for highway construction on roads for mail delivery. They provided a total of \$25 million. The work was interrupted by World War I and progress was slow, but the concept had caught hold.

In 1921, Congress renewed the highway legislation, but with a different logic for federal involvement, in large part because of the enormous popularity of the automobile. Funds increased to about \$50 million annually. More importantly, the development of a national system of primary and secondary roads became the main goal. The federal funds were limited to only 7 percent of each state's roads mileage, a network that became the U.S.-numbered highway system. These roads connected the nation's main cities and towns, but federal funds could not be used inside any urban area with more than 5,000



people. The principles here resemble some of the ideas broached during the 19<sup>th</sup> century, with the key point being that the federal government would help develop those roads that served the widest purposes. Not all roads were eligible for federal funds because states and local governments were expected to assume responsibility for the great majority of the road network that fed into the national system. In other words, from 1912 to 1921, the goal of federal involvement in highways had already changed. This would not be the last adjustment of purpose, but a basic pattern of federal involvement in surface transport was set in place .

A fourth element of that federal role emerged in the Congressional debates in 1915 and 1916 about the best way to administer and build the nation's road network. Should the federal government do the job itself, or should it do so jointly with the states? Eventually Congress accepted the federal-aid concept of shared authority and funding between the states and the federal government. Many, including the automobile industry and many motorists, supported creation of a federal highway agency. But the engineers of the BPR successfully pressed hard for a federalist system, in which state highway departments that met standards set by the BPR would design and build roads after federal inspection and approval of plans. Funding responsibility was equally shared. The states then maintained the completed roads. The partnership of the BPR and the state highway departments that resulted was not always perfect and at times could be inefficient. But it served a crucial purpose of enabling the federal highway engineers to use their superior expertise to bring along the states highway agencies, some of which were not formed until 1916. The federal-aid program rested upon cooperation rather than federal dictation to secure a sound road system, and over time state officials developed more technically expert and professionally managed agencies.

This process was sometimes slow and required enormous patience. During the 1920s, the federal government's highway engineers clearly stood at the center of the development of the nation's road system. Even though the federal-aid road system numbered only about 200,000 miles of the more than three million miles of roads in this country, federal engineers shaped and influenced the work of state and local road builders in terms of organization, administration, and technical processes. The federal engineers slowly persuaded state highway agencies to create testing laboratories that eventually grew into research laboratories. They instilled sound management practices and sought to prevent graft and corruption. But they used only sparingly the ultimate weapon at their disposal – the threat to cut off federal funds. The commitment to federalism embodied in the federal-aid partnership has remained a central aspect that governs the federal presence in surface transportation.

Importantly, the federal role during the 1920s also grew to include leadership in the field of planning. Federal engineers recognized that the demands for more roads outstripped the available funds, and they were determined to make the best use of scarce dollars. They pioneered vehicle counting and traffic projection techniques in order to determine where traffic growth was likely to be greatest, and sought to focus funds on those needs. Their approach tended to be narrowly economic in nature, summarized by Thomas MacDonald's oft-repeated comment that "we pay for good roads whether we have them

or not.” By the mid 1930s, the BPR mandated that every state highway department undertake a state-wide highway planning survey using a methodology it had developed. From this base emerged a picture of the nation’s road use and needs, a picture that was essential for the eventual creation of the Interstate Highway System.

But underlying that spectacular project, which took form at the end of World War II, was the fact that the federal role in surface transportation expanded and grew during the 1930s. Planning activities were not the only example of this larger role. In fact, the 1930s witnessed a growing reliance upon federal leadership and support in addressing the ever-growing problems of surface transportation. This was hardly surprising; during the Depression of the 1930s, the federal government’s role expand in many aspects of American life. But road work was one of the areas of greatest growth. Significantly, the various work relief programs proposed by Franklin Roosevelt and endorsed by Congress spent more money for roads than on any other form of public works. The beneficiaries included the national forest and national parks, in the form of famous roads still widely used, including Glacier’s Going-to-the-Sun-Highway, the Skyline Drive and the Blue Ridge Parkway, and the George Washington Memorial Parkway, to name a few. Similarly, PWA funds allowed many highway departments to and cities to attack the dangers of railroad grade crossings. At a more general level, the federal government loaned funds to the states in order to permit state highway departments to continue construction programs, even when the states could not provide their normal 50 percent matching share. But the most important step in expanding the federal presence was the extension of the federal-aid highway program to include roads into and through the nation’s cities, beginning in 1938. Most informed observer were aware that it would be an enormously expensive undertaking to accommodate cars inside cities. But the BPR’s planning survey of the 1930s left little doubt that cities faced the most pressing needs in terms of roads. Presidents Roosevelt, Truman, and Eisenhower all balked at the consequences of this finding, but the need could not be ignored, for the task was simply beyond the resources of the states and municipal governments. Detroit, for example, boasted when it opened a single mile of multi-lane, limited-access highway in 1940 – all that it could afford. New York City under Robert Moses made huge strides with its parkway system and bridges, but only because of the city’s access to federal work-relief funds. Chicago and Los Angeles also made pioneering steps, but these cities were exceptions to the general rule that cities could do little more than experiment with special roads for cars.

#### **The Federal Role in the Interstate Era**

The real implications of this need to pay attention to cities became apparent after 1944, when Congress authorized (but did not fund) the Interstate highway system. The original intent was to retain the federal-aid program, in which states would match ever larger federal appropriations, which passed \$500 million annually in the postwar period. Almost instantly, it became apparent that the states could not easily continue to match federal dollars. By 1949, an entire year’s worth of federal funds had accumulated, unmatched by the states. States explored toll financing, which worked for many arterials and main routes, but also had limitations. Congress wrestled with the funding question

from 1948 until 1956 before agreeing to create a Highway Trust Fund that would sequester funds raised by taxes on a variety of items (tires, gasoline, etc.) as a way to pay for the new road system. In this way, the federal government could pay 90% of the cost of the Interstate network. The federal presence in surface transportation had jumped enormously.

But that was not the only consequence of the development of the Interstate highway system. Traffic grew very fast after the war, as the number of registered vehicles exploded. The pressure for more roads of all kinds became enormous, even as the cost of materials accelerated in the postwar inflation. In addition, constructing the new Interstate network posed enormous technical challenges. Most states initially lacked the expertise and experience to design and construct these roads, although a few states (New York, California, and Michigan) began exploring techniques on their own. Most states relied upon design standards and construction specifications developed by BPR engineers. By 1960, most states were comfortable undertaking rural sections of the system, but work lagged in most cities, where the problems were more complex and the need was greatest.

Ironically, the effort to accelerate construction work in cities produced a number of highly significant and largely unintended consequences that significantly altered the federal role in surface transportation. Road builders initially believed that American motorists wanted the new road system opened as fast as possible. To meet that demand, they tried to move very quickly, often bypassing local officials and acting with little regard for the neighborhoods where swaths of houses were torn down to make way for the roads. Never before had roads sliced through cities in this way. Public complaints, then hostility and anger, and finally legal resistance was not long in emerging. The so-called "Freeway Revolt" that emerged in San Francisco, New Orleans, Boston, Philadelphia, Washington, DC, and numerous other cities represented the first serious opposition to road building in this country. As a result, the entire process of road construction changed in the 1960s. First, processes for public involvement (public hearings, etc.) and environmental protection (notably environmental impact statements) were legislated, with federal agencies leading the way in forcing a more deliberate pace and more deliberative processes. Second, engineers were displaced as the leaders of most state and federal road building organizations, bringing much more openly political calculus to the decision-making processes about roads for the first time since 1916. The final effects of this change are apparent in the growing number and importance of "demonstration projects" (earmarks) with in the national highway program over the past 25 years.

I would suggest that the diminishment of trust and reliance upon expertise over this time period constitutes one of the most significant adjustments in the federal role in surface transportation. It should not be assumed that engineers were always right in the decision they made. Indeed, there are many ways in which their assumptions and approaches were flawed or too narrow, resulting, for example, in "China walls" through poor neighborhoods and the loss parkland and natural locations to provide rights of way for expensive automobile highways. Aesthetic considerations were not much of a factor until Lady Bird Johnson pressed for the Highway Beautification Act in 1965. Nor

should we assume the engineers naively ignored politics, for they knew instinctively that road building was an inherently political process. That is why I have referred to them as apolitical, not non-political. They sought to stand above traditional partisan politics and to serve the country, as they perceived it. It might seem hard to believe, but more than once members of Congress asked Thomas MacDonald to find the answer to particularly thorny problems that had vexed law makers. Crucial to this public and political willingness to defer to the experts was the ability of engineers to base their decisions on apparently neutral data and information in an effort to serve the public interest – words rarely used these days. I wonder if we might seek to recover a better balance between the roles of expertise and politics in working out the role of the federal government in surface transportation.

One reason I suggest this point is another lesson that emerges from the construction and operation of the Interstate Highway System. This network of roads exemplifies what we mean by the term *infrastructure* -- a term much in use since the Katrina disaster, the collapse of the I-35W bridge in Minneapolis, and the flooding currently underway in the upper Mississippi River valley. One reason the federal government is involved in all of these areas is the fact that only it has had the resources and the expertise to contemplate, plan, and implement such systems on a national scale. The Interstate highway system is a perfect example of this point. The planning data on which Interstate network rests was first gathered by the BPR and state highway departments in the 1930s. The conception of the system was fine-tuned during the 1940s and passed into law in 1944, funded in 1956, and then constructed from the mid 1950s through the 1980s. Today, it remains an incredibly vital transport and economic artery, serving roles and meeting needs that none of the early designers and planners ever envisioned. One reason is that the developers of this network saw it as an investment in the future, not just a project of the moment. The results of this thinking become clear if we think about the case of Amazon. The company is celebrated for pioneering an e-commerce system that now delivers books, music, and much else to our doors. But Amazon depends every bit as much on the capacity to deliver those products over the Interstate road system as it does on fiber optics and computing. This accomplishment did not happen by accident, although it was not planned out in advance. What mattered most was the conception of that network of roads as a distinctly national system proved highly flexible, and that outlook, I would submit, is somewhat more likely to emerge from the federal side of the fence.

## Conclusion

Let me close with a final observation concerning a simple fact about the federal government's role in surface transportation. This country has never really had "surface transportation policy." We have had highway policy, and policy governing railroads, aviation and airports, mass transit, for waterways. But all have operated in splendid isolation, indeed in serious competition with each other. Indeed, the entire structure of oversight and appropriations for transportation within the Congress reflects an idea that was current 100 years ago: each form of transportation technology needed to be completely independent and walled off from each other. This was a product more than

anything else of the fear of railroads as predatory monopolies – a fear that outlasted any real monopoly railroads held over the movement of people and freight. This nation paid a high cost for the survival of this mindset, to the extent that it shaped the nation's transportation policy until 1980.

There has been much talk for more than 15 years about the significance and importance of intermodal surface transportation. Indeed, the Intermodal Surface Transportation Efficiency Act of 1991 supposedly signaled a major shift in the orientation of transportation activities supported by the federal government. But just as the formation of the U.S. Department of Transportation in 1970 could not resolve the tensions and competitions between the different forms of transport, so ISTEA could not suddenly elevate intermodal programs into reality. It is fascinating to me that the Pennsylvania Railroad had sought as early as 1929 to become a transportation company that could use all modes of transport, but was prohibited from doing so by federal regulators and their supporters in Congress. Today, it is not an accident that the first genuinely intermodal companies are not railroads, airlines, or trucking companies, but rather parcel shipping companies like UPS and FedEx that do not care HOW an object is moved, only that it travels as cheaply and quickly as possible. History suggests that paying attention to a wider definition of transportation systems might well have resulted in better choices and more efficient use of usually scarce resources – especially money! In this instance, it may be time to contemplate how much our current thinking about transportation can be hobbled by the influence of ideas from the past.

In conclusion, I would note that the role of the federal government in surface transportation seems to have rested upon several enduring elements. It has often focused on providing expertise and knowledge. It has often emphasized the problems of widest national importance, especially by tending to focus upon the development of national systems serving broad needs rather than on isolated projects. In both cases, federal officials often had to provide leadership because of the scale of the problems and the costs involved. As a result, transportation infrastructure systems have been available for creative utilization by citizens as well as by companies like UPS. The challenge of the 21st century is to insure the continued availability of important and expensive networks of surface transportation. One need not dig far into the current literature of transportation to realize that in this global economy, strong transportation infrastructures that reach all Americans matter more than ever before. History does offer some guidance in thinking about how to achieve such networks. Through attention to the nation's transportation history, we find that in the areas of research, planning and conception of entire systems, oversight and accountability, and funding, the federal government played a vital leadership role. That does not mean that it was the only voice that should have been heard in the process – far from it. But often, the stance that the federal government has taken has been very important; sometimes, the input of federal officials and agencies has been absolutely essential. I doubt that this situation is going to change. The challenge is finding ways to blend the most useful elements of tradition and the past with the most useful changes of the present.

Thank you for this opportunity to present my comments.

# **A Historian's View of the Federal Role in Surface Transportation**

**Hearing before the U.S. Senate Committee on  
Environment and Public Works**

**June 25, 2008**

**Bruce E. Seely**

**Michigan Technological University**



**Michigan Tech**

## The Federal Role: 19<sup>th</sup>-Century Patterns

1. Albert Gallatin's Model  
A **National System**;  
Doing that which others cannot
2. Transportation:  
Inherently Political
3. Multiple actors: State/Private/Federal  
States and Canals  
Private Corporations and Railroads  
Federal Role: Land-grants, Engineering, Regulation



## The Federal Role: The 20<sup>th</sup> Century Push for Highways

1. Technical Knowledge & Expertise
2. The Pursuit of Efficiency: Engineers as problem solvers

3. National Networks, National Purposes

**Post roads and mail service – 1912, 1916.**

**A SYSTEM of primary and secondary roads - 1921**

4. Federal-aid: Federalism in Action

5. Planning Efforts

6. Impact of the Depression

**Work Relief: National Parks  
railroad grade crossings ,etc.  
Urban Highways: 1938**

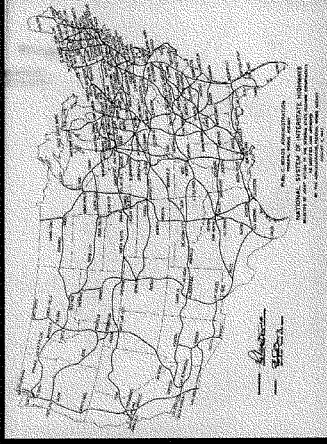


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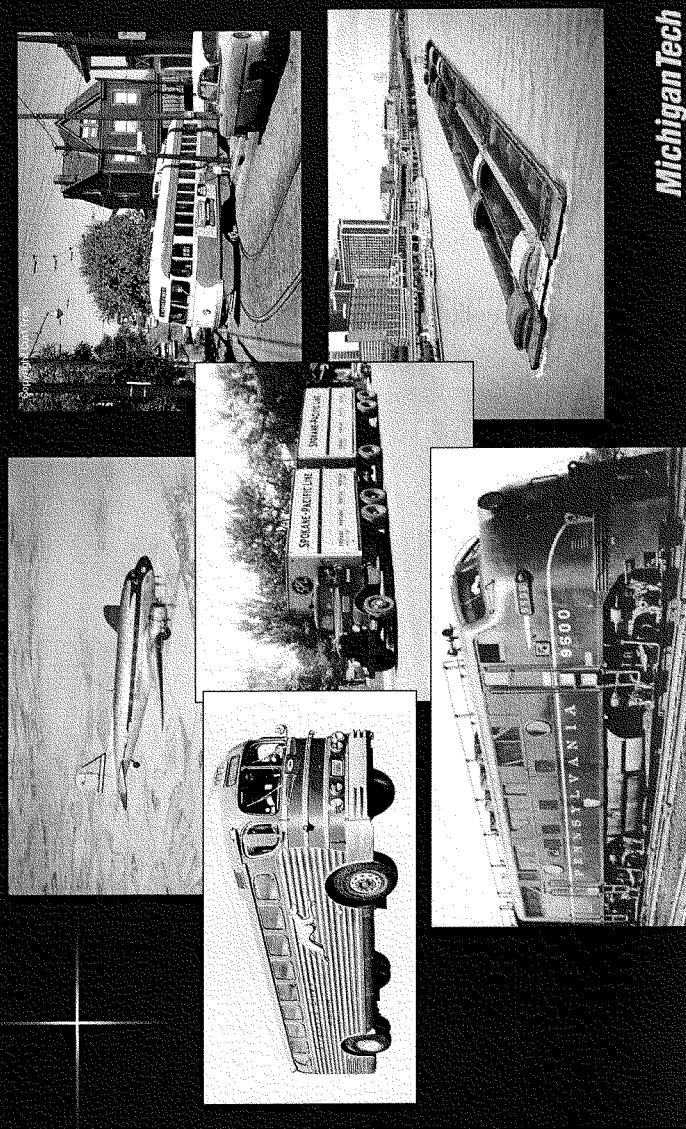


## The Federal Role: The Interstate Era

1. Funding
2. Technical Standards
3. Freeway Revolt: New Procedures
  - Public Hearings
  - Environmental Impact Statements
4. The Loss of Trust in Experts
  - Balancing Politics and Expertise



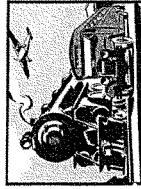
## U.S. Transportation Policy: Modal vs. Intermodal



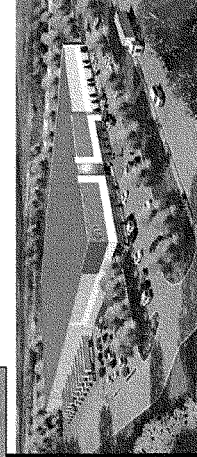
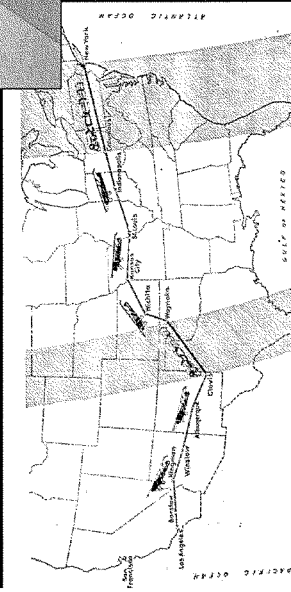
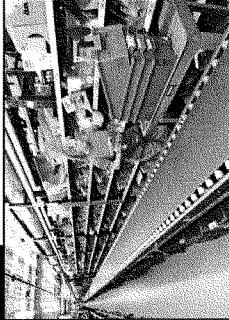
# U.S. Transportation Policy: Modal vs. Intermodal

## Looking Ahead in Transportation

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Environment and Public Works Committee Hearing

June 25, 2008

Follow-Up Questions for Written Submission

Questions for Seely

Questions from:

Senator Thomas R. Carper

1. In your written testimony you had a very interesting statement in your conclusion. You said that "it is not an accident that the first genuinely intermodal companies are not railroads, airlines, or trucking companies, but rather parcel shipping companies like UPS and FedEx that do not care how an object is moved, only that it travels as cheaply and quickly as possible." You go on to say that "history suggests that paying attention to a wider definition of transportation systems might well have resulted in better choices and more efficient use of usually scarce resources - especially money!" Why does the federal government focus on the mode of transportation instead of the movement of goods and people? How could we address this problem so that we could match the efficiencies of UPS and FedEx?

ANSWER:

This question gets to the heart of a very important insight about the nature of American transportation policy. More than once in the past (1920, 1940, and in the 1960s with the formation of the U.S. DOT), the Congress claimed that it had passed legislation that provided a national transportation program. But in each instance, the legislation remained wedded to the concept considering transportation as a set of competing modes defined by different technological possibilities (airplanes, trains, busses, trucks, inland waterways, etc.) The primary reason is that many members of Congress and many citizens and interest groups as well viewed the railroads as predatory monopolies that threatened democratic and economic equality. This concept dated to the late 19<sup>th</sup> century when a few large railroad corporations really did exercise predatory economic influence. The policy solution that came into favor was to prevent cross-ownership among transport technologies and enforce a form of competition between modes. Congress acted on this view not only by creating the ICC, but also by restricting the right of railroads to own ships and to use the Panama Canal (1912). The problem is that this vision of overly-powerful railroads lasted well past the time when they actually possessed a dominant role in transportation.

Why this view survived requires us to recognize the role of politics in the setting of transportation policy. Farm groups, truckers, automobile interests, aviation supporters, maritime shipping interests, and a great many citizens retained the old view of railroads primarily because they were a good stalking horse, a useful target to secure the support for their projects and ideas. Moreover, the past poor behavior of railroad executives made the complaints and expressions of fears seem plausible. But the result was that as a nation, we developed transportation policy on a mode-by-mode basis, rarely considering the necessary interactions; indeed, the outcome usually was to discourage efforts to link modes into an overall transportation system.

As far as matching the efficiencies of current package delivery firms, the best idea was broached as early as the late 1920s by the old Pennsylvania Railroad – let transportation companies come into existence that can own any and all modes of transportation. In this

way, the firms can choose the most cost-effective means of moving goods. This is what UPS and FedEx do now – but it has taken a long time to allow railroads to operate trucking firms, and there are still some limits on this.

I also believe that the entire structure of policy making tends to impose limits on efficient decision-making. Most importantly, Congress itself still reflects the modal approach, by giving different committees oversight over different aspects of transportation. This reinforces the sense of transport modes competing against each other, rather than working together to provide the best possible transport system. I am not naïve enough to think that changing this structure would remove the competition for funds between modes. The US DOT still faces this problem all the time. But it might help to have wider conversations if a single committee in the House and a single committee in the Senate considered transportation questions. I also realize that this is not an easy or likely change to make.

#### Senator Sheldon Whitehouse

1. In the hearing, I mentioned the fact that under the current highway authorization we do not distinguish between capital investments and maintenance. Do you think such a distinction would be useful, and that in failing to make this distinction we miss opportunities to more efficiently fund our transportation infrastructure?

#### ANSWER:

There is a long history of discussion about this point. Most narrowly, the original federal-aid highway bills recognized this situation by requiring that the federal government provide only the capital expenses, and the states meet all maintenance charges. This pattern survived until the cost of re-building federal-aid roads became apparent after World War II, and the rules were then re-interpreted to allow re-construction of existing roads to use federal funds, especially if the roads were upgraded with extra lanes, etc. The real pressure for blurring maintenance and capital costs came with the reconstruction of sections of the Interstate network, which were wearing out by the late 1970s. From these situations came the interpretation that reconstruction to higher standards was not maintenance. Clearly, the main reason for the change was the enormous expense of keeping Interstate highways safe and up-to-date in technical terms.

More broadly, since the 1920s at least, there have been calls to create a cabinet-level office that focused on capital projects. Reformers usually viewed this in ways that resemble your viewpoint, considering the distinction between capital and other expenditures to be a useful way of developing efficient oversight and design of federal programs. They also assumed this would allow for prioritizing projects. Economists might state the advantages of this approach more accurately than I can. But Congress and many interests never liked this approach, fearing that expenditures might be restricted by economic conditions (counter-cyclical expenditures, etc.). Supporters also liked having programs involving capital activities spread through multiple agencies in ways that limited comparisons among projects in terms of utility and usefulness. In other words, politics has intervened.

Would it be better to classify expenditures? History suggests that the practical realities of cost make it hard to see where the gain might be. Federal funds still do not go for routine maintenance. And would we be better off if the states had to bear the full cost of rebuilding

the most expensive and important network of roads? I'm not sure that the accounting distinction you are envisioning is the main source of inefficiency in transportation funding.

2. Would knowing the relative cost-effectiveness of capital spending projects be helpful in determining which such projects to fund?

ANSWER:

Some states tried to address this idea in the 1950s by programming funds for roads using a sufficiency formula that identified where roads funds could be most efficiently spent, in terms of meeting the needs of the greatest number of users. What is needed now is some form of calculating which mode (trains, roads, canals, air, etc.) best serves a given need. But introducing such a formula for comparison would be a VERY difficult political challenge. Picture getting everyone to agree to how to make those calculations! But with that said, it does seem worth considering ways to consider where the greatest problems are, and where funds could be expended to the greatest public good. This approach would have to be better than relying upon earmarks and demonstration projects to allocate a large part of the nation's transportation dollars.

3. Would knowing the relative cost-effectiveness of maintenance projects be helpful in efficiently prioritizing such projects?"

ANSWER:

As noted above, I do believe that this might help – but part of the answer depends on what we consider maintenance to entail. It is quite interesting to me that some of the best maintained high-standard roads have been the toll turnpikes, which could use operating tolls to develop planned maintenance and preventive programs so that maintenance demands did not accumulate until the problems had become very expensive to address. This outlook seems to me more important than prioritizing maintenance projects – let's bear regular charges at a smaller scale rather than very large expenses at intervals. The analogy would be to preventive medical check-ups, which most experts consider a cost-effective way to minimize catastrophic medical expenses.

Senator James M. Inhofe

1. In your testimony you describe how in the late 1800's, private enterprise dominated Transportation; however, the federal government "retained a presence in the area of transportation as both encourager of projects in the national interest and a limiter of actions that seemed predatory and monopolistic". I believe we are finding ourselves in that same position today. Because the needs are so great and the federal resources limited, we need to encourage partnerships with the private sector and like in the 1800 we must keep public interest in the forefront. Are there any lessons learned in the 1800's that you believe we can benefit from today as we make greater use of the private sector in transportation infrastructure?

ANSWER:

I believe we can always learn from the past. In this case, the main point I would note is that private enterprise tends to develop the most profitable elements of a system first, so that the benefits of transportation (or any utility) are distributed unevenly. This is one of the main reasons why the federal-aid highway system came into existence – there was no private actor

willing to build post roads, for example or farm-to-market roads into the country side, or even intercity routes. Yet one of the great benefits of the federal-aid system is that it reaches all corners of the country, including those places where the return on investment would be very low for a private enterprise. This lesson was reinforced in the 1950s, when the toll road boom took off. While these were state agencies, the lesson would apply to many of the public-private partnerships being discussed and implemented today. And the lesson is that toll funding met an important need, but could not address all of the funding challenges faced by the nation's road and other transportation systems. To complete the system required a public presence. This was why it proved so painful for the railroads to cut back service beginning in 1915 and continuing through the 1980s, when they found themselves overbuilt or in competition with cars and trucks. Many communities and businesses depended upon those services, and the changes could be wrenching. Some rail lines were kept open with subsidies (urban commuter lines in particular, a service that never made money for the railroads), as is true of much long-haul bus service today.

So the main finding I would suggest we can learn from the past is the need to find ways to balance the profit-oriented view of private actors with the wider demands of full and equal access to larger systems. We need to recognize that there is no single answer to transportation funding needs. The answers that emerge from history show the importance of drawing upon a range of resources to meet the widely varied needs for funds of our transportation networks, with all levels of government involved in the funding and delivery of the necessary services.

2. When the Federal-aid highway program was created 50 years ago, it had a clear purpose: creating a network of limited access highways that connected our cities and facilitated the interstate flow of trade and travel. Today that connectivity has been achieved, but now we find ourselves funding countless activities. We are trying to be all things to all people. What would you recommend that we set out as a clear, focused Federal role in the upcoming reauthorization?

**ANSWER:**

I fear this question gets a little beyond my level of expertise as a historian. I can tell you how the various political forces led to the situation that you accurately describe, adding many, many requirements, programs, and activities to the roster of federal activities. I'm less comfortable offering advice on which of those activities best fits a federal vision.

I will say that my sense is that the federal government's role might best be focused on insuring that integrated systems are available to as wide a population base as possible. In other words, I'd have the federal government insure that complete systems are developed, not just the ones that offer the most immediate payoffs. I'd also have the federal government try to promote the mindset of transportation as an investment in the future. In this global economy, it is vital to have good access not just for domestic contacts. Transportation is a vital economic engine, and access to good systems largely determines where economic opportunities emerge. Among the reason that auto plants are locating in the southeastern US is the existence of the Interstate network, which allows the easy movement of parts to plants and cars to markets. This development has occurred decades after the system was originally planned and constructed. Importantly, these roads in Tennessee, Kentucky, Alabama, and so forth were constructed despite the fact that there seemed to be little demand for such highways in the 1940s and 1950s. But by creating an entire system, many better possibilities

have emerge in our time. Insisting on flexible and complete systems is to my mind, a primary reason for federal involvement in transportation.

3. Many criticisms of the current federal program are based in its lack of a results oriented focus. How would you recommend that Congress structure a performance based, outcome driven approach in order to yield a greater return on our highway investments?

ANSWER:

Again, I fear that this question move beyond my skills as a historian. The very terminology of your query suggests the use of economic tools that are not my strength. I must yield the answers here to those who have thought about this particular question more carefully than I.

4. How do we address the critical revenue shortfalls experienced by public transit, when evaluating the financial capabilities of federal system funded by user fees?

ANSWER:

I do not wish to be perceived as ducking your questions, but again I find that this question is outside my range of expertise. I can offer only the opinion that transit faces an especially difficult challenge, in that user fees have rarely been able to meet the costs of operation. Yet the service of public transit enterprises may be of such social importance that public agencies almost are required to take them on or subsidize their operations. This gets to the basic political science question of "Why government?" It is not an accident, to my mind, that transit services have been creatures of public agencies more than private actors. The profit calculus of private enterprises simply does not include the externalities of transit, which can include the very high social costs of NOT providing a money-losing service. These tend to be the kinds of things we have come to expect government to shoulder. Another way of looking at this question is to recognize that there are many beneficiaries of a transportation service who are not direct users of it, and these indirect beneficiaries do not pay at all for the benefits of a service funded solely by user fees. In this situation, general taxation provides a "fair" way of recovering some of the benefits from indirect users. Certainly transportation is one of the best examples of this situation. So this line of logic leads me to suggest that general revenues almost by definition have a place in supporting transit systems. But history also suggests that more than the federal government needs to be involved in supporting these services.



Senator BOXER. That was very interesting.  
Now, we would call on Lance Grenzeback, Senior Vice President of Cambridge Systematics, Inc. Welcome, sir.

**STATEMENT OF LANCE R. GRENZEBACK, SENIOR VICE  
PRESIDENT, CAMBRIDGE SYSTEMATICS, INC.**

Mr. GRENZEBACK. Thank you.

Madam Chairman, Senator Inhofe, distinguished Committee members, my name is Lance Grenzeback. I am Senior Vice President of 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 the Federal role in surface transportation. I will focus my remarks today on freight transportation on the Nation's highway system. I will argue that the key Federal role should be to maintain the capacity and the reliability of the highway freight system, reduce major highway bottlenecks to freight movement, authorize new institutional arrangements to improve and operate highway networks, especially at the multi-State and corridor levels, and balance the economic risks as the freight transportation system adjusts to changes in demand, fuel and fuel costs, carbon taxes, and greenhouse gas regulation.

On the first point, maintaining capacity and reliability, as several of you have mentioned, the economy is forecast to grow at about 2 and a half percent per year over the next 30 years. This will nearly double the demand for freight transportation. The major drivers of this growth will be consumption, production, trade, and supply chain practices.

The U.S. population will grow to about 380 million by 2035, consuming more food, clothing and housing, which will mean more freight moved on the highways. The number of people employed in manufacturing will likely continue to drop, but industrial production will rise because of automation, generating more products to be shipped. Trade is expected to grow faster than the economy as a whole, increasing the flow of imports and exports through international gateways such as the ports of L.A. and Long Beach.

Finally, more businesses are moving toward on-demand supply chains, replenishing whatever the customer consumes as soon as it is sold and generating even more shipments. Most of the demand for freight transportation will center around our major cities and their surrounding major regional trade areas, as shown in figure 1 of the handout, which I believe you have with you. Trucks will carry upwards of 80 percent of all domestic freight tonnage.

Figure 2 on the handout shows the projected growth of freight truck trips. The black line indicates the highest growth in highway truck trips. The growth is widespread across the Country, including many of the jurisdictions that you represent.

In studies for the U.S. Chamber of Commerce and the Transportation Research Board, we have calculated that annual spending by all levels of government is nearly \$50 billion less than needed to maintain the condition and performance of the Nation's highway system alone.

Senator BOXER. Could you say that one more time, sir?

Mr. GRENZEBACK. Yes, ma'am. We did a study for the U.S. Chamber of Commerce and a followup study for the Transportation Research Board. In the studies, we looked at the difference between current revenues and the level of expenditures needed to maintain the condition and performance of our highway and transit systems. For highways alone, the gap is approximately \$50 billion annually.

Senator BOXER. Fifty billion dollars.

Mr. GRENZEBACK. Yes, \$50 billion—five-zero. That is correct.

In this environment, I think it is vitally important that the Federal Government act to maintain the capacity and reliability of the highway freight system. If we do not, we will—as many of you have mentioned—we will certainly increase the cost of doing business and the cost of living for all of us.

On my second point, reducing delays and highway bottlenecks. As more urban areas become saturated with traffic, bottlenecks have grown along the freight routes, creating corridors of congestion instead of corridors of commerce. The worst bottlenecks, shown in Figure 3, are at the urban Interstate interchanges in our metropolitan areas. These bottlenecks affect three critical elements of our highway freight system. The metropolitan networks shown in Figure 4, which account for about 40 percent of our large freight truck trips. The mega-region networks shown in Figure 5, which account for about 30 percent of trips and serve the core of the Nation's warehousing and distribution operations. And then the national trade corridors, shown in Figure 6 of the handout, which also account for about 30 percent of trips, and are key to linking our cities, our regions and our gateways.

Dealing with traffic bottlenecks in urban areas has traditionally been the responsibility of State and local governments, not the Federal Government, but we are not reducing these bottlenecks because their costs are often so high that they cannot be tackled by a single State or city. We need a new national program that pools and focuses Federal, State and private sector resources on reducing major highway bottlenecks. We need to focus on these bottlenecks soon. Capital improvements take a considerable amount of time to implement. In the short term, we need to look more intensively at operations.

My third point deals with authorizing new institutional arrangements. I suggest that Congress take a lead role in defining new institutional arrangements that allow States to coordinate their highway investments and operations at the same scale as the private sector businesses. Most major industries and the motor carriers and railroads that serve them, operate at a multi-State trade area level, but State departments of transportation and their economic development agency counterparts do not. We need institutional mechanisms that bridge the gap between national and State government, addressing freight transportation at the multi-State level.

One idea emerging from the I-95 Corridor Coalition's projects and workshops would involve congressional authorization and initial capitalization of a national transportation infrastructure bank which could, in turn, establish multi-State or regional infrastructure banks. These would enable groups of States to finance projects of regional and national significance. This would facilitate public

and private investment where it is most needed—in major bottleneck projects that have a long economic life and substantial economic benefit.

Finally, to my fourth point, balancing economic risk. Increasing demand, fuel costs, carbon taxes, and greenhouse gas regulations, will trigger changes in supply chains and business location, affecting industry competition, jobs, and economic development across the United States. I suggest that Congress work aggressively to coordinate national policies on transportation, energy, greenhouse gas regulation, and particularly economic development, with the objective of balancing the economic risk between business and carriers, the public and private sectors, and regions and communities, so that uncertainty about the future does not lead to continuing under-investment in our freight transportation system.

Thank you for the opportunity to appear before you today.

[The prepared statement of Mr. Grenzeback follows:]

**TESTIMONY OF LANCE R. GRENZEBACK**

Senior Vice President  
Cambridge Systematics, Inc.  
100 CambridgePark Drive, Suite 400  
Cambridge, MA 02140

on

**FUTURE FEDERAL ROLE FOR SURFACE TRANSPORTATION**

before

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

Wednesday, June 25, 2008

***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

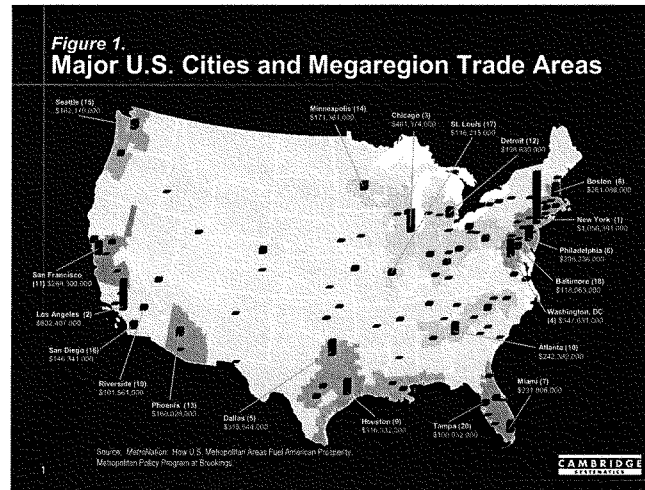
lower than the rate of growth over the last decade, which averaged three percent, and about the same rate of growth as experienced over the last 30 years.<sup>1</sup>

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.

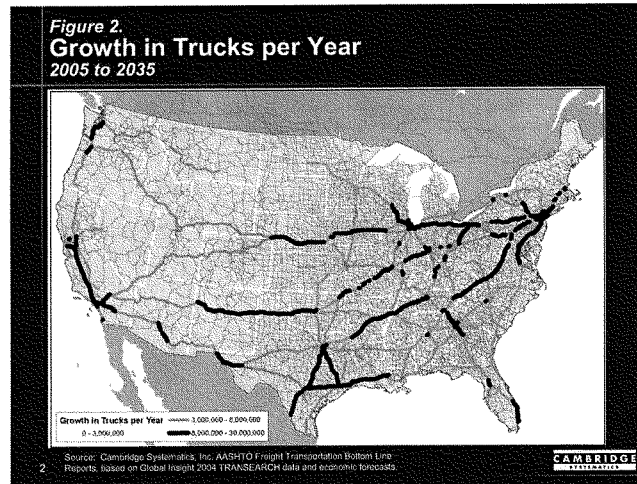
<sup>1</sup> Statistics and maps are drawn from the *Freight Transportation Bottom Line Reports*, prepared by Cambridge Systematics, Inc. for the American Association of State Highway and Transportation Officials (AASHTO), forthcoming, 2008.



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.<sup>2</sup> 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.

<sup>2</sup> 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.



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.<sup>3</sup>

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.

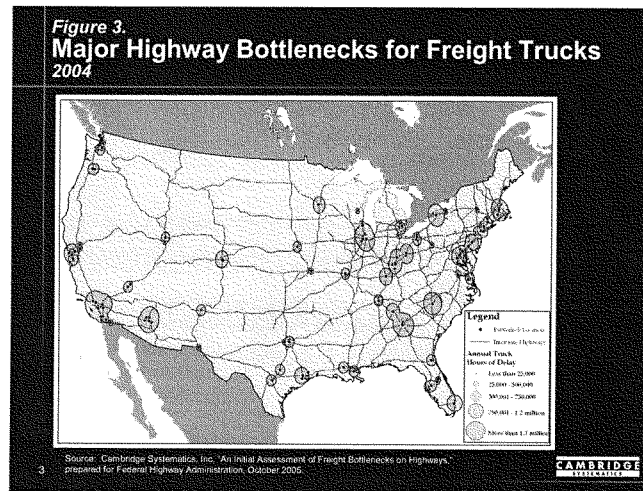
The cost of failing to maintain the highway freight system and keep pace with growth in freight demand will be economic stress. When trucks are delayed for hours on the road, the costs are passed back to shippers and receivers, and eventually to their customers. And when

<sup>3</sup> “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.<sup>4</sup>

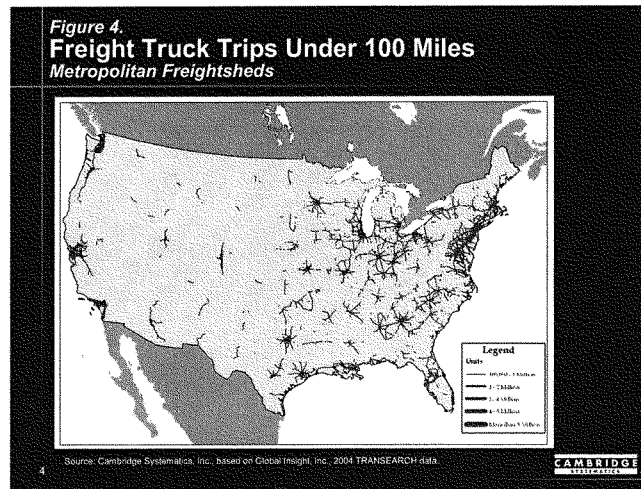


The worst bottlenecks were at urban Interstate highway interchanges. Bottlenecks at urban Interstate highway interchanges accounted for half of all delay and costs—124 million hours of delay at a cost to truckers of \$4 billion. These direct costs are magnified as they work their way through the economy. 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.

<sup>4</sup>"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.



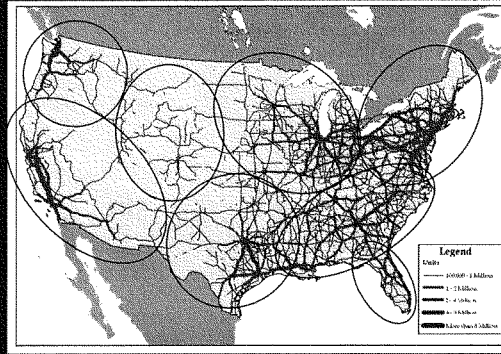
The cost of delay at these bottlenecks is high because they are at the centers of our metropolitan freightsheds, at the hubs of our megaregion trade areas, and at the intersections of our national trade corridors. One-third of all freight truck trips are under 100 miles in length, as shown in Figure 4.<sup>5</sup> 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.

<sup>5</sup> U.S. Census Bureau, Vehicle Inventory and Use Survey.

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



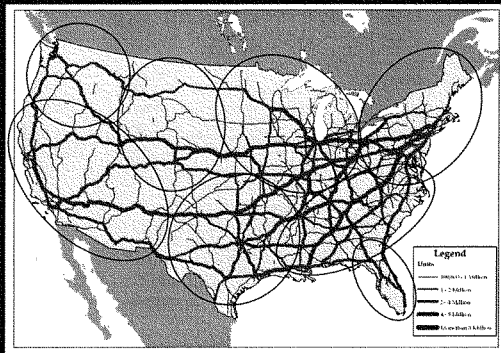
Source: Cambridge Systematics, Inc. based on Global Insight, Inc. 2004 TRANSEARCH data.

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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.

# **Future Federal Role for Surface Transportation *Freight Transportation***

*presented to*  
**Committee on Environment and Public Works  
United States Senate**

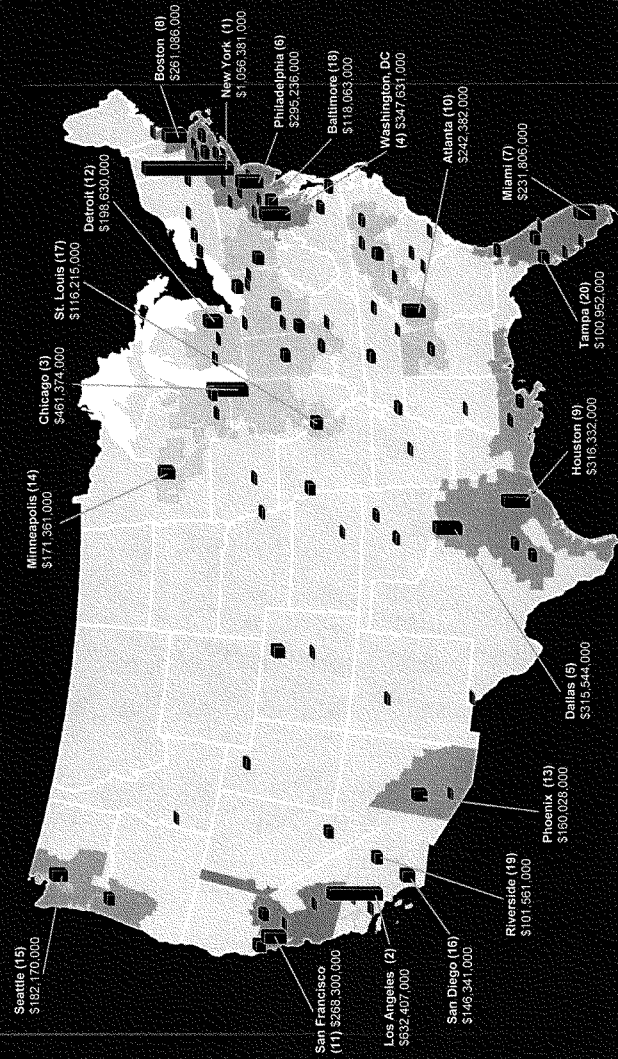
*presented by*  
**Lance R. Grenzeback  
Cambridge Systematics, Inc.**

**June 25, 2008**

**CAMBRIDGE  
SYSTEMATICS**

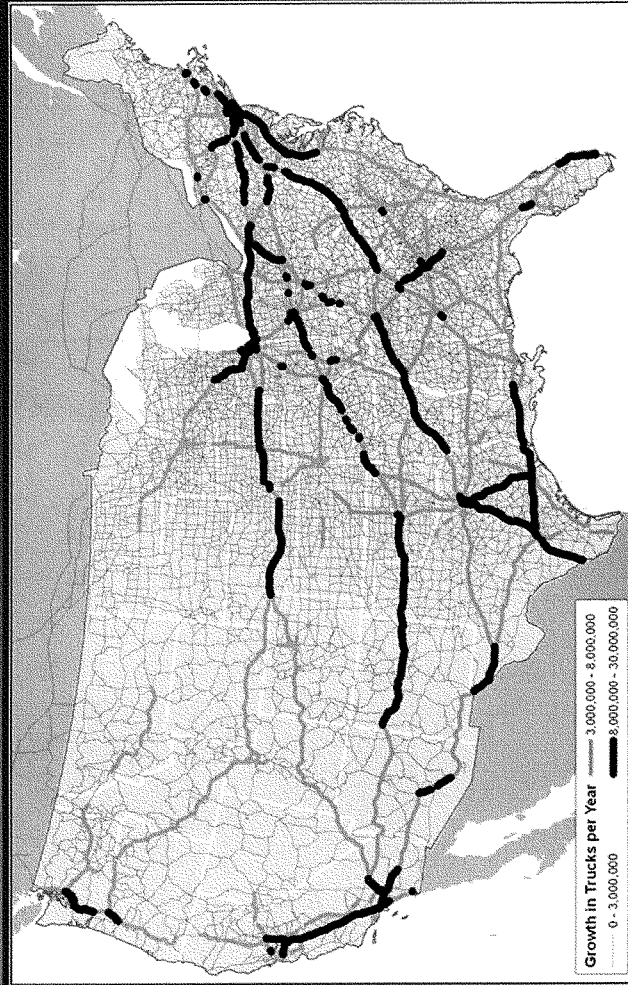
*Transportation leadership you can trust.*

**Figure 1.**  
**Major U.S. Cities and Megaregion Trade Areas**



Source: MetroVation: How U.S. Metropolitan Areas Fuel American Prosperity.  
Metropolitan Policy Program at Brookings.

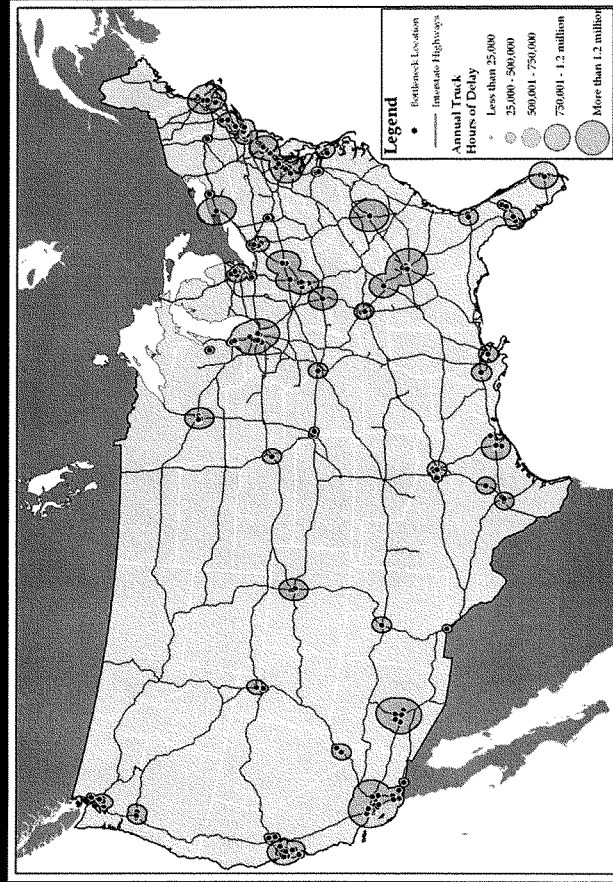
**Figure 2.**  
**Growth in Trucks per Year**  
**2005 to 2035**



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



**Figure 3.**  
**Major Highway Bottlenecks for Freight Trucks**  
**2004**



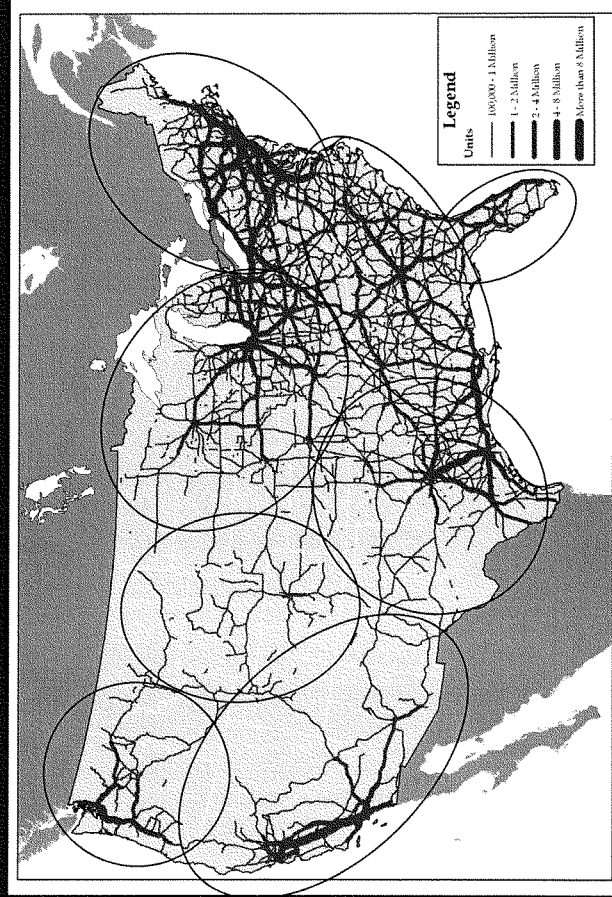
Source: Cambridge Systematics, Inc. "An Initial Assessment of Freight Bottlenecks on Highways," prepared for Federal Highway Administration, October 2005.

**Figure 4.**  
**Freight Truck Trips Under 100 Miles**  
*Metropolitan Freightsheds*



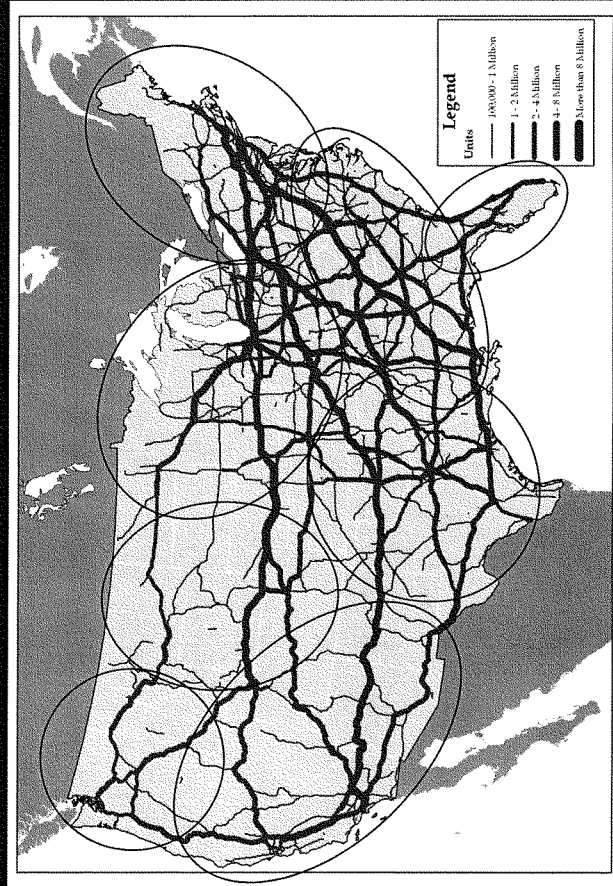
Source: Cambridge Systematics, Inc., based on Global Insight, Inc., 2004 TRANSEARCH data.

**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.

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



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

Environment and Public Works Committee Hearing  
June 25, 2008  
Follow-Up Questions for Written Submission

Questions for Lance R. Grenzeback

Questions from:

Senator Thomas R. Carper

QUESTION:

1. You state in your testimony that, in order to maintain the capacity and reliability of our highway freight system will likely mean shifting from a fuel tax to a vehicle miles traveled tax. Doesn't this share the same limitations as the gas tax in that people need to drive further each year to maintain the system? Would not a vehicle miles traveled tax fail to provide an incentive for drivers to increase the fuel efficiency of their vehicles?

RESPONSE:

A mileage-based or vehicle-miles-of-travel (VMT) user fee—assuming it is properly indexed to keep pace with inflation—would not require that people drive further each year to generate sufficient revenue to maintain the condition and performance of the highway system. However, our current gallonage-based fuel tax—even if it were indexed to keep pace with inflation—will require that people drive more each year to generate sufficient revenue to maintain the highway system. This is because our fuel tax revenues are tied to the number of gallons of fuel consumed—not the price per gallon at the pump. Gallons consumed—and fuel tax revenues—will decrease in the future as drivers convert to more fuel efficient cars and the mileage per gallon increases.

You are correct that a VMT user fee alone would not provide an incentive for drivers to increase the fuel efficiency of their vehicles. In the policy studies that we have done over the last several years for the U.S. Chamber of Commerce and the Transportation Research Board (TRB), the assumption has been that a VMT user fee would be paired with a carbon tax (or cap-and-trade equivalent), and that the carbon tax would be applied to encourage conversion to more gasoline- and diesel-efficient vehicles and over a period of time to discourage the use of petroleum-fuel vehicles.

A policy objective of a VMT user fee would be to separate state and federal government policies, fees and regulations governing the use of our highways from policies, fees and regulations governing the types of fuels and engines needed to meet national energy and greenhouse gas emission goals.

As an example, consider three cars of approximately the same size and weight: one powered by a conventional gasoline engine; second, by a gasoline/electric hybrid engine; and the third, by a battery/electric engine. Each takes up about the same space on a highway or city street, each puts about the same amount of wear and tear on the pavement, and each contributes about the same amount in sales and registration taxes. However, the car with the hybrid engine consumes

fewer gallons of gas and pays correspondingly less in fuel taxes than the conventional gas-powered car. A battery/electric car pays nothing in fuel taxes and contributes little to the maintenance and operation of our highways. As fuel prices increase, consumers will increasingly shift toward more fuel-efficient hybrids and electrics. Raising the price of gasoline and diesel fuel to encourage the use of fuel efficient cars or to increase revenues for highway maintenance will accelerate the process.

Under a VTM user fee and carbon tax scheme, each of the three cars (assuming they are driven the same number of miles in year) would pay the same amount for the space and time they are on the road – sharing equitably the costs of maintaining the highways. (When we completed the Chamber and TRB studies several years ago, the VMT charge would have been about two cents per mile if we wanted to achieve a revenue-neutral swap for all gasoline and diesel fuel taxes now collected by the states and the federal government. For comparison, charges on newer toll facilities, including HOT lanes, are in range of 15 to 25 cents per mile or more.) However, each of the three cars would pay different carbon taxes: the car with the conventional gasoline engine would pay the most; the electric car, the least. This would provide an economic incentive to convert to a more fuel-efficient petroleum-powered car or to a non-petroleum powered vehicle.

A major benefit of applying separate VMT and carbon taxes is that the government can encourage conversion to more fuel-efficient vehicles without unduly dampening economic activity. If we increase fuel taxes alone, we will encourage a shift to more fuel-efficient vehicles, but we will also force people and businesses to cut back on travel. For businesses, cutting back on travel means making do with a smaller market area and a smaller labor pool, which will drive up the cost of doing business. For workers, cutting back on travel means making do with a smaller job market, fewer job choices, and potentially less income. The net result will be to reduce the potential for economic growth. By applying a VMT and a carbon tax, we can encourage changes in fuels and engines without unnecessarily reducing the business, work, and recreational travel that is critical to economic activity.

VMT user fees also open up the possibility of charging drivers for when and where they drive as well as for how much they drive. States could, for example, charge drivers a base VMT fee (e.g., two cents per mile) on the total number of miles driven each year, and also apply a congestion VMT fee (e.g., similar to an electronic toll charge) for miles driven within congested metropolitan areas. The revenue from the congestion VMT fee could be used to maintain highways and urban streets, better manage traffic flow, and expand bus and rail services. The current proposals are that the base VMT fee and any carbon taxes would be applied nationally and that congestion VMT fees would be voted and applied locally.

I would be happy to provide copies of our highway revenue studies for the U.S. Chamber of Commerce and the Transportation Research Board, both of which deal with VMT fees, to your staff. You might also want to review the recent work of the Oregon Department of Transportation, which field tested VMT user fees ("Oregon's Mileage Fee Concept and Road User Fee Pilot Program: Final Report," Oregon DOT, November 2007).

Senator Sheldon Whitehouse

QUESTIONS:

1. In the hearing, I mentioned the fact that under the current highway authorization we do not distinguish between capital investments and maintenance. Do you think such a distinction would be useful, and that in failing to make this distinction we miss opportunities to more efficiently fund our transportation infrastructure?
2. Would knowing the relative cost-effectiveness of capital spending projects be helpful in determining which such projects to fund?
3. Would knowing the relative cost-effectiveness of maintenance projects be helpful in efficiently prioritizing such projects?"

RESPONSES:

Re 1, "distinguishing between capital and maintenance..." No, simply distinguishing between capital investments and maintenance in highway authorization would not result in significantly more efficient use of our transportation funds. Yes, there is a clear trade-off between capital and maintenance. Poor quality materials and poor construction increase long-term maintenance costs, and conversely, poor maintenance practices and/or the lack of timely maintenance practices reduce the physical and useful economic life of highways and bridges. But, distinguishing between capital investments and maintenance in the highway program authorization would not significantly improve construction and maintenance funding decisions. The key to improving those decisions is to move aggressively toward performance-based funding decisions. This involves applying performance measurement and cost-effectiveness analysis to both capital investment and maintenance operations, and then judging the sum of two in terms of overall transportation performance; that is, does the total of the investments provide accessibility and mobility in a safe, cost-effective and timely manner? Independent assessments of capital and maintenance alone will not suffice.

The transportation community, like the private sector, has long recognized the value of performance measurement, but applying performance measures in every day practice has been slow because the transportation community is accustomed to dealing with predetermined allocations of funds and because individual jurisdictions are concerned that in times of shrinking highway budgets, they might lose not gain funding if allocations are based on comparative performance. The American Association of State Highway and Transportation Officials' (AASHTO) recent report, "Measuring Performance Among State DOTs" (March 2006) is AASHTO's effort to address the issue and argue for the systematic use of performance measures.

Progress is being made by state DOTs and transportation agencies, but the transportation community would benefit from Congressional encouragement and support. We have completed several studies of the state of practice in performance management as applied to highway capital asset management, maintenance management, and transportation planning (e.g., NCHRP Reports 446 and 551). We would be happy to provide copies. There are also two new studies underway that look in more detail at the state of practice: SHRP Project C02, "A Systems-Based Performance Measurement Framework for Highway Capacity Decision Making," and NCHRP

Project 8-62, "Transportation Performance Management Programs - Insight from Practitioners." Neither project is complete, but TRB staff may be able to provide the EPW Committee with summaries of the work to date.

Re 2, "the relative cost-effectiveness of capital projects..." Yes, knowing the relative cost-effectiveness of capital spending projects would be helpful in determining which such projects to fund. Equally or more important would be knowing the relative economic benefits of capital projects. In general, transportation investments enable economic activity, making it less costly for businesses to obtain supplies and less costly to distribute to and compete in larger markets, both domestic and global. Transportation gives workers access to more employers, making possible greater specialization and higher wages, and gives consumers access to more and less expensive goods and services. Knowing which capital projects are most cost-effective at producing economically beneficial transportation services is critical to ensuring that public tax dollars are well spent.

Tools for estimating the relative economic benefits of projects and programs are available to state DOTs. Examples include the FHWA's HERS/State economic model (Highway Economic Requirements System for States) and commercial programs such as TREDIS (Transportation Economic Development Impact System). However, the state of practice in applying economic benefit-cost analysis or cost-effectiveness analysis is uneven. Most states analyze the economic benefits of their very largest projects, but few analyze projects or programs on a routine basis. It can be difficult to distinguish the economic contributions of individual projects to an already extensive and well-developed highway network, and with formula grant programs, the pressures and incentives to justify investments are modest. Nevertheless, a number of states have begun to assess the cost-effectiveness of both projects and programs. Florida DOT's Strategic Intermodal System, Virginia DOT's "Dashboard" (<http://dashboard.virginiadot.org/>), and Montana DOT's Performance Programming Process are good examples of economic benefit-cost analysis applied to transportation investment decisionmaking.

Re 3, "the relative cost-effectiveness of maintenance projects..." Yes, it would be good to know the relative cost-effectiveness of maintenance projects. The basic motivation for maintenance is to keep the highway system in a state of good repair while minimizing costs. Investing in relatively lower-cost maintenance of a highway or bridge early in its service life can eliminate or postpone the need for higher-cost rehabilitation or replacement later.

The standard approach for evaluating the cost-effectiveness of maintenance projects is life-cycle cost analysis. Life-cycle cost analysis can be applied to individual projects or whole networks. The current generation of pavement, bridge and maintenance management software employs life-cycle cost approaches to help transportation agency managers determine when and where maintenance is most cost-effective. However, there are three major complications that reduce the utility of the available analytic approaches. First, much of the maintenance work that is performed today is performed in response to events that cannot be easily predicted (e.g., flooding). Second, current systems and approaches are not well suited to evaluating risk of asset or system failure. And third, there is little consensus within the transportation community on a common set of performance measures for maintenance. These factors make it difficult to standardize analysis and benchmark best practices, but could be improved with Congressional encouragement and support.



Senator BOXER. Thank you so much.

Now, we are pleased to hear from Kathleen Marvaso, Vice President of Public Affairs, the AAA, American Automobile Association. Welcome.

**STATEMENT OF KATHLEEN F. MARVASO, VICE PRESIDENT OF  
PUBLIC AFFAIRS, AMERICAN AUTOMOBILE ASSOCIATION**

Ms. MARVASO. Good morning. Thank you for the invitation to speak with you today. I am Kathleen Marvaso, Vice President of Public Affairs for AAA.

AAA is a federation of motor clubs in the U.S. and Canada serving over 51 million members. Our members are the prime users and beneficiaries of the surface transportation system. They are commuters and leisure travelers and they use public transit. The system plays a vital role in their lives, and of course it underpins the economic well being of our Nation.

As we look to the next funding bill, we think there is an enormous funding challenge, and we have to contemplate asking users, who have little appreciation for the importance of the transportation system and who are already highly skeptical of how their money is spent, to pay more. This is a time when they are dealing with record-high fuel prices in a tough economy.

AAA's interest in the transportation system has always been focused on personal safety and mobility. We face serious challenges in both regards in terms of the number of crashes, injuries and deaths on our roadways and the increasing congestion which disrupts our lives and our economic activity in this Country.

AAA has traditionally supported a strong Federal role in transportation, especially as it relates to safety. We believe that significantly more investment is needed, and we are willing to consider all options that put the public interest first. Safety is an area where AAA believes that national leadership is critical and a strong Federal role is required, but we do not favor just maintaining the status quo of the program.

More than 42,000 people die each year on U.S. roads. It is about 117 a day, about five an hour, and millions more are injured each year. Despite the very sincere and committed efforts at the Federal and State levels, we are stalled in those efforts to turn that tide. We need to adopt new approaches in what we are doing.

Motor vehicle crashes are a public health threat and they should be treated as such. Like other high-profile public health challenges, smoking and disease prevention, it is expected that the Federal Government has a role in protecting the public health. The same is certainly true in traffic safety.

If the fatality and injury numbers alone are not a strong enough argument for the continued Federal leadership of traffic safety, consider the economic and quality-of-life impacts. This spring, AAA worked with Cambridge Systematics on a first-of-its-kind study of the societal costs of crashes, as compared to congestion. This report calculates the cost of crashes for the same metropolitan areas covered by the annual urban mobility report that is produced by the Texas Transportation Institute.

While certainly not intended to argue that congestion is not an important issue, we found that the societal cost of crashes is a

staggering \$164 billion annually in the urban areas studied, nearly two and a half times the \$67 billion price tag for congestion. These safety costs include medical, emergency and police services, property damage, lost productivity, and quality of life.

So we certainly believe that is a compelling need for a national focus on safety. But here, too, there is a need to re-think the existing approaches. We need increased focus on results and metrics in order to properly evaluate current safety programs so we are investing in those projects and programs that are actually having an impact. We need to employ new approaches to change behavior, which is our greatest challenge. We need to foster more integrated approaches to safety to overcome the limitations of the current Federal structure.

To achieve success, there needs to be increased cooperation and joint planning in all levels of government between health, transportation, law enforcement and in some cases, like drunk driving, criminal justice system professionals. All of these sectors need to work closely to develop new and better ways to address the epidemic loss of life on our highways. It is difficult to imagine what the safety atmosphere would look like without Federal leadership, guidance and oversight.

The Federal Government must also continue to play a major role in collecting and managing data to measure what is working, whether that is in safety, freight mobility, congestion, or other programs. Limited transportation dollars can be applied more effectively throughout the system by increasing the focus on testing and evaluation. We need to move toward more performance-based, outcome-driven approaches in what we do. To accomplish this transformation, we need significant improvements in data collection and analysis.

Now, we recognize that the challenges before you are not easy and the prospect of completely reforming the Federal transportation program is daunting, but this reexamination is long past due and it is imperative to do this if we want the public's buy-in going forward for changes. We are prepared to do our part in educating our members and the public of the importance for the transportation investments we need and for program reforms.

So again I thank you for the opportunity to be here and I look forward to answering any questions you may have.

[The prepared statement of Ms. Marvaso follows:]



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**Testimony of  
 Kathleen F. Marvaso  
 Vice President of Public Affairs  
 AAA  
 Before the U.S. Senate Committee on Environment and Public Works  
 "Future Federal Role for Surface Transportation"  
 June 25, 2008**

Chairman Boxer, Ranking Member Inhofe, and Members of the Committee, I am Kathleen Marvaso, Vice President of Public Affairs for AAA. Thank you for inviting me to speak with you today regarding the "Future Federal Role for Surface Transportation."

As you may know, AAA is a federation of motor clubs in the U.S. and Canada serving over 51 million members. Our members are prime users and beneficiaries of the nation's surface transportation system. They drive approximately 25 percent of all motor vehicles in operation in the U.S. They are commuters, leisure travelers, users of public transportation. And while most of the time they don't give it a lot of thought, transportation plays a vital role in their lives, and underpins the economic well-being of this nation.

The Interstate Highway System brought us a world-class transportation network, and its development tracks with a period of economic prosperity, growth and change unimaginable in the past. But our investment did not keep pace with the maintenance and expansion needs of the system. Today we face an enormous funding challenge, where we have to contemplate asking users who are already highly skeptical of how their money is spent, to pay more – at a time when they are dealing with record-high fuel prices, and a tough economy.

AAA's interest in the transportation system has always been focused on personal safety and mobility, and we face serious challenges in both regards in terms of the number of crashes, injuries and deaths on our roadways, and increasing congestion which disrupts personal schedules and economic activity.

Our organization has traditionally supported a strong Federal role in transportation, especially as it relates to safety. We believe that significantly more investment is needed, and we're willing to consider all options that put the public interest ahead of all else. But we're not in favor of just maintaining the status quo. And judging by the challenges we face, that isn't really even an option.

This committee, and certainly the entire 111<sup>th</sup> Congress next year, has a historic challenge of re-assessing the purpose and structure of the federal transportation program. While continuing with the status quo in the next reauthorization is not acceptable, neither is an automatic, whole-sale change from the structures and practices that are currently in place. We face a serious shortfall in funding, and all of the solutions involve asking users to pay more, whether through higher motor fuel taxes, or user fees and tolls. This at a time when public perception of the federal transportation program is not positive. There is no doubt that the so-called “bridge to nowhere” contributed to the negative view the public holds and that has overshadowed many positive aspects of the last reauthorization. Recent AAA research reveals the public is very skeptical about the transportation program, and wary of all levels of government – not just the federal program. Most don’t believe current revenue is being invested wisely, and many don’t believe any additional investment is needed. This negative public perception constitutes a major hurdle to effecting good policy that serves the nation.

Asking the public to pay more into a system they don’t trust, for roads they don’t fully appreciate, at a time when they are already stretched financially, is going to be challenging. In order for the public to rally behind the kind of investments that are likely going to be needed to address growing demands for transportation and to maintain our global economic competitiveness, we need to do a lot of education, but certainly we also need to acknowledge their frustration and respond with changes that lead to improvements the public can perceive. It will take vision and leadership, and a willingness among stakeholders to make concessions that are in the country’s best interest. President Eisenhower’s Interstate vision of going “coast to coast without a stop light” gave the nation a unifying, common goal and purpose. It’s time to move forward with a new vision of how transportation can provide personal mobility and economic prosperity into the next century. It won’t be easy.

Fortunately, a lot of good work is already being done in this area, by the National Surface Transportation Policy and Revenue Study Commission and others, that should serve as a guide for you as you rethink how the federal program should be structured and funded.

As I have already said, from AAA’s perspective, there remains a compelling need for federal leadership and involvement in the surface transportation program, albeit in a revised and restructured form. Issues that impact the nation’s economic vitality and global competitiveness (like freight mobility and congestion) deserve a national focus. We also believe safety is an area where national leadership is required.

You are all familiar with the statistics – over 42,000 people die each year in the U.S. as a result of motor vehicle crashes. That’s about 117 deaths per day, and nearly 5 every hour. Millions more are injured each year. While concern over the high number of fatalities on our roadways seems to be strong among safety organizations, the research community and in all levels of government, we seem to be stalled in our efforts to save lives. 42,000 roadway deaths is a number that should ring alarm bells nationwide for an urgent call to action. Yet, we’ve come to accept this sort of death toll with car crashes. This has to change.

Motor vehicle crashes are a public health threat and should be treated as such. When you think about other high profile public health challenges – tobacco use, air quality issues, food safety – it is expected that the federal government has a role in protecting the public interest. The same should be true with traffic safety.

If the fatality and injury numbers alone are not a sufficient argument for renewed federal leadership in traffic safety - consider the economic and quality of life impacts. Recently AAA joined with Cambridge Systematics to conduct a first-of-its kind study of the societal costs of crashes as compared to congestion. The report calculates the costs of crashes for the same metropolitan areas covered by the annual *Urban Mobility Report* conducted by the Texas Transportation Institute. We found the societal cost of crashes is a staggering \$164.2 billion annually in the urban areas studied, nearly two and a half times greater than the \$67.6 billion price tag for congestion.

In every metropolitan area studied, from very large to small, the results showed crash costs exceeded congestion costs. For very large urban areas (more than 3 million), crash costs are nearly double those of congestion. Those costs rise to more than seven times congestion costs in small urban areas (less than 500,000) where congestion is less of a challenge. The \$164.2 billion cost for crashes equates to an annual per person cost of \$1,051, compared to \$430 per person annually for congestion. These safety costs include medical, emergency and police services, property damage, lost productivity, and quality of life, among other things.

Although we believe there is a compelling need for a national focus on safety, here too, there is a need to re-think existing approaches. We need an increased focus on results and metrics in order to properly evaluate current safety programs so we invest in those projects and programs that are truly having an impact. We need to employ new approaches to changing behavior – arguably the greatest challenge we face in reducing the staggering number of fatalities each year. We also need to escape the federal agencies silo-mentality and coordinate inter-agency communications more effectively. Cooperation and joint planning at all levels of government between health, transportation, and justice system professionals will help restore trust, create accountability, and deliver success. All of these sectors must work closely to develop new and better ways to address the epidemic loss of life on our highways.

Greater safety improvements can only be achieved by accepting the crisis we're in, marshalling leaders both in the public and private sector, and focusing our national discourse on issues related to the human and economic costs of neglecting traffic safety. It is difficult to imagine what the safety atmosphere would look like absent federal leadership, guidance and oversight. I am not optimistic that states would make safety a priority. There are too many other competing demands.

The National Surface Transportation Policy and Revenue Study Commission, which was tasked by SAFETEA-LU to examine the appropriate federal role for various aspects of the current transportation program, agrees that safety should be a top federal priority. Both the minority and majority opinion stated that safety programs and research needs related to national goals are a proper function of federal government expenditure.

That leads me to one other area that is in dire need of a continued federal focus – data. Without good data, we can't measure what's working, whether it's in safety, freight mobility, congestion, or other programs. Limited transportation dollars must be applied more effectively throughout the system by increasing the focus on testing and evaluation. We need to move towards a more performance-based, outcome-driven approach. To accomplish this transformation, we need much better data collection and analysis in order to understand if we are reaching future national and state mobility and safety goals.

AAA recognizes that the challenges before you are not easy. The prospect of completely reforming the federal transportation program in one year's time makes the challenges associated with getting SAFETEA-LU passed seem minor. But this re-examination is long past due and is imperative if we want the public's buy-in going forward.

If we fail to understand the amount of mistrust the public has in our ability to deliver recognizable transportation improvements and be good stewards of the motorists' dollar, we will fail in reducing fatalities, fail in cutting commute-times, and fail to grow our economy in a way that keeps us globally competitive. AAA is prepared to do our part to educate our members and the public on the importance of transportation investments and the need for program reforms. We also look forward to working with all of you over the next 18 months to accomplish this important task.

Thank you for the opportunity to testify today and I look forward to answering any questions you may have.



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### **Questions for the Record Senator Thomas R. Carper**

#### **Question 1:**

You have called for a "move towards a more performance-based, outcome-driven approach." What kind of standards are we talking about? How might this compare to the current review process for new transit under our New Starts program?

#### **Answer 1:**

AAA agrees with many that the next transportation bill needs a much stronger focus on performance and outcomes so that limited resources are applied to those areas that will have the greatest impact, whether for safety, congestion, pavement quality, etc. To accomplish that goal, national benchmarks/performance metrics will need to be developed and there are likely some parallels to requirements for the transit New Starts program. Similar to New Starts, we believe projects must be justified based on objective criteria, but they also must be evaluated to ensure they meet agreed upon goals.

In the behavioral arena, the National Highway Traffic Safety Administration (NHTSA) and the Governors Highway Safety Association (GHSA) are working to develop comprehensive performance metrics for safety programs. Uniform performance standards will reveal to each state what its own data collection needs are and will help each state evaluate its current programs. Absent these measures, it is extremely difficult for a state to determine exactly how best to apply the most effective solutions. We also believe achieving performance goals should be a prerequisite for any new system providing additional flexibility to state and local authorities.

### **Questions for the Record Senator Sheldon Whitehouse**

#### **Question 1:**

In the hearing, I mentioned the fact that under the current highway authorization we do not distinguish between capital investments and maintenance. Do you think such a distinction would be useful, and that in failing to make this distinction we miss opportunities to more efficiently fund our transportation infrastructure?

**Answer 1:**

As you know, there are currently tremendous strains on the nation's transportation system. Despite the fact that high gas prices have brought about a reduction in vehicle-miles traveled, we cannot overlook the need to expand both highway and transit capacity. We cannot simply tread water and defer needed capital improvements. If we continue to delay, these huge capital projects will just get more expensive as time goes on.

Several proposals have been offered to explore the creation of a long-term capital investment program for infrastructure through the development of a federal capital budget. Recent testimony by the Government Accountability Office and the Congressional Budget Office have raised concerns regarding federal capital budgets and have offered more limited reforms for consideration. We believe a more thorough discussion of the merits of all of these options in the context of the next reauthorization is warranted.

**Question 2 & 3 (combined):**

Would knowing the relative cost-effectiveness of capital spending projects be helpful in determining which such projects to fund? Would knowing the relative cost-effectiveness of maintenance projects be helpful in efficiently prioritizing such projects?"

**Answer 2 & 3 (combined):**

A focus on the issue of cost-effectiveness as criterion for transportation funding allotments is both timely and worthy of consideration. Surely, efforts must be made to curb wasteful spending that feeds the public's perception that transportation dollars are not being invested wisely.

AAA supports moving towards a more performance-based, outcome-driven system and cost-benefit analysis is certainly an important factor in the decision-making process. Yet, while cost-benefit analysis can be one factor in evaluating approval for spending decisions, too many important priorities will be overlooked if we fail to incorporate other metrics.

Safety will remain a key focus for AAA during the next reauthorization and we believe it would be difficult to measure safety benefits strictly through cost-effectiveness. AAA believes an increased focus on results and metrics is necessary to properly evaluate current safety programs. We should invest in those projects and programs that are truly having an impact, with dedicated resources to proven safety countermeasures and roadway improvements.



Senator BOXER. Thank you so very much.  
Our next speaker is Alan Pisarski, an independent consultant, sir.

**STATEMENT OF ALAN E. PISARSKI,  
INDEPENDENT CONSULTANT**

Mr. PISARSKI. Thank you, Madam Chairman. My name is Alan Pisarski and I am honored to be back before you once again. I recall with great pride that I participated in the first Senate hearing on ISTEA, and again on TEA-21 and SAFETEA-LU, so it is really a responsibility that I take very seriously.

My focus today will be on taking the long view on the Nation's travel activity trends and demographic future. We face great challenges. We all know the massive energy costs, housing market in severe distress, and a poorly performing economy. But taking the longer view, perhaps our greatest challenge will be demographic in nature. Senator Moynihan often said, demography is destiny. I think this is never more true than today.

The hallmark of SAFETEA-LU demographically was as we crossed 300 million, Madam Chairman, as you mentioned. The hallmark of this next authorization cycle will be the first of the Baby Boomers hitting 65. There are three impacts of that over time, serving a new work force, serving an aging population, and serving and creating an affluent society. We are going to have to address all of those.

Transportation will have to be a major contributing factor in the enhanced productivity that will make a wealthier society possible and sustainable. Although certainly facing many economic challenges in an increasingly competitive world, America will continue to be a highly affluent society propelled by tremendous technological advantage.

The major surge of Boomers into the retirement years will present key challenges, most importantly including the need to access, to find, skilled workers to serve a growing economy. The critical interactions will be between employers in search of replacements for the retiring Baby Boomers, and amenity-seeking workers looking for the best locations for their families. Employers will go where the skilled workers are or where they want to be.

Connecting distant workers with jobs will be a critical productivity function of transportation. As a result, rural populations will be even more critical to the Nation's economic health and massive metropolitan regions will result.

Looking at these trends through the lens of the current energy crisis seems to lead to almost opposite conclusions, but I think we have to be very careful and maintain our long-term perspective here. Just as the great responses to air quality issues of the past decades were resolved by vehicle and fuel technologies, I believe that what we will see again is where American lifestyle preferences will lead and technology will respond. What we will see change is the calculus—the arithmetic—of housing and transportation relationships.

How does the Federal Government function in that environment? Research in Europe and Asia shows that increasing travel speeds expands the effective labor market size and pays immense divi-

dends in productivity. I think it is something we have to recognize. The great benefits of productivity have come and will come in the future from increased specialization of labor and the technological support that it generates. Increases in the specialization of the labor force will mean that workers will need to be drawn from larger and larger pools over greater distances.

The central Federal role must be to assure that local and State governments recognize that they have the responsibility to serve the needs of interState commerce and international trade as part of their metropolitan mobility planning. I foresee conflicts between metropolitan mobility arguments and the needs of interState commerce.

A major contribution can be made to improving the well being of the society by reducing congestion—I won't dwell on that and others have already mentioned it—and our immense national backlog.

In closing, my proposed goal for you to consider is that transportation's goal is to reduce the effects of distance as an inhibiting force in our society's ability to realize its economic and social aspirations. We must accept that people travel for rational reasons. Trips have economic and social transactions at their end that benefit the trip-maker and the larger society. With a threatened economy, this is not a time to be inhibiting the economic interactions of our society. Rather, we should be seeking to stimulate them.

There were tremendous gains in the last decade among minorities, African Americans particularly, with regard to access to vehicles and access to jobs through that means. Those people on the margins of affordability may have lost ground here in recent times. We should not be trying to adapt ourselves and our economy to high transportation costs. Rather, we should imagine a world where low-cost transportation permits us to overcome the time, energy and dollar costs of distance and visualize how that world might come to be. That should be our goal and our sense of the Federal role in guiding us to that goal.

Thank you, Madam Chairman.

[The prepared statement of Mr. Pisarski follows:]

**TESTIMONY**

**Regarding  
The Future Federal Role for Surface Transportation  
by**

**Alan E. Pisarski  
independent consultant  
before the**

**UNITED STATES SENATE**

**Committee on Environment and Public Works**

**June 25, 2008  
Washington D.C.**

*"Sustaining our high levels of mobility as a society in an energy scarce environment will be the key issue of the decade."*

Alan E. Pisarski,

Annals of the American Academy of Political and Social Science,  
vol. 453; Jan 1981

Madame Chairman, Ranking Member and Distinguished members of the Committee, ladies and gentlemen, my name is Alan E. Pisarski, and I am honored to be invited to testify before you once again to address policy issues in transportation. I recall with great pride that I participated in the first hearing held for ISTEA, again in 1997 in the advent to TEA-21, and in 2002 regarding SAFTEA-LU. It is a responsibility that I take very seriously.

I recall in that first hearing that Senator Moynihan spoke of seeing the New York World's Fair in 1937 as a youngster and how it had a life-time effect on his sense of the future of transportation. I related then that I had been there also, my parents had wheeled me thru that fair as a newborn, and I must have acquired some of the same flavor he did.

We need to look at the next reauthorization period through the lens of the changes likely to occur between now and the end of the cycle. As the next reauthorized period concludes, delivering us midway through the second decade of the century 2015, we will have seen dramatic changes in the first years of the new century. In many respects our world and the transportation system that serves it will be a different place in the future.

In reviewing travel trends and their social and economic determinants I like to use the following list of eight elements of transportation. Now more than ever it is critical to keep them in mind.

1. •COMMUTING
2. •OTHER LOCAL TRAVEL
3. •TOURISM
4. •SERVICE VEHICLES
5. •PUBLIC VEHICLES
6. •URBAN GOODS MOVEMENT
7. •THRU PASSENGER TRAVEL
8. •THRU FREIGHT TRAVEL

Too often we say we are going to talk about transportation and then we forget freight and talk only about passenger travel; then we say we will talk about passenger travel and end up talking about metropolitan commuting. Then we get into an argument about highways versus transit and get lost in the thickets of advocacy.

We must consider both freight and passenger travel, in both their metropolitan and non-metropolitan forms as the list indicates. Many of our issues of the future will be centered in freight-passenger conflicts; and intercity-local interactions.

My focus today will be on taking the long view on the nation's travel activity trends and demographic future and its implications for future travel as context for an assessment of the federal role in surface transportation.

Today we face great challenges – Massive energy costs, a housing market in severe distress, and a poorly performing economy. But, taking the longer view, perhaps our greatest challenge will be demographic in nature – comparable to the astonishing first decades of the 1900's when massive immigration transformed America. Senator Moynihan often quoted Auguste Comte in saying "Demography is Destiny." This was never more true than today. What the federal role might be here and how it might be manifested is a great challenge.

The demographic hallmark of SAFTEA-LU occurred in November of 2006 when the US population passed the 300 million mark. Today we have reached a resident population of almost 305 million and it is climbing at a rate of 50,000 to 55,000 per week. While that seems prodigious, and is, in terms of the economic, social and transportation impacts of adding almost three million persons per year, we need to realize that this still represents a growth rate below one percent a year; just above half that of the fifties. The challenges we face are substantial, but even greater challenges have been met successfully by this society in the recent past. One part of that success will be to recognize we are a growing society, expanding in many ways – in population, in workers, in households, in wealth – and not one that has "arrived" and that can afford to rest. We are a nation that adds a Canada each decade and our necessary responses to growth are never done. If we look at the nations losing population in the world today we realize that our challenges of growth are far preferable to challenges of stasis and decline, which are formidable indeed.

### **The Demographic Challenge**

The hallmark of the next reauthorization period will be the arrival of the first of the baby-boomers at age 65 as this decade witnesses the inception of the phasing out of the working years of the baby boom generation that has dominated American population patterns for 60 years. We have often failed to recognize what a dramatic challenge we have faced over that period and how successfully we have managed it. The coming years may equal the challenges of the great immigration era of the 1900's compounded with the need to address the concerns of an aging workforce population. There will be three dominant demographic challenges:

**Serving a New Work Force** With the major surge of boomers into the retirement years the working age population will be perhaps less dominant in transportation terms than in the past but will present key challenges nonetheless, most importantly including the need to access skilled workers to serve a growing economy. Comprising that work force will be immigrants, retained older workers, greater numbers of working women and others –

diverse in traditional ways – age, sex, race, ethnicity, and skills; – and in less traditional ways – the locations and time patterns of work – traveling in new patterns of geography and schedules.

**Serving an Aging Population** As the first of the boomers reach 65 during this reauthorization period the nation will change and so will the transportation demands placed upon it. Half of all the population over 55 in America today is between the ages of 55 and 65. As they age it will dramatically change travel demands and patterns. Non-work trip purposes will likely become even more significant than they are today.

**Serving and Creating an Affluent Society** With population growing at less than one percent annually and real GDP expected to grow in a range from 2.5 to 3.5 percent the wealth of our society should continue to grow, with the accompanying desire for more travel and the means to afford it. Transportation will not only be called on to better serve an increasingly wealthy society with its greater and different travel demands, but more significantly it will have to be a major contributing factor in the enhanced productivity that will make a wealthier society possible and sustainable. Although certainly facing many economic challenges from an increasingly competitive global economy as well as energy threats America will continue to be a highly affluent society propelled by tremendous technological advantages. These advantages will lead to a “high-value society;” one in which people with high values of time interact in a transportation system with a freight system moving high-value products. Both people and the goods they consume will demand and be able to pay for high levels of safety, mobility, service, and reliability.

### **Geographic Distributions**

For 100 years America has been truly unique in the world with a large land area, a large population, and a society which is both technologically advanced and wealthy. No other nation on earth combines these four attributes, although over the coming 50 years at least two (China and India) will be approaching it. These four attributes will define largely how the population will be distributed in the future, as three of these attributes continue to grow and land area remains stable. It will further define how the nation will serve its people, how it will interact nationally and in the world economy. Its defining characteristics will be:

- A highly dispersed, high-value, globally-engaged, high-mobility society must be envisioned, with some sharp growth differences between regions and within metropolitan complexes.
- The critical interactions will be between skills-seeking employers in search of replacements for the retiring baby-boomer generation and amenities-seeking workers and their families, taking place in a context of greater logistical freedom for both workers and employers to locate where they prefer to be. Connecting distant workers with jobs will be a critical productivity function of transportation.

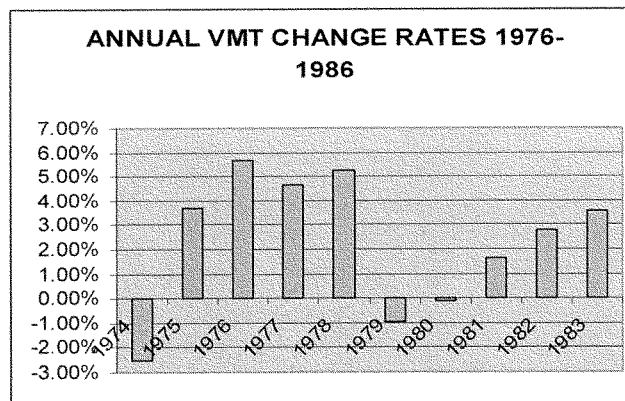
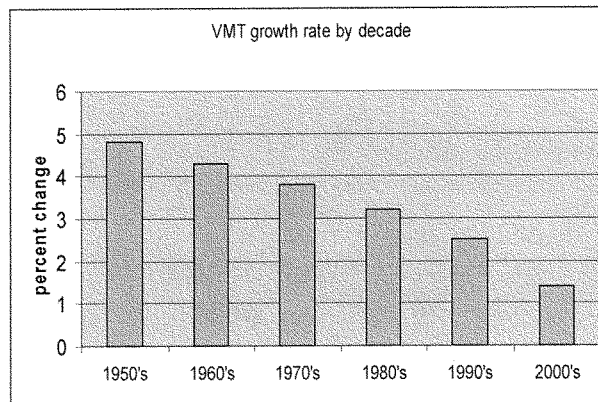
- Massive metropolitan regions will result, with approximately half the US population living in metropolitan complexes of over 5 million. The results will be immense megalopolitan areas with spans of a hundred miles or more. These agglomerations will be increasingly critical to national productivity; and serving their transportation needs will be a major input to that productivity.
- Continued “suburbanization” of people and jobs; with continuing in-fill of existing areas should be expected, despite increased fuel costs, leading to a blurring or, in some areas, complete eradication of metropolitan and non-metropolitan boundaries. This will continue for the foreseeable future as general population migration continues from the metropolitan areas to the rural fringes with households in search of residential amenities and affordable housing.
- Within this metropolitan context community nodes will evolve with a greater emphasis on walking for some local trips.
- Rural populations will be more critical to the nation’s economy; and rural development will follow functional lines based on retirees and amenities-seeking workers: focused around recreation/tourism retirement based areas; or specialized economic development features. America’s rural populations will be the best-connected in the world.
- The transportation result will be high frequency trip-making, of increasing lengths to and from increasingly dispersed origins and destinations abetted by high level communications capabilities.
- Long distance travel (e.g. exceeding 100 miles) for both business and personal purposes will grow dramatically.
- Greater competition will arise between air and auto travel for intermediate trips between the usual ranges of each, roughly 250 to 500 miles. In some corridors rail will play a significant role.

Looking at these trends through the lens of the current energy cost increases seems to lead to almost opposite conclusions. We have to be careful and maintain our longer view perspective here. I conducted policy research in the US DOT during the ‘74 energy crises and again in 1979-80. I was quoted in the *Annals of Social Science* in 1981 as saying: “Sustaining our high levels of mobility as a society in an energy scarce environment will be the key issue of the decade.”

The point is we have had lots of “energy decades” and society adjusts. Just as the great responses to the transportation air quality issues of the past decades were resolved by vehicle and fuel technologies rather than changes in behavior I believe that that is what we will see again where American life style preferences will lead and technology will respond. It is fatuous to believe that because fuel costs \$4 a gallon today that we will all decide to live in apartment houses. (I was just in Europe and paid \$8 a gallon and was immediately stuck in a forty minute traffic jam of commuters driving home from work—and Europe continues to suburbanize.) Remember there are more Americans living in trailers than in apartment houses with 50 units or larger. What will be changed will be the calculus – the arithmetic – of decisions in the housing-transportation trade off. Typically, householders base their decisions on the total cost of housing plus

transportation and usually the exurban/rural household wins in that trade-off. That arithmetic is changing and we will see how it manifests itself. Much has been made of the declines in vehicle miles of travel (vmt) in recent months. Three points are important in that:

1. We have been seeing declining vmt growth rates since the fifties. (Chart 1)
2. We saw such declines in the '74 energy crises and again in 1979-1980 with growth rates resuming after adjustments to the new fuel costs. (Chart 2)
3. It is very difficult to disentangle the declines due to changing demography from the slow down in economic growth, housing problems and from the fuel cost spike.





We must assure that the opportunities exist for householders to live the higher density life style with walking and transit opportunities if they choose but we cannot coerce that life style. Most likely it will be younger and older Americans who take advantage of that option. We must resist the sense that raising the costs of the ways American's want to live will lead to a better world. Trying to make them want what we might want them to want is a bankrupt public policy. Accepting consumer sovereignty is the fundamental basis for the federal role.

Many of the transportation implications derivable from the population trends described here need further delineation.

- **Community and Neighborhood Design** – There is nothing in the foregoing discussion that indicates that development must take the form of widely dispersed housing. There will be interest in, and pressures for, more clustered development that create walking opportunities. Given that much work will be addressed by those working at home or working on flexible schedules the opportunities will exist for more responsive patterns of development at the neighborhood level while the entire metropolitan area is more broadly dispersed. The commute, at less than 20% of trip making, will be more limited in its influence on how areas are structured.
- **Transportation and Productivity** – As employers and suppliers reach out farther and farther to obtain the needed skills and supporting goods and services they require, the ability to sustain the mobility of people and goods will be crucial to our economic effectiveness and productivity. Communities of interaction will grow up encompassing the entire nation that will be served by communications advancements but that will also further the needs for transportation.
- **Congestion and Capacity Needs** – the immense national backlog of needed capacity improvements is the critical factor affecting metropolitan economies for the immediate future. Given the relatively benign growth rate levels and the substantial affluence of the society, future needs can be met reasonably once the present backlogs of capacity, maintenance and reconstruction are overcome.

### **The Federal Role**

How best then does the federal government function in this environment. The answers are not immediate but there are some useful guiding concepts. Federal roles can vary from exhortation to outright ownership and control. The balance has been struck over the years in transportation as we have moved from economic regulation to environmental and social regulation and toward varying levels of participation in funding and control. The emphasis has been and should remain on private sector market-based decision-making wherever possible. The boundary between private and public should be assiduously recognized and scrupulously guarded. This does not mean that there shouldn't be cooperation and joint actions to serve the public but that the costs and benefits must be weighed in the public arena with maximum public oversight.

Addressing the key demographic questions of

- Providing Access to a Skilled Work Force
- Abetting and Serving a Wealthy High Value Society
- Serving an Aging Population

In the light of our sense of the federal role leads to the following.

#### **Providing Access to a Skilled Work Force**

It is fundamental that oversight and support of interstate and international commerce are well within the appropriate purview of the federal role. Public safety and security also easily fit into that environment. Other speakers here are addressing the topic of freight flows and safety and so I will confine my remarks largely to focus more on passenger travel. Assuring access to the work force is among the most fundamental elements of assuring a sound and productive economy. This however begins to get into the scale of metropolitan and local interaction. The Europeans use a term "subsidiarity" that indicates that actions should always be taken at the level of government closest to the problem. The central federal role here must be to assure that local governments recognize that they have the responsibility to serve the needs of interstate commerce and international trade as part of their metropolitan mobility planning. The prospects will grow for situations where states and the federal government will need to overrule central cities and other metropolitan jurisdictions plans in order to protect interstate commerce corridors.

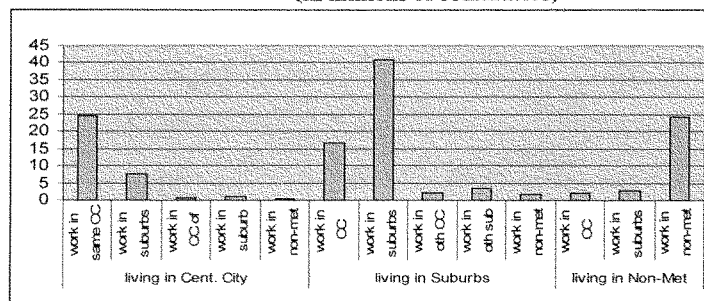
Work in Europe and Asia shows that expanding the effective market size pays immense dividends. A travel speed increase of 10% led to a 15-18% increase in labor market size and just a 10% increase in labor market size could increase productivity by around 2% -- an immense benefit. The recent very well organized and supported Eddington study in the UK focused heavily on assuring continued broad spread "catchment" areas for workers which were seen as key in a nation of large congested metropolitan areas that were responsible for high percentages of national output. The report strongly emphasizes support for "deep and productive" labor markets and the importance of productivity enhancing transportation investment that are environmentally responsive as well.

The great benefits of productivity have come and will come in the future in this society, and all modern societies, from increased specialization of labor and the technological support that it requires.

The central reality of future metropolitan areas will be the continued expansion of the suburbs – not merely in population but in jobs and other attributes such as retail sales as well. In metropolitan areas over a million in population, where about 54% of the nation's population reside, 92% of the population growth in this decade so far has been suburban.<sup>1</sup> In many areas the central cities have become “too important” for jobs and will focus their roles on being centers of culture, recreation and public functions.

Current commuting flows reflect the search for skilled workers. These attributes are shown in the figure below and should continue to follow this pattern as very different growth rates continue. The increasingly crucial nature of the interaction of rural areas with metropolitan areas and between metropolitan areas is revealed by the figure in Chart 3. Note that the work force that lives and works in rural areas roughly equals those who live and work in central cities.

**Figure Metropolitan Commuting Flows 2000**  
(in millions of commuters)



As a result there will be a new worker dynamic operating in the new metropolitan complex. The recent study<sup>2</sup> prepared by the National Chamber Foundation for the Americans for Transportation Mobility coalition summarizes the future worker market in this way:

- *It will be a sellers market for workers resulting from decline of persons of working age. Employers will go where skilled employees are or want to be. Much of this will center around universities and research centers. This, coupled*

<sup>1</sup> The tragedy in New Orleans actually distorts these data enough so that the suburban growth share drops to 90% without the New Orleans metropolitan area.

<sup>2</sup> The Transportation Challenge – Moving the U.S. Economy, NCF of the US Chamber of Commerce, 2008

*with more affluent, amenities-seeking workers will abet the shift to the South and West.*

- *Employers will be more forthcoming re flexibility regarding hours and days of work in order to retain/obtain workers.*
- *Both center cities and suburbs will move toward balance in jobs and workers (i.e. fewer jobs per worker in cities; more jobs per worker in suburbs) but this will not change the need to commute significantly due to persisting skills mix differences.*
- *Increases in specialization in the labor force will mean that workers will need to be drawn from larger and larger worker pools over greater distances.*
- *Employers will continue to shift outward to be near workers, permitting workers to shift even farther out in search of rural amenities and lower cost housing if they choose. The attachment of immigrants and minorities to the center city has been broken.*
- *Multi-worker households, frequent job changes, housing preferences, and the general friction of changes in residence will generate long work trips.*

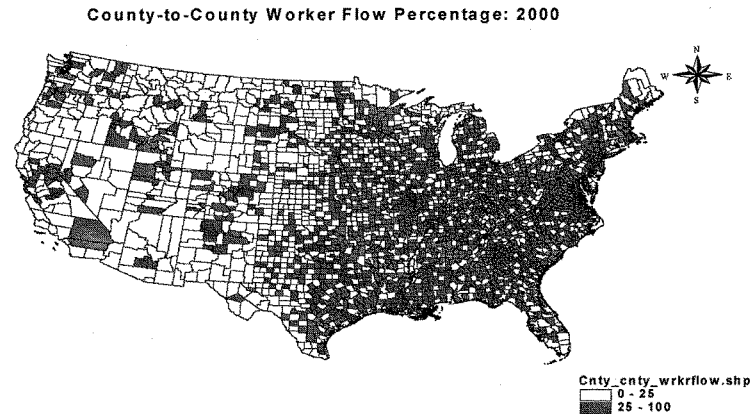
The resulting pattern could be summarized as greater freedom among workers to live where they want and work where they want but where they will have to accept the time and cost penalties associated with longer commutes.

Why won't workers cluster around their jobs as they did in the 18<sup>th</sup> and early 19<sup>th</sup> century? A number of very forceful reasons:

1. We are not wedded to a job for life anymore. The average turn-around in jobs is measured in just a few years. It is expensive to move every time one changes jobs uprooting one's family; and self-defeating as well if you may be moving back again soon.
2. About 70% of workers live in households with other workers. Whose job will they live next to?
3. workers work in much smaller units today so that there is no big factory gate to live next to.

It will be the challenge of transportation mobility to assure that the broadest array of worker opportunities are available in metropolitan areas. This will be a critical part of assuring national productivity. Largely this will mean providing effective road access, perhaps in the form of beltways, to permit long distance work opportunities. Greater opportunities for working at home and more flexible work schedules would all have immediate value. Better car-pooling opportunities need to be instituted. Again these actions are low cost with immediate energy savings. Approaching 30% of all workers leave their home counties to work each day. In the accompanying map are shown the counties that export more than 25% of their workers everyday. In the states around the Washington DC area it is closer to 50%. The really challenged households will be those lower income two-worker households (perhaps junior federal employees) pushed to the edge of the metropolitan region by housing costs or a search for good schools and safe neighborhoods, traveling long distances to disparate job sites. The threat to the higher levels of automobility and use which has expanded access to jobs is a great loss. There is

a last-in first-out phenomenon working here. There were tremendous gains in African-American household access to personal vehicles in the last decade but who may be just on the margins of affordability which could be lost.



Transit may have two significant roles: helping provide access to the center from longer distances, (think Baltimore to Washington) much like what commuter rail systems now provide; and providing broader opportunities for lower income workers to access job and other social opportunities. This could mean more access to suburban jobs for center city workers and more access to broadly distributed jobs than heavy corridor investments can serve. The great mega-corridors for transit now exist and we must assure that opportunities to use them to live or build businesses near them are not impaired.

None of this is to diminish the prospective opportunities providing walking access but to recognize that its prospects – given the age consist of the population and the nature of origins and destinations are limited. These are fundamentally areas of local responsibility. Walking has diminished in its role, particularly in work travel for the last 30 years. It will not be a victory if people who have just attained access to autos or transit are forced back to being constrained to finding jobs they can walk to. (e.g., the decline in walking to work in rural areas must be seen as progress.)

#### **Serving an Aging Population**

The nation certainly owes great debts of gratitude to its aging population. How best to serve them will be a crucial social question over the coming years. In part this will be answered by some of the other points made here. We will need the continued skills of the aging workforce and we must assure that there access to continued employment, if

needed or desired, is not impeded for lack of transportation. Moreover it should be recognized that work travel is a small and declining part of travel and with this group an even smaller share. It is the access to services – medical, government and other institutions that are likely to be key. Social and recreational travel are key features of their interest as it is with the rest of the traveling public.

This is a complex subject that can be helpfully viewed in stages both in terms of levels of income and levels of age and the ability to drive or to walk significant distances or to wait on a corner for a bus. Our present collection of agencies addressing these problems seem too disparate, overlapping and uncoordinated. A major federal review of these programs would be in order.

### **Serving an Affluent Society**

The point has been made above that the role for transportation is to abet and support, and certainly, at least, not retard, the economic growth of the US. Part of that has been addressed above in regard to assuring access to a larger job-worker market-shed. Certainly the main contributing factor that need to be addressed is traffic congestion that wastes fuel and pollutes the air and impedes economic and social interactions. A major contribution can be made to improving the well-being of the society by reducing congestion. As the value of time increases for people and goods their judgment of the effectiveness of the transportation system will change with it. Conversely, using congestion as a tool in the hope of changing public behavior must be specifically renounced in any useful construction of a future federal role or use of federal funds.

The connection between un-congested transportation and housing values is a key consideration. At this time with housing in the doldrums improved access to housing can make housing more affordable for more people and help preserve the value of home sites.

Another factor linked to aging to consider is that as the baby boomer segment of society retires the numbers of the population that will have the discretionary funds and discretionary time for travel and tourism will grow immensely. This is to be supported at least in partial recognition that it is part of the good life but also for its immense economic benefits to the receiving regions. Tourism is among the top 10 employers in 48 of the fifty states. It is now generating immense positive balance of payments income to our national accounts with the surge of foreign visitors to our shores. This adds to life's enjoyment and enhances world understanding and appreciation for the cultural and natural gifts of our nation.

## Specific Federal Roles

- Provide better data and research needed for more effective business and government planning. This is a central indisputable federal role.
- Develop the monitoring capabilities to know what is happening in transportation costs and services on a timely basis. (In 1974 I was reporting fuel costs and usage levels and consumer behavior attitudes on a weekly basis to the White House – we are not close to that today)
- Adopt the performance-based approaches being espoused by many, notably the National Surface Transportation Policy and Revenue Commission. Make certain that performance measured includes national goals of enhanced interstate commerce and recognizes the primacy of national economic and social progress.
- Recognize that the Highway Trust Fund has been the central feature of the federal surface transportation role for more than 50 years. As a guiding concept the dedication to the user pays principle and the integrity of the fund is paramount. Protecting the fund from other prospective uses is central to maintaining credibility with the public.
- Funding by the federal government has ranged from very high to low to non-existent over the years in the different modes with hard to discern differences in results. It is possible to have an effective federal role without dominant funding. Transit in Canada for example is purely a local responsibility with no significant federal program yet Canada's metropolitan transit systems are the envy of American cities. The federal role in the national road program has varied from very high to very limited more recently without a particularly sound basis for the levels.
- Given the present challenges of International competition a greater focus by the federal government on assuring that our transportation system enhances our competitiveness rather than being a brake on progress is central to national concern.
- A key concern is the need for focus of the federal program. It must be focused much more on clear national interest targets rather than acting as a broad series of general support grant programs that has diminished its effectiveness and the public's respect for the programs. When almost anything can be funded by the federal programs then there is no focus.

In closing, my goal for transportation, and my proposed goal for you to consider, is that Transportation's goal is to reduce the effects of distance as an inhibiting force in our society's ability to realize its economic and social aspirations.

We should not be trying to adapt ourselves and our economy to high transportation costs. Rather we should imagine a world where low cost transportation has permitted us largely to overcome the time cost, energy costs and dollar costs of distance and visualize how that world might come to be. That should be our goal and our sense of the federal role in guiding us to that goal.

Rather than celebrating the recent decline in vmt as some kind of victory we must examine the changes and recognize what was lost and not just what might appear to have been gained. How many trips shifted to carpools or transit; or more likely; were shortened in distance, or combined into a time and energy-saving trip chain; or worst of all postponed or deferred. We must accept that people travel for rational reasons. Trips have economic or social transactions at their ends that benefit the trip-maker and the larger society. With a threatened economy, this is not a time to be inhibiting the economic interactions of our society – rather we should be seeking to stimulate them. Those whose goals for transportation can be met by people staying home need to rethink their goals.



**Response to question 1 of Senator Thomas R. Carper**

There is a strong impetus among many, notably the recent Surface Transportation Commission, for a more performance-based, outcome-driven approach to programs. While almost all agree it is desirable, it is much easier to say than to do. We will see an extensive struggle to even come close to something effective. It will take years. One way to stimulate such a capability would be a performance bonus to states (without earmarks) that achieve the best performance results against targets such as those identified below. It would take very little in percentage terms, maybe a 5-10% bonus, to stimulate active interest.

We have tended to avoid the outcome-driven concepts in reviewing projects. Among those that I have raised in the past that seem obvious:

1. what portion of the problem am I solving for what share of my resources?
2. how many hours of congestion delay are reduced per million dollars invested?
3. How many tons of Petroleum/CO<sub>2</sub> reduced per million dollars invested?
4. How many lives saved per million dollars invested?

Currently, it is almost impossible to see a rank-ordered list on any of the above anywhere in the transportation planning process much less see people actually make decisions based on it. a great benefit would be for US DOT to publish a generic ranked list of kinds of projects and their rank for States and other facility planners on which to base their efforts. Specific research would be needed at the project level to modify that ranking. Such a list was published once for CMAQ by FHWA's Office of Environment but not repeated.

This leads to some sense of the kinds of standards that need to be employed in the future. They need to be consistent and the same for all projects evaluated. The basic measures don't always have to include dollars in the denominator but it will be generally the case. Data will be a major issue. Most MPO's and States are very weak in the kinds of refined, detailed data required. The current DOT statistical system is no help at all. If we expect to see success we are going to have to fund the data collection that makes it realistically possible. Simply requiring reporting of success or the lack of it would be very powerful. The Netherlands' legislature has an almost standard rule of requiring reporting after 2 year on results on any program enacted.

A small example of the limitations transportation planners face given today's weak data collection: Many projects tend to shift commuters back and forth; carpoolers to transit and back with small if any reward. I use a concept in *Commuting in America III* that sums carpooling and transit users as a percentage of all commuters – the result: Boston and Houston look a lot alike, with very different constituent elements but the same totals. Very few metropolitan areas in the country exceed 20% of commuters using carpooling and transit combined – maybe 3 or 4. Few areas have such data.

At present we have data for 2006 re transit's and carpooling's share of travel. Next month we will have 2007 data but nothing monitoring present travel patterns at \$4 a gallon. We will first see that information in late 2009 after reauthorization. I had such data on a weekly basis for the White House in 1974.

Many states have done exceptionally fine jobs in developing their own in-house performance measures, Washington and Maryland for example, but what is far more difficult is to plan, fund, program and evaluate based on those measures. Congress should reinforce the State's efforts and that of metropolitan agencies, without specifying the detailed measures to be employed but rather providing guidance and perhaps requirements on the areas or categories of performance to be addressed such as those listed. Congress should not have a federal process that evaluates the benefits and costs of individual projects in state or metropolitan programs like the New Starts approach. As we know many of the New Starts projects selected don't always turn out the way the benefit cost studies would indicate.

This is a very brief response to a very difficult array of questions. The very short answer is that there are very few performance management programs that can't be gamed especially when money is involved. I have asked: what DOT Administrator upon leaving can say: 1. did things get better or worse during my tenure; 2. what do I mean by better or worse and; 3. did I have anything to do with their getting better or worse?

**Response to question 2 of Senator Thomas R. Carper**

I have stated on other occasions that the American people have no obligation to live in ways that make it convenient for government to serve them. They do have an obligation to pay for whatever costs their living choices generate. The question tends to assume that people living in the suburbs want to go downtown to the metropolitan center. This is typically not the case. Today the great majority of travel is suburb to suburb in all but the smallest metropolitan areas. Jobs will move to be near workers rather than the other way around.

Having said all that there is nothing to indicate that people may not choose to cluster in more dense environments in the suburbs. We should assure that the opportunities to opt for those choices can be served and are not precluded by policy: local, state or national. But we should abjure coercive policies that would attempt to force people into more dense living conditions. The density at which people choose to live is among the most fundamental attributes of living choice. Many older persons are moving outward rather than inward because of housing costs, but they may prefer to live in clustered developments far from the center where walking options exist. Transit in the suburbs must be responsive to these realities with jitney/van type services that provide low cost, low density, low pollution alternatives.

As my testimony indicates the great issue will be assuring high access over broad metro areas to reach skilled workers. This may require long distance transit options like commuter rail or time phased buses at, hopefully, lower costs.

To be remembered is that commuting is less than 20% of travel and declining. We cannot waste time and resources simply focusing on highway/transit issues for the work trip. Its really a very small part of the issues we need to address.

**Senator Sheldon Whitehouse**

**1. In the hearing, I mentioned the fact that under the current highway authorization we do not distinguish between capital investments and maintenance. Do you think such a distinction would be useful, and that in failing to make this distinction we miss opportunities to more efficiently fund our transportation infrastructure?**

**2. Would knowing the relative cost-effectiveness of capital spending projects be helpful in determining which such projects to fund?**

**3. Would knowing the relative cost-effectiveness of maintenance projects be helpful in efficiently prioritizing such projects?"**

**Response to Question 1 of Senator Sheldon Whitehouse**

This was an intriguing question when raised in the hearing. It was a subject of great interest decades ago when the issue was to recognize the distinction between investments and operational or maintenance spending. Federal programs never make that distinction. The GASB 34 process requires infrastructure capital asset reporting of States and Local Governments but has seen limited public explication. The US DOT should assure full GASB 34 compliant reporting regarding the total asset value of our investments in all transportation infrastructure and reporting of whether those assets have been expanded, sustained or permitted to deteriorate in value; perhaps as biennial reporting as part of the Condition and Performance Reporting process. the C&P report should be considered the operating manual for the Committee.

**Response to Question 2 of Senator Sheldon Whitehouse**

Unquestionably this would be extremely valuable. Given the costs of doing such work we probably need to restrict the threshold at which this is applied to projects over 100 million dollars or some similar level. The procedures to be employed need vetting by national authorities – AASHTO or the TRB, otherwise very wasteful exercises will ensue. In many cases the skills are missing at the state, metropolitan and local level to address these tasks. There may be occasions where projects that fail a cost/benefit or cost-effectiveness test may still be desirable but the onus of justification would lie with the proponents of such undertakings. A simple and short answer to many such questions would be “would they do it with their own money?” One mechanism would be to employ some of the requirements under the TIFIA loan requirements for projects over \$100 million.

**Response to Question 3 of Senator Sheldon Whitehouse**

It is very difficult to imagine how one could construct cost-effectiveness measures for individual maintenance projects – more likely different program spending methods would be susceptible to such an analysis. This is being bundled into the new concept of Asset Management which relates maintenance, rehabilitation and reconstruction needs in many states. I know that Utah and Michigan, for example, have benefit cost-like systems in which they evaluate overall spending approaches. Utah actually selects projects using a benefit-cost ratio developed from indexes. Important in their efforts is that they can forecast expected future conditions (improvements or declines) given varying spending approaches. The great conundrum today for states and other facility owners is between fixing the “worst first” or addressing the needs of elements that are just beginning to deteriorate, where timely investment provides great potential for deferring future high cost repairs. This will often seem to conflict with the public’s views of needs in this area. It is often an option that states cannot afford. In general at this stage I would say that cost effectiveness can be best applied to prospective programs or policies such as private vs public approaches or other timing approaches rather than to specific projects but continued research would be desirable.

**Senator James M. Inhofe**

1. Mr. Lovaas suggested at the hearing that heavy transit investment and higher fuel prices will move people out of their cars and onto bikes, trains and sidewalks. How much stock should be put in his model of controlling emissions by curtailing auto use?

2. Over the last 25 years we've seen the traffic problem in our nation's cities – and, increasingly, our suburbs and towns as well – dramatically worsen, despite dramatic increases in the amount that government has spent on our highways and public transportation. Public transportation can play a role, but it's naïve to think that mass

transit alone can solve our congestion problem. What new approaches should the Federal government pursue to respond to our nation's congestion challenges?

3. When the Federal-aid highway program was created 50 years ago, it had a clear purpose: creating a network of limited access highways that connected our cities and facilitated the interstate flow of trade and travel. Today that connectivity has been achieved, but now we find ourselves funding countless activities. We are trying to be all things to all people. What would you recommend that we set out as a clear, focused Federal role in the upcoming reauthorization? Don't we need to articulate what are, and are not, National surface transportation priorities that demand Federal support?

4. Many criticisms of the current federal program are based in its lack of a results oriented focus. How would you recommend that Congress structure a performance based, outcome driven approach in order to yield a greater return on our highway investments?

5. How do we address the critical revenue shortfalls experienced by public transit, when evaluating the financial capabilities of federal system funded by user fees?

**Response to Question 1 of Senator James Inhofe**

The recent TV coverage of the declines in vmt clarify this issue rather well. It is an opportunity to introduce a sense of scale in the discussion. ABC Nightly News Monday Evening, in which I participated, (I can send the tape) after the announcement of a 10 billion vmt decline in May indicated that travel was down 40 billion miles and that transit was seeing a surge of 88 million new passenger miles in the year to date. That means something like 1/1000 of the change in highways was registered in transit increases, given about 1.7 or 1.8 passenger miles per vehicle mile. The decline in vmt in May was about twice annual transit usage. We would need 20 new national transit systems equal to what we have now to serve the decline in vehicle travel so far this year. Suffice to say that we cannot do it in cost or design or time or any other way. We don't have 20 other New Yorks to provide such services. While we all like to think that transit and bicycling can respond to our needs it is really a case of horse and rabbit stew. They can make a contribution but their scale potential is typically trivial in most cases. Given the aging of the population and the prevailing weather conditions in most parts of America, these are non-starters. Needless to say they have nothing to contribute freight movements or service vehicle activities. Where there is great potential is in working at home as a full time or occasional activity. This can be done almost overnight without any expensive infrastructure (perhaps a weakness). This is a positive trend that Congress can support rather than trying to fight other trends that are overwhelming. All the forces at work in the society are taking us in that direction. A 4 day 10 hr work week is a 20% fuel and time saving.

As I stated in my testimony, just as in improving air quality, American life style preferences will determine our future behavior and technology will solve the problems. There is a tendency for options to fall into the technical fix approach versus changing people's behavior alternative. Many public policy prescriptions tend to fall into favoring changing people's behavior, perhaps because we don't have faith in or understanding of technological opportunities, or maybe we just like to coerce people to behave in ways we think they should. In 10 years we will likely all be driving vehicles of 35-40 mpg, or higher, vehicles or alternative fuels and the idea of forced walking, biking will be set aside – perhaps until the next time it's "the solution" to a new problem. A key concern for the Committee should be how to help accelerate the fleet turnover.

**Response to Question 2 of Senator James Inhofe**

While we can support transit and other options we must subject them to rigorous testing before we make claims re their utility in addressing congestion. There are some places such as Manhattan where they may be the only answer but we have just one Manhattan and no other comparable situations in America. We should welcome transit alternatives that can succeed in a comparison of *hours of congestion delay reduced per million dollars* test with highway alternatives. In almost every circumstance we will find that only highway expansion can address highway congestion. If we choose to consider energy or CO<sub>2</sub> comparisons we should do so recognizing the fuel efficiency profile of the future private vehicle fleet in 10 or 20 years in comparison to the potential for transit

improvements. Studies have shown that building rail transit takes hundreds of years to recover the energy costs in the construction. I would propose much greater local financial participation in big transit starts. Having their own funds in the process will focus local preferences and decisions.

**Response to Question 3 of Senator James Inhofe**

Our hearing was to address the federal role and nothing can be more important than this. My sense of that role consideration at this time is that we have an urgent need to focus the program. Currently one can fund almost anything with federal program funds. When everything is federal then nothing is federal. The "big tent" philosophy has shown that the program will spread out until everything is eligible for federal funds. The fundamental elements of national interest are:

1. National Defense
2. Interstate Commerce
3. Safety and Environment
4. Data Collection and Research

This would mean protection, preservation and expansion of the NHS highway system and its main element the Interstate, including the STRAHNET defense system. The available federal funding can just about address these needs if the other elements of the program are set aside. The main reason we have such pressure on donor donee issues is that the program has lost national purpose. A state that sees that their funds are being spent in other states on purely local interests rather than true national interests will naturally argue to get their money back so they can spend it themselves on their local interests.

**Response to Question 4 of Senator James Inhofe**

I have responded to a similar question from Senator Carper elsewhere (please see my response to his question 1) and so will simply add to that by saying that an approach that awards better performance would be highly desirable but difficult to construct and implement with balance and fairness. Many states and other agencies have constructed excellent performance monitoring systems but none that I am aware of integrate it into their decision-making processes, especially the programming of projects. A scoreboard of states with and without such systems would be helpful. There is a peer review process in place with TRB and AASHTO that has been very beneficial in this area and that could be employed to expand state-based performance-driven approaches. A requirement for public reporting of results and before and after effects that would hold projects up to public scrutiny would be very powerful. This would go a long way in re-establishing some faith in the effectiveness and integrity of the state, metropolitan and federal programs.



**Response to Question 5 of Senator James Inhofe**

The present level of federal funding is barely adequate to support highway needs much less serve to support transit and other local concerns. I would propose a separate program for transit funded from general revenue to serve local interests and needs, and focus the highway program on strictly national roles and purposes. There seems to have been little focus on improving the financial effectiveness of transit operations and it will probably not happen as long as federal or state funds can be brought to bear to support the programs. Programs need to be examined in terms of their beneficiaries. Transit programs that aid low income households access to jobs and social services would earn high marks in my view in contrast to subsidizing high income suburban workers. In particular, while commuter rail has benefits in terms of regional access to workers, present users are typically twice the income of the average person in a metropolitan area. It is unclear why their travel should be subsidized.

Senator BOXER. Thank you so much.

Our next witness is Daron Lovaas, Vehicles Campaign Director and Smart Growth and Transportation Program Deputy Director of the Natural Resources Defense Council. Welcome, sir.

**STATEMENT OF DARON LOVAAS, VEHICLES CAMPAIGN DIRECTOR, AND SMART GROWTH AND TRANSPORTATION PROGRAM DIRECTOR, NATURAL RESOURCES DEFENSE COUNCIL**

Mr. LOVAAS. Thank you, Madam Chairman, and thank you, Ranking Member Inhofe and other members of the Committee for having me here today.

For the past half-century, the Federal role in transportation has been substantial in helping shape the Country's development patterns and transportation options in ways that are beneficial, but also costly. It supports a huge asset class. The built environment is 35 percent of the U.S. economy and many consumers get their piece of the old American dream, specifically a house, a car, a lawn.

The dark side of the old American dream is that air and water pollution problems get worse in many regions due to increasing vehicle miles of travel. Government fiscal resources are stretched to cover far-flung infrastructure, and household budgets groan with strain as gasoline hits \$4 a gallon and consumers face a dearth of transportation alternatives in their neighborhoods.

The next 50 years are likely to be quite different due to at least three drivers: a radical demographic shift pushing up demand for development alternatives; growing concern over oil security; and the urgent need to constrain carbon dioxide pollution.

First, demographics are destiny. In the decades from 2000 to 2025, there will be more than 30 million new households added to the Country. Nearly 90 percent of them will be child-free and one-third will be single-person. This is a big change from the last 50 years. The aging of the Boomers will change things, too, as from 2012 to 2025 the ranks of senior citizens jumps by an eye-popping 1.5 million a year. Nearly 50 million new homes will be built from 2000 to 2025, and the different preferences of empty-nesters, nonesters and singles mean that demand is forecast to outstrip supply for attached and small units, with excess supply of large-lot units.

Another change agent is concern over oil addiction. We use 20 million barrels a day, a quarter of world consumption, yet hold only 3 percent of world reserves. Transportation is responsible for the lion's share of consumption and is 96 percent reliant on oil. We are in the middle of the largest transfer of wealth in history, spending more than \$500,000 daily on oil imports. Oil accounts for more than half our trade deficit. We must drive down the oil-intensity of our economy and our transportation sector.

The third driver is the pressing need to cut heat-trapping pollution. Global warming harms species, water resources, public health, and coastlines. Unchecked, it would cost the economy trillions of dollars a year by the turn of the century. Boosting energy efficiency in transportation must be a part of a global warming action plan.

In short, there needs to be a strong Federal role to help shape the future as it helped shape the past, with at least five components. First, strategic investments in system improvements based

on performance goals, building a bridge to somewhere, rather than nowhere. Goals must include cutting pollution, saving oil, providing travel choices besides driving, minimizing the overall environmental footprint, repairing existing facilities, making our economy more competitive and equitable, and reduced fatalities.

Second, we need a national strategy for freight traffic. Increasing trade means more container ships, more trucking, and more rail traffic if there is no national plan for managing growth with an eye to efficiency and environmental protection.

Third, we need a world-class rail system to complement our highway system. A multi-modal system connecting cities would help route the coming wave of freight and passenger traffic, easing congestion, saving oil, and cutting pollution.

Fourth, we need to empower local governments, which is where most people and economic activity are located. Sixty-five percent of Americans live in metropolitan areas. Metropolitan areas generate three-quarters of the Nation's economic activity and local governments own three-quarters of our roads. But just 5 percent of Federal dollars go directly to localities. That deserves a boost.

Fifth, we need incentives for local governments to reform development rules. Demographic changes mean there is already pent-up demand for development that is walkable, with a smaller environmental footprint than traditional car-dependent suburban sprawl. Yet even the idyllic corner store is illegal in most of the Country. Almost 80 percent of developers say they would build walkable products if allowed. Consumers deserve more choices.

The trust fund is also suffering from a shortfall and with high energy prices the gap will only get wider. Road pricing is proven to reduce congestion, provide important revenue for transit projects, and cut carbon dioxide emissions. Another tool, pay-as-you-drive insurance, doesn't provide public revenue, but offers traffic and pollution reduction benefits and would save most consumers cash when they need it most, about \$500 a year.

Last, but certainly not least, I commend the Committee for including investments for States, cities and transit in the climate bill that was considered just a few weeks ago. The climate bill is a repair kit for our environment and the transportation bill, which actually is also an energy bill deciding the future of transportation energy, adds indispensable tools to the kit.

I look forward to working with the Committee to hone those tools, transforming transportation into a low-carbon energy-efficient system more suited to our changing demographics.

Thank you.

[The prepared statement of Mr. Lovaas follows:]



**Testimony of Deron Lovaas  
Vehicles Campaign Director  
Smart Growth and Transportation Program Deputy Director  
Natural Resources Defense Council**

**Future Federal Role for Surface Transportation**

**Senate Environment and Public Works Committee**

**June 25, 2008**

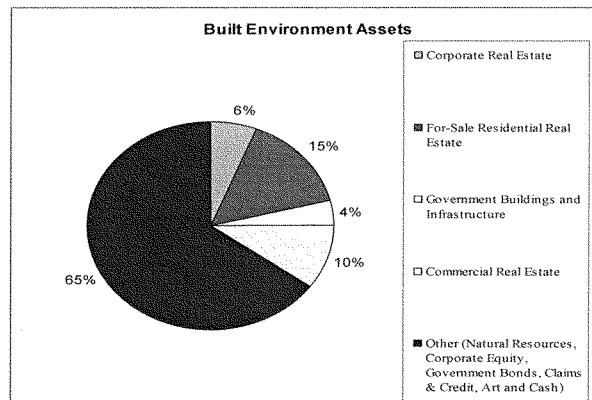
Highlights

- The federal role in transportation has been substantial, particularly in the last half-century. This helped to shape the country's development patterns and transportation options in ways that are beneficial but also increasingly costly.
- The next fifty years are likely to be different, for at least three reasons: A radical demographic shift with growth in demand for development and transportation alternatives, growing concern over oil security, and the inevitable and urgent need to constrain carbon dioxide emissions.
- There needs to be a strong federal role to help shape the future (as it helped shape the past), which should at least include five components:
  - Strategic investments in high-performance system improvements which are judged based on:
    - Performance measures;
    - Prioritization of repair of the existing system;
    - Development of a strategy to address growing freight traffic; and
    - Provision of more travel choices by a rail system to complement the highway system.
  - Empowerment of local governments, which is where most people and economic activity are located and which tend to invest in environmentally beneficial transit projects, by providing a greater percentage of federal funding directly to metropolitan regions;
  - Incentives for local governments to reform development rules, unleashing more choices for consumers in the marketplace for real estate;

- Removal of barriers as well as new incentives for adopting innovative revenue-generation programs which also send salutary price signals, saving energy and reducing pollution; and
- Robust linkages with federal climate policy.

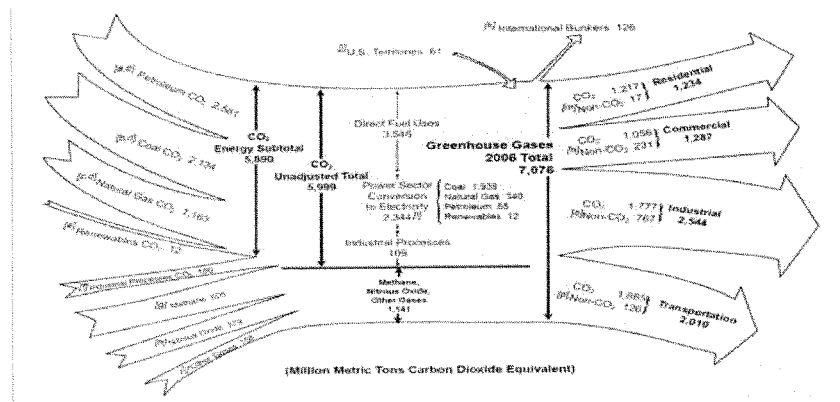
#### The Federal Role of the Past Half-Century

Surveying a map of the United States at night, glittering lights line the coasts and light up settlements scattered throughout the landscape in between. This is striking visual evidence of the footprint of human-made structures, which also makes up more of our economy than many realize: 35 percent of the nation's assets are in the built environment.<sup>1</sup>



The National Interstate and Defense Highways Act of 1956 (P.L. 84-627) helped pave the way for this goliath, and along with it a half-century of economic prosperity. Cities and towns were connected, facilitating trade in goods and services. Settlements grew at the intersections of highways and interstates. Baby boomers grew up in maturing cities and new suburbs that spread ever further from central business districts. The American Dream was defined as a single-family detached house with a yard in the suburbs.

Of course, there were downsides. Farmland and open space fell victim to the bulldozer. Social capital took a hit as “third places” -- those gathering spots like coffee shops and diners outside of our work and home worlds -- were few and far between in the far-flung suburbia. And a new source of pollution -- a massive fleet of private cars and trucks—grew along with suburban sprawl. Stormwater runoff carried pollutants into lakes and streams, and tailpipes belched carbon monoxide, pollutants that fed smog, and soot into the air. Global warming pollution also increased, as carbon dioxide (CO<sub>2</sub>) concentrations increased and the transportation sector grew to account for the lion's share of U.S. petroleum consumption and more than 28 percent of CO<sub>2</sub> emissions, second only to industry as a source of heat-trapping pollution (see graph below<sup>2</sup>).



The growth in carbon dioxide emissions is roughly the product of three factors:

**Per-Mile Vehicle Fuel Use**

**X**

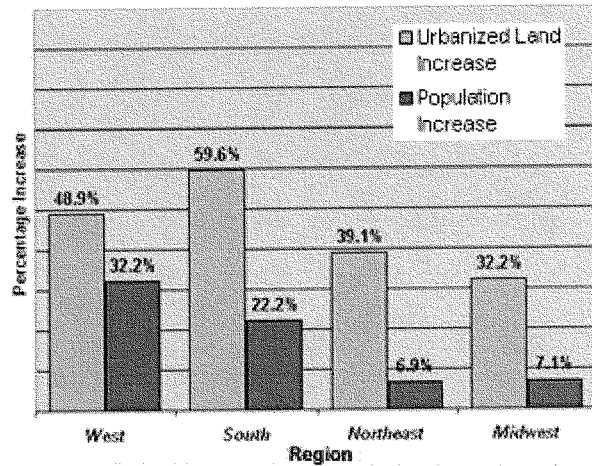
**Energy Carbon Intensity**

**X**

**Vehicle Miles Traveled (VMT)**

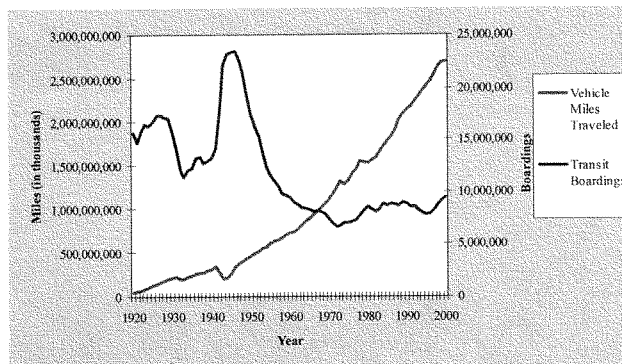
The last of these factors is driven in part by the increase in car-dependent suburban development patterns that dominated growth in the last fifty years. Growth in such settlements vastly outpaced that in central cities in all regions of the country.<sup>3</sup> And the rate of land development accelerated in the last two decades of the twentieth century, as shown in the graph below.<sup>4</sup> Real estate expert Chris Leinberger has studied Department of Agriculture data and claims that this trend has picked up more speed since then: "For every one percent population growth in the 1990s and early 2000s, land use grew by probably ten to twenty percent, even faster geometric land use consumption than in the 1970s and 1980s."<sup>5</sup>

Population vs. Urbanized Land Growth, 1982-1997



Adapted with permission from Fulton, William, et al., "Who Sprawls Most? How Growth Patterns Differ Across the U.S.", Center for Urban And Metropolitan Policy, The Brookings Institution, July 2001.

Transportation was transformed too, with vehicle miles traveled increasing rapidly while transit boardings plummeted. The growth was relentless for the last fifty years, averaging 2-3 percent annually without fail as shown in the graph below, which contrasts the growth in VMT with transit boardings using data from the Federal Highway Administration and the American Public Transportation Association. VMT has been closing in on the three trillion miles a year mark, more than any other industrialized nation and indeed enough to make more than 10,000 round trips to the planet Mars.



Since 1956, the Federal role in providing the infrastructure that supports this ever-increasing driving has been robust, so that it now provides about one-fifth of the financing for construction, operation and maintenance of highways, transit and other

facilities. While the large land mass accommodates this development with ease, with highways, streets and affiliated rights-of-way technically taking up just one percent of the U.S., its environmental footprint is much larger. One estimate finds that the system affects one-fifth of the country, degrading and fragmenting habitat, harming water quality and spewing pollution into the air.<sup>6</sup>

#### We Can't Grow On Like This

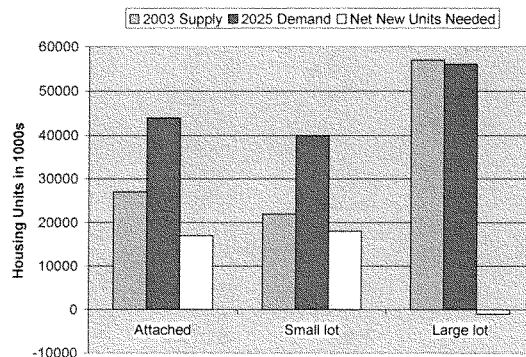
The next fifty years are bound to look very different from the last fifty years. Three drivers are pushing more development choices into the marketplace, beyond the homogenous suburban product lines mastered by developers and planners.

#### *The Coming Radical Demographic Shift*

First: Demographics are destiny. The United States will grow dramatically in the next few decades, and demographically this growth will pose challenges to the development industry for two reasons: The aging of the boomers and the decrease in the size of the average household. For example, as Professor Chris Nelson of Virginia Tech has documented, the number of people turning 65 will increase yearly and then jump so that from 2012-2025 the ranks of senior citizens will grow by about 1.5 million people annually. And while in 1960 almost half of households had children, only a third did in 2000 and that number is projected to keep dropping.<sup>7</sup>

There will be implications for the housing market, based on consumer preferences:

#### 2003 Housing Supply vs. 2025 Housing Demand (Nelson 2006)



In fact, some recent analyses find that there is already a mismatch between what the marketplace provides and consumer preferences. One analysis looked at Atlanta households and found that “the segment of the housing market that is interested in these alternatives is underserved—that is, there is unmet demand for alternative development in the Atlanta region.”<sup>8</sup> Another analysis compared Boston and Atlanta, finding that 70% of



Bostonians who wanted to live in a walkable suburb actually did while only 35% of the same in Atlanta did.<sup>9</sup>

Another compelling piece of evidence of unmet demand for alternatives to sprawl-type development is a recent national survey of developers, which found that more than 60% agreed with the statement “In my region there is currently enough market interest to support significant expansion of these alternative developments,” with a high of 70% in the Midwest and a low of 40% in the South Central region. In terms of location within metropolitan regions (central city, inner suburb, outer suburb, or rural) the highest percentage (80%) reported an intent to develop more densely should land-use regulations be relaxed in inner suburbs.<sup>10</sup>

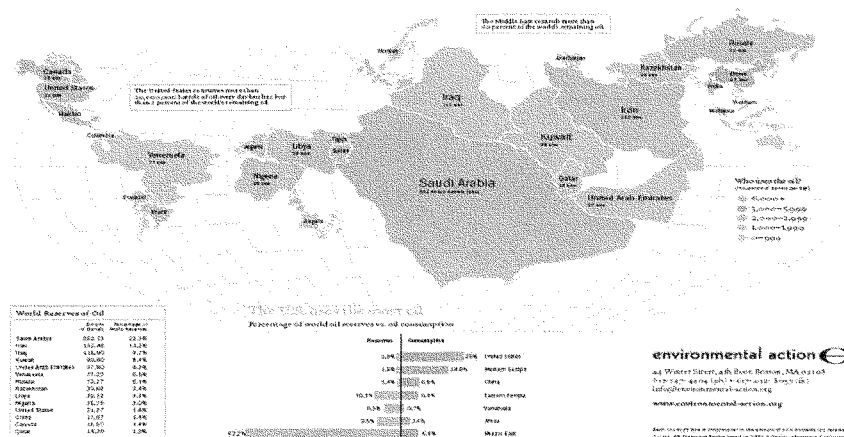
### Oil Security

America’s economic engine runs on oil. This is especially true for transportation, which forms the backbone of our economy and is responsible for two-thirds of total U.S. oil demand. Passenger cars and light trucks alone account for nearly half of total U.S. oil consumption.

Our overreliance on this resource is taking a huge toll on the economy. The U.S. is paying \$625 million a day for imports, which means we are in the midst of the largest transfer of wealth in history.<sup>11</sup> Oil imports make up more than half of our trade deficit, putting pressure on the dollar.<sup>12</sup>

Due to our “oil addiction,” as the President has rightly termed it, we have painted ourselves into a corner. The map below, courtesy of Environmental Action, underscores the inescapable fact that we are endowed with a mere two percent of global reserves of this resource yet we account for 25 percent of world demand.

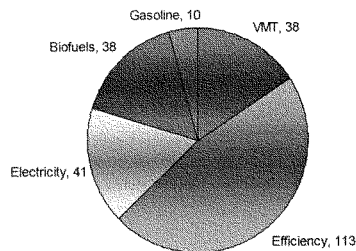
Who has the oil?



Two-thirds of the reserves lie under the sands of the Middle East, and increasing imports from states outside of this unstable region is a risky, short-term solution at best. The total projected reserves of these alternative oil suppliers are 198 billion barrels—70 percent lower than reserves in the Middle East. More importantly, the average reserve to production ratio of these alternative oil suppliers is just 18 years. In comparison, the Middle East has almost 100 years of proven reserves. By depleting reserves outside the Middle East, we create a more severe dependence on imports from the Middle East in the future. As a former Energy Secretary put it, “We should not deceive ourselves, as long as we are dependent on oil to the degree that we are, that there is a substitute for the Middle East [as a source for oil]....Over time, non-OPEC oil will be depleted and we will become more dependent on oil from the Middle East.”<sup>13</sup>

The best way to attack our overdependence is to drive down the oil intensity of our economy generally and our transportation sector specifically. The potential to reduce demand for oil is greater in surface transportation, by demand-side reductions achieved via higher vehicle efficiency and reduced car traffic (shifting to alternatives such as rail transit) as well as substitutes such as biofuels and electricity (i.e., plug-in hybrid electric vehicles). In fact, NRDC projects that if we addressed this challenge aggressively we could virtually eliminate gasoline use by 2050 as shown in the scenario below.

Displacing 240 Billion Gallons of Gasoline Demand in 2050

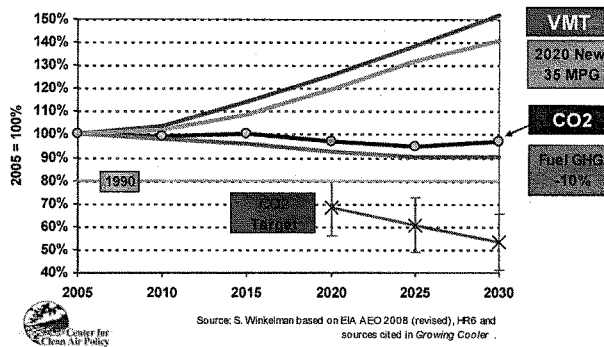


### *Carbon Constraints*

This Committee is better aware than most of the challenge that climate change poses to the United States. A host of likely harmful effects are in store for the country and the globe if we don't scale up federal policy to address growing carbon dioxide concentrations. I commend this Congress for enacting the Energy Independence and Security Act of 2007 (EISA, P.L. 110-140) which will provide substantial reductions in carbon dioxide emissions.

However, these reductions are projected to be undercut by increases in VMT. Steve Winkelman of the Center for Clean Air Policy graphed out the transportation emission reductions due to EISA, compared to reductions as part of a trajectory to 2030, consistent

with a cut of 80 percent below 1990 levels by 2050, layering on VMT at the top. Runaway traffic growth could well undermine technological efforts to de-carbonize transportation. Federal policy can and must help avoid this outcome.



### The Necessity of a Strong Federal Role

The timing of the next transportation bill reauthorization is such that fundamental reform is not optional. Our transportation infrastructure investments over the next decades will either support or thwart efforts to address the intertwined challenges of historic demographic changes, dangerous oil addiction, and global warming. This is why I urge Congress to think big. Bigger than the landmark Intermodal Surface Transportation Efficiency Act of 1991 (P.L. 102-240, known as ISTEA). We need a visionary strategy, scaled up to the challenges, akin in boldness to the 1956 highway bill.

This bill must set a course for transformation of the transportation sector, decarbonizing it, making it dramatically less oil-intensive, and undergirding a new array of development types that are a better fit for the 21<sup>st</sup>-century marketplace.

One place to look for inspiration is the United Kingdom. Most people are quite familiar with the Stern Review, but few realize that another momentous assessment was unveiled by Sir Rod Eddington, in 2006. It laid out a bold strategy for transportation, with three key strategic economic priorities: Congested and growing city catchments, key interurban corridors and key international gateways.<sup>14</sup> His rationale for targeting resources in this way is instructive for the U.S. since our metropolitan areas and ports face similar challenges: "Government should focus on these areas because they are heavily used, of growing economic importance, and showing signs of congestion and unreliability – and these problems are set to get significantly worse. They are the places where transport constraints have significant potential to hold back economic growth."<sup>15</sup> He further suggests a methodical approach to transportation policy, something that should also be of interest here, noting that "The policy process needs to be rigorous and systematic: start with the three strategic economic priorities, define the problems, consider the full range of modal options using appraisal techniques that include full environmental and social costs and benefits, and ensure that spending is focused on the best policies."<sup>16</sup>

This is exactly right. And in order to meet the big challenges facing the nation at the requisite scale, the next bill must have at least these components: Strategic federal investment, empowerment of local governments, incentives for development rule reform to provide more consumer choices, innovative revenue-generation and price signals, and linkages between transportation and climate policy.

#### Strategic Federal Investment

Federal transportation policy is bogged down in parochial politics. This became clear to the general public with the controversial “bridge to nowhere” project included in the last transportation bill. Of course, that was just one of thousands of earmarks included in the bill. This unfocused use of substantial federal resources undermines the ability of administrative agencies and states to implement a strategy for transportation that would help make the nation more competitive, secure, and environmentally responsible.

As Secretary Mary Peters pointed out in a recent speech to the nation’s governors:

In a September 2007 report by the DOT Inspector General, a review was done of 8,065 earmarked projects within the Department’s programs that received more than \$8.54 billion for FY 2006. 99% of the earmarks studied “either were not subject to the agencies’ review and selection process or bypassed the states’ normal planning and programming processes.”<sup>17</sup>

I agree that the Secretary that earmarks should be abolished. I also agree that earmarks are merely one symptom of the larger problem summed up by the National Transportation Policy Project (NTPP): “...it is fair to say that U.S. transportation policy has increasingly devolved into a fight over a large pot of money with little or no regard for cost-benefit considerations or performance objectives.”<sup>18</sup>

#### *Making Performance Matter*

Instead of such piecemeal decision-making, Congress must establish a vision for the national system based on a set of performance metrics and outcomes. These include:

- Reductions in heat-trapping emissions proportional to the contribution to an economywide climate stabilization strategy needed from transportation;
- Increases in oil savings due to better traffic management, reductions in traffic and accessibility to fuel-efficient transportation modes;
- Increases in the percentage of consumers and communities with easy access to more travel choices such as rail, bus and bicycle;
- Minimization of the overall environmental footprint of new and existing
- Increases in the number of roadways, bridges and transit lines in a state of good repair;
- Contributions to economic competitiveness and improved regional equity;

- Reduction in number of injuries and fatalities relative to number of people traveling in each mode (auto, transit, bicycle, pedestrian).

While regional and state plans should be held accountable for achieving progress in these ways, there must also be a national strategy for moving forward.

One model for development of such a strategy was proposed by the National Surface Transportation Policy and Revenue Study Commission (Revenue Commission), which would set up a National Surface Transportation Commission (NASTRAC) to oversee development of performance measurements by U.S. DOT. However, as NTPP pointed out, “This idea seems to put the federal government in charge of approving every major transportation project in the U.S., which would be a cumbersome and potentially faulty process given the unique nature of many parts of the country.”<sup>19</sup>

Robert Puentes of the Brookings Institution has a better idea. He would create a Strategic Transportation Investments Commission (STIC), which would have a more limited purview than NASTRAC. Specifically, STIC would develop a map of the United States which leverages federal resources in a targeted way to achieve three goals:

1. Preservation and maintenance of the Interstate Highway System;
2. Development of a national intermodal freight agenda; and
3. Development of a comprehensive plan for inter-metro area passenger travel.

It seems to me that this is an appropriate list, and with the overlay of the performance goals listed above it is the type of policy architecture that Congress should establish in the next bill to best target the allocation of scarce federal dollars.

#### *Fixing-It-First: Repairing Existing Infrastructure*

The first goal could fruitfully be applied to the entire transportation system, which is showing its age. The American Society of Civil Engineers issued a report card on America’s infrastructure in 2005, giving grades for transportation ranging from a mediocre C for bridges to a pathetic D for roads.<sup>20</sup> The U.S. DOT estimates that less than half of the nation’s roadways (except rural and local) are in good condition and that fifteen percent are in *unacceptable* condition.<sup>21</sup> And according to a presentation before the Revenue Commission, transit infrastructure conditions lie generally between “good” and “adequate” with the notable exception of our bus fleet which is deemed “moderately defective.”<sup>22</sup>

Or, to quote Sir Eddington again: “Any sensible business would ensure that existing assets perform properly before embarking on new speculative investments: the guardians of the transport system should follow this lead.”<sup>23</sup>

#### *Developing A Freight Traffic Strategy*

Freight poses a huge challenge to the nation's environment and oil security. It is a growing part of the economy, moving more than \$6 trillion in goods, accounting for roughly 11 percent of GDP and employing about 13 million people directly and indirectly.<sup>24</sup> John Vickerman, an expert with the company Transsystems, puts it bluntly:

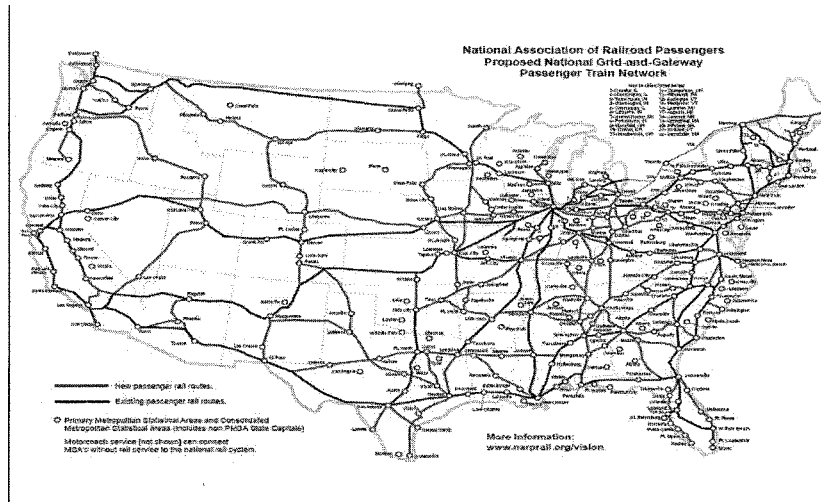
The problem...is that the nation is dealing with a paradox. The demand for cargo is high, but we live in a time when we face diminished resources and have no true vision – public or private – for how to move forward with needed goods movement investments.<sup>25</sup>

As global trade expands, lack of a national strategy puts growth and prosperity at risk. For example, a recent study of 16 ports found that 12 of them would have significant capacity problems by 2010, which isn't surprising since global container traffic is forecast to nearly triple in just two decades.<sup>26</sup> It is imperative that the nation have a strategy for shoring up the stability of our climate while expanding capacity as this huge wave of new trade hits our port cities and spreads into the nation in trains and trucks.

*More Travel Choices: Building Rail to Complement Highways*

Last but not most definitely not least is the issue of intercity passenger movement. Not only would construction of a world-class rail system provide a valuable transportation alternative to consumers and business, travel and freight shifts from other modes would yield substantial energy and environmental benefits. Intercity rail (Amtrak) is 21 and 17 percent more energy-efficient than automobile and airline travel, respectively.<sup>27</sup> Rail emits 0.18 kilograms of CO<sub>2</sub> per passenger mile, compared to 0.21 and 0.35 from autos and planes respectively.<sup>28</sup>

Thankfully we can look to the Revenue Commission for a conceptual framework for moving ahead. It laid out a vision for an intercity high speed rail system based on the work of its Passenger Rail Working Group (PRWG). The PRWG makes five recommendations, the net effect of which would be to create a network of rail connections to complement the world-class interstate highway system. The routes selected by PRWG are a subset of the map of potential ones laid out by the National Association of Railroad Passengers (NARP) in the map below. As NARP director Ross Capon noted approvingly, "By fleshing out ideas and proposing both legislative and funding mechanisms, the PRWG strengthens the initiative proposed by NARP..."<sup>29</sup>



The PRWG recommends a five-step strategy for fulfilling the vision:

1. Identification of the rail network, with the key performance measure being delivery of a system that provides “reliable, on-time passenger service that is travel-time competitive with a auto travel” with other possible measures being “congestion mitigation, safety and environmental benefits and reduced energy use.”<sup>30</sup>
2. Funding of construction of the system, with a total capital cost through 2050 of about \$357 billion, with initial funding of \$5 billion annually for Amtrak and the relevant states.
3. Implementation the network, which requires collaboration of federal, state and local governments.
4. Creation of a national rail strategy, which will require coordination with the growing freight needs described above.
5. Investment in data collection to support multimodal planning, to evaluate modal tradeoffs and shape a real national transportation strategy.

#### Empowerment of Local Governments

While a national vision and strategy are essential to making the transportation system more accountable and multimodal, there are also instances when regions should actually have more control over funding, due to their disproportionately large economic and energy footprint. According to the Brookings Institute's Metro Policy Document, 77 percent of minorities - and 65 percent of our overall population - call urban areas home, two-thirds of our population work there and metropolises produce about three-quarters of the nation's output. Although the largest of these areas produce about 55

percent of U.S. carbon emissions, they are our best hope of reducing our carbon footprint because these areas tend to be more energy efficient.<sup>31</sup>

As of the turn of the century, local jurisdictions owned three-quarters of the nation's roads and streets and almost half of the bridges.<sup>32</sup> Yet the Safe, Accountable, Flexible Transportation Efficiency Act – A Legacy for Users (P.L. 109-059), allocated a mere five percent of federal funds to local jurisdictions, out of the Surface Transportation Program (STP).<sup>33</sup> With the enactment of SB 45 in 1998, which helped remedy this incongruity by “suballocating” 75 percent of federal and state funds to regions and localities, California has shown the advantage of an innovative policy approach which provides more control over investments. As summarized in an analysis commissioned AARP:

The law is based on the idea that regions (governed by Regional Transportation Planning Agencies, California's equivalent to Metropolitan Planning Organizations) should make decisions on how best to provide transportation within their own region, while the state concentrates on providing for trips between regions. Since the law was passed in 1997, many areas have directed a larger share of transportation funding to public transportation and other alternatives.<sup>34</sup>

One way for federal policy to follow suit is to suballocate a greater percentage of funding. The U.S. Conference of Mayors, for example, suggests suballocating the entire Congestion Mitigation and Air Quality Improvement (CMAQ) account, currently a practice of only 26 state governments.<sup>35</sup> This would double the percentage of federal dollars going to local governments.

A bigger step would be to suballocate both the CMAQ program and STP, a fivefold increase in the percentage going to local governments. STP, a program created in 1991 to allow states to “flex” funding into alternative modes of transportation, has instead largely been used for traditional highway construction and maintenance purposes. Thankfully from 1992-2001 localities “flexed” their modest portion of STP into transit projects twice as much as states.<sup>36</sup>

Given this track record, there would be substantial environmental and energy benefits to more local control of this account. Public transportation is essential to maximizing energy efficiency and environmental quality. According to a report commissioned by the American Public Transportation Association in March of this year, public transportation reduces vehicle miles traveled by American households by 102.2 billion miles a year and saves 4.2 billion gallons of gasoline- equivalent to three times the amount of U.S. imports from Kuwait.<sup>37</sup>

Public transportation also reduces carbon emissions by 37 million metric tons annually. Put in perspective, all households in New York City, Washington D.C., Atlanta, Denver and Los Angeles would have to completely stop using electricity in order to achieve similar reductions. Expanding public transportation therefore must be part of the equation when considering greenhouse gas emissions reductions and energy independence.



### Incentives for Development Rule Reform to Unleash More Consumer Choices

Rules that govern development must be reformed to allow for the development of more compact, transit-friendly, walkable neighborhoods. In spite of the intense media coverage of the smart growth issue in recent years, surprisingly few jurisdictions are changing the rules to accommodate market demand. For example, a recent study found that local jurisdictions in Illinois have adopted some policies yet a low-level of implementation prevails.<sup>38</sup>

More importantly, there is evidence of government intervention in the marketplace that not only exacerbates sprawl but deprives consumers of housing choices, effectively excluding them from many communities. Regulatory tools, most notably low-density zoning which mandates separation of land uses (so that the corner store is illegal across the country, as former Maryland Governor Glendening is fond of quipping) are actually associated with more sprawl can be racially and economically exclusionary, in part because they are invariably implemented only in certain jurisdictions within a metropolitan region.<sup>39</sup>

The developer survey cited above provides evidence the widespread use of these exclusionary, consumer-preference-trumping tools. In every region of the country, the main reason developers cited for their inability to provide alternative development styles was government regulation, with a national average of 78.2% agreeing that's the case.<sup>40</sup>

This is unsurprising to experts such as Anthony Downs who has noted:

No metropolitan area has anything remotely approaching a free land use market because of local regulations adopted for parochial political, social and fiscal purposes. Most suburban land use markets are dominated by local zoning and other regulations that are aimed at excluding low-income households and that distort what would occur in a truly free market.<sup>41</sup>

Liberalizing rules would yield more choices for consumers in the market for residential and business property, save oil and cut pollution by reducing auto traffic. One recent analysis of 40 growth scenarios including rules reform found that VMT savings over the next 20 years would range from 10% to 20%, compared to projected trends.<sup>42</sup>

In terms of specific policy levers for achieving liberalization of government regulation of development, there are various possibilities. For example, in Portland (OR), development outside of an urban growth boundary (UGB) is closely regulated while red tape is slashed for developers interested in projects within the boundary, as one expert sums up:

Inside the UGBs, property owners not only gained the explicit right to develop land for urban uses, but they were given substantially more development rights than perhaps they have ever enjoyed. Those rights included higher-density and intensity development of land, infrastructure commitments, and expedited review

of development proposals...Since I am familiar with both metropolitan Portland and Atlanta, it is my personal observation that rezoning proposals to build higher-density housing and mixed use development in metropolitan Portland take a few months but rarely much more than a year (even with court appeals), while the same sorts of proposals in metropolitan Atlanta take a year and often more, and up to a decade if the courts are involved.<sup>43</sup>

Portland achieved this liberalization under a regional governance structure called Metro, but similar measures have been adopted by other types of groups such as the Metropolitan Planning Commission in San Francisco, which offers financial incentives for local jurisdictions willing to liberalize rules to allow for compact, mixed-use development around proposed Bay Area Rapid Transit stops. For example, the Greater Regional Transportation Authority in Atlanta, has the authority to deny infrastructure funding for projects in the Atlanta region which fall short of smart-growth specifications.<sup>44</sup>

To meet the pent-up demand for new development types, the planning provisions in the new transportation bill must provide incentives for reforming local rules, especially near transit stops. A modest program – no more than \$500 million – providing technical assistance, a higher federal match for transit project funding, and discrete grants for rules liberalization programs would yield disproportionately large results.

There are large potential environmental benefits of making these choices more widely available for consumers. In fact, a popular new study of development and VMT found that

...as a rule of thumb, it is realistic to assume a 30 percent cut in VMT with compact development...Making reasonable assumptions about growth rates, the market share of compact development, and the relationship between VMT and CO<sub>2</sub>, smart growth could, by itself, reduce total transportation-related CO<sub>2</sub> emissions from current trends by 7 to 10 percent in 2050. This reduction is achievable with land use changes alone.<sup>45</sup>

#### Innovative Revenue-Generation and Price Signals

Combined with increased investment in transportation alternatives and liberalization of policies that govern development, changing price signals received by drivers would achieve dramatic VMT savings and generate new revenue for construction of alternatives.<sup>46</sup> A focus on demand is key, as the Eddington Report noted: “Policies to influence demand must be considered alongside, and in many cases before, turning to increase supply.”<sup>47</sup>

Innovative pricing policy is in fact central to the Eddington Report’s recommendations, including the following observations:

- Introducing markets (pricing) where none exist can have a very powerful and positive economic effect in any sector. The transport sector is no exception, and in particular the potential for benefits from a well-designed, large-scale road pricing scheme is unrivalled by any other intervention.<sup>48</sup>
- Provided it is well targeted, a national road pricing scheme of this type [referenced elsewhere in the report] could reduce congestion by some 50% below what it otherwise would be in 2025 and reduce the economic case for additional strategic road infrastructure by some 80%.<sup>49</sup>
- There are distributional effects, with some commuters being worse-off unless they can be flexible with travel times or good alternative travel options are available, and in implementing a road pricing scheme this needs to be considered.<sup>50</sup>

The last of these is especially noteworthy, especially the mention of transportation alternatives. Recent analyses of pricing in the U.S. and internationally (the two most prominent recent examples being London and Stockholm which have adopted citywide congestion pricing programs) have found that ensuring alternatives such as transit (rail or bus) are available is key to ensuring equity as well as public acceptance of new road pricing programs.<sup>51</sup>

The portfolio of options includes road pricing, parking pricing/parking cash-out, and pay-as-you-drive insurance.

#### *Road Pricing*

An increasing number of jurisdictions around the world are turning to this policy, which has the distinct advantages of a more direct linkage to the use of roads than the gas tax, especially if we commit as a nation to slashing gasoline use as advocated by NRDC. Secretary of Transportation Mary Peters described other advantages of this policy in a recent speech to the nation's governors:<sup>52</sup>

The brilliance of road pricing is that it achieves three major policy objectives simultaneously.

*First*, it will immediately reduce congestion and deliver substantial economic benefits. Drivers have proven in a growing array of road pricing examples in the U.S. and around the world that prices can work to significantly increase highway speed and reliability, encourage efficient spreading of traffic across all periods of the day, encourage shifts to public transportation and encourage the combining of trips. In fact, the National Household Travel Survey shows on an average workday, 56% of trips during the morning peak travel period and 69% of trips during the evening peak travel period are non-work related, and 23% percent of peak travelers are retired.

*Second*, it will generate revenues for re-investment precisely in the locations that need investment the most. Recent estimates in a forthcoming paper, "Toward a Comprehensive Assessment of Road Pricing Accounting for Land Use" by

economists Clifford Winston and Ashley Langer at the Brookings Institute conclude that utilizing congestion pricing in ONLY the largest 98 metropolitan areas would generate approximately \$120 billion a year in revenues while simultaneously solving the recurring congestion problem in those areas. Implementation of a broader road pricing strategy tied to wear and tear and reconstruction costs would obviously produce even higher revenue. In 2006, as a nation, we spent approximately \$150 billion on all of our highways. State and local officials would even gain additional flexibility to reduce the wide array of taxes currently going into transportation that have nothing to do with use of the system.

*Third*, direct pricing will reduce carbon emissions and the emissions of traditional pollutants. According to Environmental Defense, a nonprofit environmental organization, congestion pricing in the city of London reduced emissions of particulate matter and nitrogen oxides by 12 percent and fossil fuel consumption and CO<sub>2</sub> emissions by 20 percent; a comprehensive electronic road pricing system in Singapore has prevented the emission of an estimated 175,000 lb of CO<sub>2</sub>; and Stockholm's congestion pricing system has led to a 10-14 percent drop in CO<sub>2</sub> emissions.

Generally, road pricing measures are an established and growing means to address both congestion and financing issues in transportation. These measures can be sub-divided into the following categories:

- Congestion pricing – Generally comprised of dynamic pricing on metropolitan radials and orbitals. High Occupancy/Toll (HOT) lanes are included in this category. Many examples now operating in the US.
- Area/Cordon Pricing – pricing of a downtown or cbd area, so far with simplified (static) congestion pricing. Implemented in London, Stockholm, Singapore, Oslo, Bergen, Trondheim. San Francisco is planning to implement area pricing in about two years. New York City was committed to the use of congestion pricing as a key part of its landmark PlanNYC to repair and expand the city's aging transportation system, and indeed it would have provided half of the revenue for planned transit improvements, but unfortunately the state legislature turned the city down.<sup>53</sup>
- Toll roads – intercity highways are increasingly being tolled in the US, recent federal legislation now permits tolling of some previously untolled Interstate highways. Increasing public-private partnerships to build privately financed and operated toll roads (such as the Dulles Greenway near Washington DC) are expected to spread considerably, significantly increasing the number of tolled intercity highways.
- Universal tolling – This has been implemented for trucks in Germany and is being advanced in the UK as the long-term combined solution for congestion pricing and road financing.

One key issue to be aware of is that there are very substantial GHG reductions from improved traffic flow, roughly equal to those from reduced VMT:

- In London, total CO2 reductions have been estimated as 19.5% within the zone, split evenly between personal vehicle trip reduction and congestion reduction improving fuel economy. Total CO2 reductions are in the neighborhood of 37,000 tons/year.
- In Singapore, total CO2 reductions are calculated at 67,000 tons/year, with approximately two-thirds coming from trip reductions/mode shifts, and the remainder from speed improvements inside and outside the zone.
- San Diego's I-15 HOT Lanes provide total CO2 reductions calculated at 2,100 tons/year, with approximately 40% attributable to improved fuel economy of SOV vehicles in the HOV lanes, and the remainder to improved fuel economy of vehicles in the general purpose lanes. In this implementation, there is NO reduction in VMT (and in fact, a very small increase) as traffic is merely shifting which lanes are used.

In terms of utility and consumer preference, the following non-financial effects can be discerned from area pricing:

- Utility increases for remaining (75-80%) of drivers who pay charge, from improved travel time and reliability;
- Utility increases for pre-existing transit users, who have benefits from increased transit service and levels of service
- Utility increases for individuals living, working and visiting the priced zone, due to decreased air pollution and improved urban environment
- Mixed effects on those priced out of their cars: mostly utility loss due to coerced mode shift, but some former drivers will have higher utility from current, significantly improved transit service than from their previous, congested drive.

For both lane conversions (e.g., HOT lanes) and any new priced lane construction there is an across the board increase in consumer utility. All drivers experience reduced congestion, and use of the paid lane is always an opt-in (a free, general purpose remains).

#### *Pay-As-You-Drive Insurance*

Currently, drivers pay for insurance based on residential location, gender, age and driving record. A rational additional criterion, which relates directly to risk since most claims occur while vehicles are in motion, should be miles driven. There are big potential advantages vis-à-vis traffic reductions, as expert Allen Greenberg noted in recent testimony before the California Air Resources Board:

Research suggests that if premiums were charged based on miles driven, an 8-20% reduction in driving and related congestion would result, along with fewer crashes and less pollution. This reduction in driving would occur voluntarily and be accomplished through trip consolidation, carpooling, alternative transportation, and forfeiting of low-value trips. The Brookings Institution has projected that

63.5% of households would save an average of 28% on their total premiums (including the portion of premiums providing comprehensive coverage, which was assumed not to vary by mileage), or about \$496 annually for the households that do save.<sup>54</sup>

Progressive Insurance piloted this measure in Texas in a program called “Autograph” between 1998 and 2001, with premiums of 1200 drivers based on how much and when they drove. Consumer savings were in the range of 25 percent, and the company was pleased with the outcome, but the capital cost of installing global positioning system (GPS) units in vehicles put profitability into question.<sup>55</sup>

#### *Removing Barriers to Greater Use of Innovative Pricing Techniques*

I urge Congress to heed the advice of Michael Replogle of the Environmental Defense Fund, a knowledgeable advocate for greater use of pricing in transportation, who recommends that

...federal law should eliminate barriers to needed market-based transportation reforms by (1) ending all federal prohibitions on tolling existing highways; (2) requiring a study of how state insurance regulations inhibit or facilitate pay-as-you-drive insurance with reporting by the states on steps they are taking to eliminate barriers to such policies, and a study of how PAYD insurance could facilitate a transition to VMT fees.<sup>56</sup>

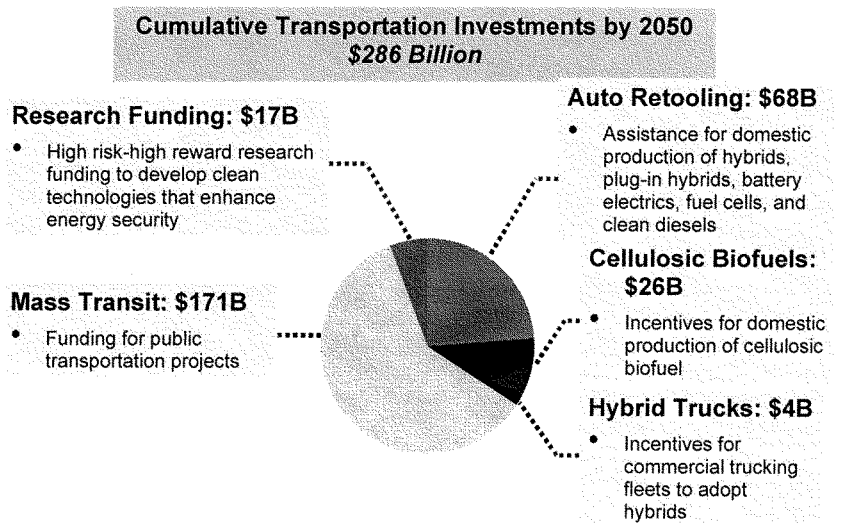
Congress should also consider providing incentives in the next transportation bill. In addition to new grant and loan programs (such as the current Urban Partnership Agreements), one model is in the Future Fuels Act (H.R. 4640), proposed by Congressman Jim Gerlach (R-PA) in the 109<sup>th</sup> Congress. This bill would pay companies a penny per mile insured, providing a powerful incentive. Another means to encourage use of this innovative policy would be to add state pay-as-you-drive initiatives to the list of eligible uses of CMAQ funding.

#### Linkages Between Transportation and Climate Policy

The bottom line for your Committee is that federal transportation policy should be linked with climate policy. The upcoming transportation bill can be seen as our next big energy bill, which should contribute to, rather than exacerbate, carbon dioxide emission reductions that will be required in climate policy.

One way to measure the success of the transportation bill is whether or not it bookends EISA, which was a good start toward the reductions we need from transportation as part of a climate strategy. In fact, NRDC analyzed the heat-trapping pollution reductions due to the transportation provisions in EISA, finding that they would achieve 8.3 percent to 11.7 percent of the reasonable cuts proposed in the Boxer-Lieberman-Warner Climate Security Act. How much will the next transportation bill contribute?

If the bill contains the components listed above, the contribution should be substantial. The linkage should be a two-way street, however. Thanks to the work of this Committee, the stage is set for that to be the case when Congress takes this up climate legislation next year. In addition to the hundreds of billions of dollars in federal investments in local and state infrastructure, the Climate Security Act included some notable transportation-specific investments as shown in the pie chart below.<sup>57</sup>



These are very strategic investments in a low-carbon, energy-efficient future. I urge your Committee to include and indeed expand on them in next year's bill, and to pursue opportunities to add other policy that would complement transportation legislation. An economywide climate policy with robust transportation provisions combined with fundamental reform of federal transportation policy, layered on top of the historic fuel economy standards in EISA, will transform transportation into a low-carbon, energy-efficient system better suited to the nation's changing demographics.

Thank you for your time.

<sup>1</sup> Leinberger, Christopher B., *The Option of Urbanism: Investing in a New American Dream*, Island Press, Washington, D.C. 20008.

<sup>2</sup> "Emissions of Greenhouse Gases in the United States 2006," Energy Information Administration.

<sup>3</sup> Janet Rothenberg Pack

<sup>4</sup> Pendall

<sup>5</sup> Leinberger, *The Option of Urbanism*, 2008.

<sup>6</sup> Harvard School of Design

<sup>7</sup> Census for 1960 and 2000.

<sup>8</sup> Levine and Frank, 2006

<sup>9</sup> Levine, 2006

<sup>10</sup> Levine and Inam, 2004

<sup>11</sup> The Energy Information Administration estimates that daily imports averaged at 10,071,000 barrels per day in 2007. To these, we apply the 2007 average imported oil price of \$62.10 per barrel as reported in EIA's Annual Energy Outlook 2008.

<sup>12</sup> Michael M Grynbaum, "Oil is Blamed for Widening Trade Deficit," *New York Times*, January 12, 2008.

<sup>13</sup> Former Secretary of Energy James Schlesinger, "The Oil Embargo 30 Years Later: Are We Prepared?" Heritage Foundation panel, October 14, 2003.

<sup>14</sup> Eddington Transport Study – The Case for Action: Sir Rod Eddington's Advice to Government, United Kingdom Department for Transport, December 2006.

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> The Honorable Mary Peters, Secretary of Transportation, "Toward a New Surface Transportation Economic Model," Speech at the 2008 National Governors Association Winter Meeting, February 24, 2008.

<sup>18</sup> Commentary on the Report of the National Surface Transportation Policy and Revenue Study Commission, National Transportation Policy Project of the Bipartisan Policy Center, February 26, 2008.

<sup>19</sup> Ibid.

<sup>20</sup> American Society for Civil Engineers, Report Card for America's Infrastructure, 2005.

<sup>21</sup> Conditions and Performance Report, U.S. DOT

<sup>22</sup> The Brookings Institution, "A Bridge to Somewhere: Rethinking American Transportation for the 21<sup>st</sup> Century," Metropolitan Policy Program 2008.

<sup>23</sup> Eddington report, 2006

<sup>24</sup> Eno Transportation Foundation, Efficient Goods Movement and the Environment, Summary of Symposium Series, October 2005-March 2006.

<sup>25</sup> Ibid.

<sup>26</sup> Ibid.

<sup>27</sup> Oak Ridge National Laboratory, Transportation Energy Data Book 2005.

<sup>28</sup> Calculation by Frances Bourne of Amtrak based on 2006 data provided by the World Resources Institute. Assumes single-occupancy for the auto and radiative-forcing from high altitude pollutant release from aircraft.

<sup>29</sup> December 6, 2007 Press Release: NARP Applauds Passenger Rail Working Group Study.

<sup>30</sup> Passenger Rail Working Group, "Vision for the Future: U.S. intercity passenger rail network through 2050," December 6, 2007.

<sup>31</sup> *MetroPolicy: Shaping a New Federal Partnership for a Metropolitan Nation*, Brookings Institution, 2008.

<sup>32</sup> "Why Local Officials Seek Stronger Funding Commitments," *Progress Newsletter*, Surface Transportation Policy Project, Volume XIII, Number 2, March 2003.

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<sup>34</sup> Ernst, Michelle and Barbara McCann, "Legislating Mobility Options: A Survey of State Laws Promoting Public Transit, Walking and Bicycling," Surface Transportation Policy Project, September 2005.

<sup>35</sup> Puentes, Robert and Linda Bailey, "Improving Metropolitan Decision Making in Transportation: Greater Funding and Devolution for Greater Accountability," Brookings Institution, October 2003.

<sup>36</sup> Bailey, Linda, "Solving Metropolitan Transportation Needs: New Decision-Makers, New Decisions," *Progress Newsletter*, Surface Transportation Policy Project, Volume XIII, Number 2, March 2003

<sup>37</sup> Bailey, Linda, Patricia L. Mokhtarian, Ph.D. and Andrew Little, "The Broader Connection between Public Transportation, Energy Conservation and Greenhouse Gas Reduction," American Public Transportation Association, February 2008.

<sup>38</sup> Talen and Knaap 2003

<sup>39</sup> Pendall 1999, 2000

<sup>40</sup> Levine and Inam 2004

<sup>41</sup> Downs 1999

<sup>42</sup> Johnston 2006

<sup>43</sup> Professor Chris Nelson, as quoted in Levine's *Zoned Out*, 2006.

<sup>44</sup> Levine 2006



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<sup>45</sup> Ewing, Reid, et al, *Growing Cooler: The Evidence on Urban Development and Climate Change*, Urban Land Institute, Washington, D.C. 2008.

<sup>46</sup> An excellent description of current implementation and studies of different pricing measures can be found at: [http://ops.fhwa.dot.gov/tolling\\_pricing/value\\_pricing/quarterlyreport/qtr2rpt07/index.htm#tocb](http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/quarterlyreport/qtr2rpt07/index.htm#tocb)

<sup>47</sup> Eddington Transport Study, 2006

<sup>48</sup> Ibid.

<sup>49</sup> Ibid.

<sup>50</sup> Ibid.

<sup>51</sup> See for example Jackson, David, Sean Peirce, Margaret Zirker and Michael Baltes, "Urban Partnership Proposals: Review of Domestic and International Deployments & Transit Impacts from Congestion Pricing," Paper for the Transportation Research Board, 87<sup>th</sup> Annual Meeting, January 2008; and Cain, Alasdair and Peter M. Jones, "Does Urban Road Pricing Cause Hardship to Low-Income Car Drivers? An Affordability-Based Approach," Paper for the Transportation Research Board 87<sup>th</sup> Annual Meeting, January 2008.

<sup>52</sup> Transportation Secretary Peters, op. cit. p. 8.

<sup>53</sup> City of New York, *planNYC: A Greener, Greater New York*.

<sup>54</sup> Greenberg, Allen, Comments on REG-2008-00020 -- Pay-As-You-Drive Automobile Insurance, June 18, 2008.

<sup>55</sup> Ibid.

<sup>56</sup> Replogle, Michael, "Transforming U.S. Transportation to Spur Innovation: A Call to Support Performance-Based Transportation Funding," Discussion Draft, June 15, 2008.

<sup>57</sup> Environment and Public Works Committee summary of CSA substitute amendment, May 16, 2008.

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Re: Responses to Follow-up Questions for Written Submission  
 Senate Environment and Public Works Committee Jul 25, 2008 Transportation Hearing  
 Response Date: August 4, 2008

Senator Thomas R. Carper

*1. You have called for a "move towards a more performance-based, outcome-driven approach." What kind of standards are we talking about? How might this compare to the current review process for new transit under our New Starts program?*

The approach should be based on performance at different levels. First of all, at the national programmatic level, progress should be benchmarked against a set of social, economic and environmental goals. Establishing such goals for the program can produce dramatic results – a simple example of a goal that was set previously is that of building a world-class set of interstate highways.

Next, goals should be set for recipients of funds, at the state and regional level. An example of a goal that might be required of states was adopted by Washington in April. The state is now required to implement a plan for cutting per capita vehicle miles traveled in half by mid-century. Per capita traffic reduction plans could be required of states and large regions, which would not only cut pollution but make most effective use of existing capacity.

Last, project level requirements should be established, and the New Starts program offers a good model. Those requirements should apply across the board, to all modes. That way every project will play an effective role in a bigger plan for a region and/or state.

*2. The transportation sector is responsible for 30% of our greenhouse gas emissions. In spite of CAFE increases and a renewable fuel standard, we are likely to see transportation remain 30% of the problem because of how far people have to drive to do the basic things everyone has to do. If transportation is 30% of the problem, how much of the solution should transportation be? We included transit in the Lieberman-Warner climate change bill, and the majority of those funds went to the operation of current systems. Is the solution to emissions from the transportation sector to support existing transit? Or should we take a broader perspective?*

While the transportation sector currently accounts for a massive 28% of US greenhouse gas emissions, it also offers enormous opportunities for cost effective emissions reductions on par with its contribution to the overall issue. It is vital to take a broad view of the sector in order to tap this potential.

The CAFE standards and renewable fuel standard enacted under the 2007 EISA are both key components of this effort; a 2008 analysis by Steve Winkelman of the Center for Clean Air Policy found that these two provisions would reduce sector emissions (excluding other factors) approximately 23% from current levels by 2030. Technological solutions cannot stand alone, however; the same analysis found that the 48% increase in vehicle miles travelled (VMT) predicted by the EIA for the same period

will more than overwhelm the reductions offered by these measures. Initiatives designed to reduce the need to drive in the first place, however, may have a significant impact: improved zoning and planning to allow compact urban development may afford VMT reductions of up to 30% according to the 2008 report *Growing Cooler*, and the London congestion pricing experience suggests that more efficient cost allocation through road pricing may reduce emissions by up to 20%.

Access to reliable transit is also central in that it offers an alternative to driving. The provision of funding to transit agency operational budgets as afforded under the Lieberman-Warner climate change bill is especially important as high gas prices drive record transit utilization, but investments in hard infrastructure and expanded coverage are also needed. The nation's bus fleet was ranked in 2004 to be "moderately defective" by the Hudson Institute, for instance, and almost half of the nation's subway cars are over two decades old. Similarly, the American Public Transportation Association estimates that only one in four households has adequate access to public transit. These shortcomings need to be addressed as well. In short, the transportation sector does offer enormous potential for low cost emissions mitigation, but a successful action requires a broad perspective and dedicated effort to not only improving tailpipe emissions but also to reducing vehicle miles traveled.

**Senator Sheldon Whitehouse**

*1. In the hearing, I mentioned the fact that under the current highway authorization we do not distinguish between capital investments and maintenance. Do you think such a distinction would be useful, and that in failing to make this distinction we miss opportunities to more efficiently fund our transportation infrastructure?*

I do think that it is worth making this distinction, in part because it would help to clarify and therefore achieve performance outcomes. Capital investments could be judged based on criteria such as easy access to multiple transportation alternatives for as many citizens as possible and implications for future land development. Maintenance financing could focus on achieving a satisfactory level of good repair for an increase percentage of route mileage, with the ultimate goal of 100%.

*2. Would knowing the relative cost-effectiveness of capital spending projects be helpful in determining which such projects to fund?*

There is such a process in place for New Transit Starts, entailing Federal Transit Administration rating of projects based on local financial commitment, cost-effectiveness, land use effects, environmental benefits and mobility improvements. It makes sense to require that similar criteria apply to all modes, including highways. Should these criteria or others be adopted to help determine which projects to fund, cost-effectiveness should either defined broadly and/or complemented by measurements of co-benefits such as improved air quality benefits, water quality improvements, ecosystem benefits, public health benefits, travel time reductions, improved mobility and access to transportation alternatives and safety improvements. Cost-effectiveness should also include an accounting for costs to public sector budgets, which benefit in the long-term from smart capacity management that reduces or postpones the need to invest in new infrastructure. For example, For example, the Sacramento Area Council of Governments (SACOG) shows approximately \$20,000 per unit in overall infrastructure cost savings due to the adoption of a preferred growth scenario over a base case business as usual scenario, which is projected to save 12% or \$1.8 billion in infrastructure costs by through 2050. (SACOG 2001)

*3. Would knowing the relative cost-effectiveness of maintenance projects be helpful in efficiently prioritizing such projects?*

Please see my response to the last question, since I believe similar logic applies to maintenance projects. One difference is that funding of maintenance projects should receive priority in order to achieve a state of good repair for 100% of the system, or as close as possible. This sets the bar high, but as successful private sector companies like Toyota have demonstrated, there is little harm in setting "stretch goals" which seem impossible. (see Emi Osono, Norihiko Shimizu and Hirofumi Takeuchi, *Extreme Toyota: Radical Contradictions That Drive Success at the World's Best Automaker*, 2008)

**Senator James M. Inhofe**

*1. In your testimony, you talked about mileage-based road pricing as being an important concept moving forward, whether as a means of trying to reduce vehicle miles travelled or as a way to move away from the current gas tax as our main source of funding for transportation investments. When this idea has been raised before to this Committee, members on both sides of the aisle have expressed privacy concerns. Do either of you share those concerns? Are there examples either here or internationally of how to implement this kind of pricing system without raising privacy concerns?*

Privacy is a concern, but with the right program design it can be addressed. Professor David Forkenbrock of the University of Iowa has studied and described various means to do so (including limited data collection, encryption of data, etc.) in his publication *A New Approach to Assessing Road User Charges* (2002).

Oregon, the first state to adopt a gasoline tax, fittingly also piloted this new mechanism for generating revenue in a March 2006 to March 2007 program, as described in the Transportation Research Board paper "So Simple It Could Work! The Oregon Road User Fee Concept: Lessons Learned from the Pilot Program (Whitty, J., Imholt, B., Redman, D.H., TRB 2008). 260 volunteers were charged for mileage driven at two service stations, with privacy protected by:

- Not storing or transmitting point location data;
- Making all on-vehicle device communication short-range; and
- Ensuring that "the only centrally stored data needed to assess mileage fees was prior zone mileage totals for each vehicle."

Oregon's experiment was simple to administer, since it required payment at the pump, making it easier on the motorist, business owners and government than a new billing system. This would also allow for phasing in alongside the gasoline tax, with new vehicles charged in this new way. As the fleet turns over, the new fee would take over. As Professor Forkenbrock notes, the charge can even be varied to address other policy goals, for example via variation according to time-of-day to lower congestion and according to fuel economy to reward the purchase of more efficient vehicles. Volunteers in Oregon were certainly pleased with the new system – 91 percent said they would continue with the program if it were adopted at all service stations.

In sum, while there are privacy concerns, they can and should be addressed with proper safeguards.

*2. Under our current statute and regulations, it takes a major project an average of almost 7 years simply to make it through the environmental clearance process - to say nothing of the time it takes to finance, design and construct the project. If the cost of a \$100 million project increases at 10% a year over that period of time, the project will cost almost \$195 million by the time a Record of Decision ("ROD") is reached. Our budgets are being tapped out and our citizens are crying out for relief from traffic congestion. Isn't there a way that we could streamline the process, while still providing environmental stewardship?*

Project delivery improvements are indeed possible. Proper diagnosis of the issue is necessary in order to design appropriate policy. The latest figures I have say that a mere three percent of federally-funded transportation projects require the preparation of an Environmental Impact Statement (EIS), the most labor- and time-intensive of analyses, and that 62 percent of project delay is due to factors other than environmental reviews, such as a lack of funding, local controversy, low status on a priority list and sheer project complexity. These data points seem to imply that most projects are delayed for a variety of reasons, with only a handful slowed down by environmental review requirements per se. As Congress considers new renewal of the transportation bill, a more current inventory of reasons for project delay would be helpful.

One way to reduce delay on the delivery end of the process – no matter the reason for delay, environmental or otherwise -- is to frontload greater public involvement and transparency. A 2000 National Research Council report, "Technologies to Improve Environmental Concerns in Transportation Decisions" described some advances that would make a big difference, including new collaborative planning and design processes, use of GIS to determine natural and community constraints on a project (called "gap analysis"), and computer visualization programs that allow users to view a proposed project and its potential impact in three dimensions. A panel of experts that reviewed the report concluded that these and similar techniques would expedite transportation projects, but as of 2000 few states had put them to use.

SAFETEA-LU included requirements and incentives for the use of such tools, as well as use of context-sensitive solutions (CSS) in project design. It would be worth looking at state and local progress towards these goals. Tennessee Department of Transportation (TDOT) has overhauled the way it does business in order to improve the review process and project delivery, incorporating the requirements of SAFETEA-LU. As described in "Tennessee's 2007 Environmental Procedures Manual Provides a New Resource for Environmental Analysis and Documentation Under SAFETEA-LU" by Nancy Skinner and Douglas Delaney (TRB 2008), the state has developed the Tennessee Environmental Procedures Manual (TEPM) as a key resource. While the manual – which maps out a route to project delivery that includes better coordination, public involvement and consideration of environmental concerns – is a touchstone, the state has taken other notable steps to rebuild a trusting relationship with a public that had lost faith in the transportation agency. For example, environment and planning was elevated on par with highway development within TDOT and the community relations department was also given a direct line to the Transportation Commissioner. The Department then halted and conducted a review of 15 controversial projects, hearing the public out regarding various concerns with them. Some projects were cancelled and some were altered following the CSS method, and another lasting consequence is the adoption of a CSS philosophy for all TDOT projects.

What TDOT has done is a potential model for the federal government, and provides additional evidence that an inventory of state and local progress in developing similar programs is in order. Encouraging and

supporting such local and state efforts is the best way to speed up delivery while improving environmental outcomes.

*3. Many criticisms of the current federal program are based in its lack of a results oriented focus. How would you recommend that Congress structure a performance based, outcome driven approach in order to yield a greater return on our highway investments?*

There is such a process in place for New Transit Starts, entailing Federal Transit Administration rating of projects based on local financial commitment, cost-effectiveness, land use effects, environmental benefits and mobility improvements. It makes sense to require that similar criteria apply to all modes, including highways. Should these criteria or others be adopted to help determine which projects to fund, cost-effectiveness should either be defined broadly and/or complemented by measurements of co-benefits such as improved air quality benefits, water quality improvements, ecosystem benefits, public health benefits, travel time reductions, improved mobility and access to transportation alternatives and safety improvements. Cost-effectiveness should also include an accounting for costs to public sector budgets, which benefit in the long-term from smart capacity management that reduces or postpones the need to invest in new infrastructure. For example, the Sacramento Area Council of Governments (SACOG) shows approximately \$20,000 per unit in overall infrastructure cost savings due to the adoption of a preferred growth scenario over a base case business as usual scenario, which is projected to save 12% or \$1.8 billion in infrastructure costs by through 2050. (SACOG 2001)

Among those who emphasize the dearth of a performance basis for federal transportation investments is the current Transportation Secretary, Mary Peters. In fact, I believe U.S. DOT is quite right when they summarize the issue on page 13 the new "Refocus. Reform. Renew. A new Transportation Approach for America" proposal for reauthorization (which, while imperfect, contains several laudable concepts and is ambitious in its scope and scale, befitting a federal program that is breaking down):

*Establishing quality and performance standards.* Measuring and improving performance must be an integral part of a new national transportation program structure. For too long, transportation "success" has been measured in relation to the size of the capital stock as opposed to how well that capital stock is producing positive mobility, safety, and other benefits in a sustainable way. Levels of congestion, quality of pavement, safety of bridges, transit load factors, and availability and reliability of information are among the most important indicators of how well the Federal program is achieving its objectives. States and metropolitan areas receiving Federal funds should be asked to establish performance targets and measure and publish their achievement of these targets. In addition, discretionary grant criteria should be used to further incentivize States and metropolitan areas to allocate resources efficiently to advance clearly defined performance objectives. The development of standardized performance areas and measures would facilitate the application of benefit-cost and cost-effectiveness analysis of projects. A strong performance emphasis will also greatly expand the ability of transportation users to participate in the transportation planning, funding and management process. Current approaches are neither appropriately transparent nor accountable to transportation system users.

Senator BOXER. Thank you very much.

Our last speaker is Dr. Samuel Staley, Director, Urban and Land Use Policy at the Reason Foundation. Welcome, sir.

**STATEMENT OF SAMUEL R. STALEY, DIRECTOR, URBAN AND LAND USE POLICY, THE REASON FOUNDATION**

Mr. STALEY. Thank you. I am very pleased to have this opportunity to speak to the Committee on this issue.

What I would like to do in the few minutes is to really emphasize three different points, one of which is probably the most important. Also I think it is off the radar screen of many not only in the policy community, but also in much of the planning community. That is the way that mobility and travel patterns have changed so significantly over the last 30 years, which has created a very important challenge.

Very often what I will find is that the debate over the Federal role tends to be framed in the historical context of the Interstate Highway System. However, if we look at the way travel patterns have changed and we look at those particularly in urban areas, where most of our congestion is, not to dismiss the importance of rural areas—and I will get back to that in a few minutes—but what we are finding is that travel is much more complex and much more dynamic than it has been in the past.

If we look at the nature of the traffic congestion in particular, as well as the kinds of bottlenecks that are emerging that are interfering with our freight system, much of that is wrapped up in the dynamics and the complexity of these travel patterns. Notably, in most urban areas, 85 percent of the traffic is not interstate or through-traffic. It is local traffic that is using our Interstates as a local connector. More than half of the traffic on our Interstates in urban areas in peak times is in fact not work traffic. So the commuting element of our travel has been reduced significantly.

What this really means for me, as someone who really focuses on urban economies and productivity, is that when we are looking at issues of traffic circulation, and when we are looking at issues of traffic congestion, on the urban level we are really looking at a local problem. The local and regional organizations are going to be in the best position to address those concerns. So there is an important element of redefining the Federal role to enable State and local organizations, as well as regional organizations, to address traffic congestion and transportation capacity issues, using as many tools as possible.

I think we also need to make sure that this debate over the future of transportation and the Federal role keeps in mind that there will be significant adjustments in behavior, and most of those adjustments, particularly by consumers of travel, are going to be to maintain mobility. What we know historically, as well as through data analysis, is that wealthier nations and, wealthier cultures value mobility and they will pay to maintain that mobility.

Now, in the context of the current case, particularly with gas prices going up, what that means is that there are tremendous incentives to adopt and develop new technologies that will enable to maintain that mobility while minimizing the actual out-of-pocket costs. I will just use us as a quick example. Simply shifting most

of your miles from a minivan to a Toyota Prius essentially gives you a fiscal net-positive cash-flow even in the current environment with gas prices. I actually ran the calculations, and personally that is what we did in my family. So we are preserving our mobility without having to move our house or move our household in a significant way. We need to keep that in mind.

But tied into that, and keeping in mind that technology, and that we will see trends toward less and less use of oil, we are seeing the technology come on-board, which is allowing us to move to different types of ways to power that mobility. We need to make sure that we are not too keyed into short-term changes in energy markets when we are thinking about long-term changes in travel behavior.

The final thing is that it is critical that we find and create new tools for bringing new resources into the transportation problem. At the Reason Foundation, we have talked an awful lot about the importance of being able to tap into private capital to finance new infrastructure. Certainly, looking at road pricing should be a critical part, we believe, of this Committee's deliberations and the use of public-private partnerships to enable local and State governments and regional entities as well to begin to develop infrastructure in order to meet the travel needs of local regions.

Now, this is not to dismiss the importance of rural investments. In fact, I think that what we will have to do is re-think what the Federal role is on a number of different issues. I think we believe that rural maintenance of major road infrastructure, particularly as it relates to freight corridors, will remain a Federal role and an important one as well.

But probably the most important thing from our view that the Federal Government can do is to allow more tools and resources to be available for local and State entities to use creative financing to meet these transportation and infrastructure capacity needs.

Thank you.

[The prepared statement of Mr. Staley follows:]



## **The Future Federal Role for Surface Transportation**

### Written Testimony of:

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### Prepared for presentation to:

U.S. Senate Committee on Environment and Public Works  
 Room 406, Dirksen Senate Office Building  
 25 June 2008, 10:00 am.

Chairman Boxer, Senator Inhofe, other members of the committee, thank you for giving me this opportunity to discuss surface transportation priorities for the federal government. We are at a time ripe for completely rethinking the role of federal, state, and local governments in transportation policy not seen since the 1950s. This crossroads has been created by two overarching forces, one obvious and the other more hidden.

### **Two Driving Forces**

The first force driving our need to rethink transportation is the obvious underinvestment in US infrastructure. While the Minneapolis bridge collapse was one of the more visible clarion calls to focus on our nation's infrastructure, estimates of the annual funding shortfall to maintain and improve our existing network range upwards of \$75 billion. The National Surface Transportation Policy and Revenue Study Commission estimates that a comprehensive upgrade and investment in our transportation network—road, rail, water, and air—would approach \$200 billion. Moreover, the Highway Trust Fund, the primary source of federal funding for surface transportation, is likely to end up in the red by 2009 (and the transit fund by 2012). If the highway trust fund were a private business, it would be nearing bankruptcy and its bond rating would be lurking near junk status.

The second force driving the need for a complete overhaul of federal transportation policy is the way our urban economies are evolving, both regionally and globally. Fewer than 15% of trips in urban areas are for commuting purposes. Many of these commutes are no longer traditional home to work trips, but “chain” multiple purposes. Even in peak periods, 62% of trips on our roadways are for nonwork purposes. Twenty two percent of all trips are primarily for family and personal business purposes. Another 20% are for shopping. Indeed, the largest share of trips is “other.” Our travel patterns are so complex and diverse, we cannot even aggregate them in a meaningful way. Not surprisingly, more than 85% of the traffic on our urban interstate is, in fact, local traffic. When interstates

are effectively local roads, its time to rethink the way we manage and fund our transportation network.

Of course, the funding deficiency in and of itself calls for a dramatic rethinking of the way we approach transportation policy. But, this comprehensive reform needs to include more than just new opportunities for funding. It needs to consider how our federal priorities should be set and, more fundamentally, rethink and reframe the roles of federal, state, regional, and local governments in providing transportation services.

### **The Changing Federal Role in Transportation Policy**

The funding challenges and changes to our urban economies have profound implications for the federal role in transportation policy. I believe four issues rank paramount as we move forward.

1. A national, coordinated plan for transportation is not feasible or workable. Unlike the immediate post-World War II period, a clear national vision for a national network of highways and interstates is no longer possible. The Interstate Highway System had a clear vision—link the nation’s major urban centers. Our economy is far too complex for such a simple vision to work any longer. Traffic congestion is largely a local and regional phenomenon, and local policy strategies will have to be tailored to local needs and concerns. The federal government is simply not suited to determining where a new regional beltway should be located, or which intersections should be upgraded, or even what mass transit technologies will best meet the needs of local travelers.
2. Road pricing will play a crucial role in managing and financing urban transportation networks efficiently. Simply widening roads and laying more asphalt will not solve congestion problems or improve traffic circulation effectively. The right capacity will have to be put in the right place at the right time using the right technology. This will require harnessing the information generated by market-based mechanisms such as road pricing. Road pricing provides two essential functions for maintaining a well functioning and efficient transportation system:
  - a. It creates a sustainable funding source by linking customers and their willingness to pay to the physical provision of facilities. The Indiana Tollroad lease agreement, for example, requires that the provider maintain specific levels of service to ensure free flow conditions and high levels of road maintenance.
  - b. Pricing provides key information to road managers and drivers about the cost of using roads and other transportation facilities at particular times of the day according to the level of use. In short, road pricing allows us to manage our road networks and facilities more efficiently to optimize their use. Notably, the SR 91 Express Lanes in Orange County, California guarantee free flow (65 mph) speeds for all users and carry more than 40% of the corridor’s traffic despite providing just 33% of the physical road

capacity. One lane on the express lanes carries nearly double the traffic of a regular lane, during the busiest rush hours. Pricing allows the toll road authority to achieve these performance levels.

3. Private capital will play an essential role in addressing our transportation network capacity problems in the future. The federal government should facilitate the use of private capital as a way to augment the resources of state and local governments looking for ways to upgrade their infrastructure. The Indiana Toll Road lease is again instructive. The State of Indiana faced a funding shortfall of nearly half of its 10 year transportation plan. The \$3.8 billion in upfront revenue generated by the lease allowed it to fully fund its plan and ensure the highest priority projects would be finished on schedule. Pennsylvania has the same opportunity with a potential \$12.8 billion upfront payment from the private sector for the lease of the Pennsylvania Turnpike. Of course, other nations, particularly Australia and France, have used public private partnerships to fully fund the construction, maintenance and operation of major infrastructure projects, particularly tunnels. Public private partnerships will be a critical ingredient of any state's (or urban area's) ability to meet its transportation needs in the 21<sup>st</sup> century. Private companies are successfully managing major road facilities worldwide. The longer the US delays the entry of experienced engineering and road management firms into domestic transportation markets, the more our competitive economic edge will soften and erode.
4. The federal role should be restricted to those activities with a clear interstate and/or international function. Rather than focusing on an overarching vision for transportation on the local and regional levels, federal transportation policy should focus on those elements of the transportation network that are truly national (or international) in nature. The US freight system is fundamentally interstate (and multimodal) and international in orientation. In commerce, we talk about global supply chains, not local ones, even in retail and local service industries. Focusing federal efforts on coordinating and upgrading key freight corridors will be essential for focusing federal funding and decisionmaking productively. Another key role the federal government can play is in facilitating interstate cooperation on key infrastructure projects, particularly bridges and tunnels that link key cities and parts of urban areas. A third critical federal focus should be on our nation's ports and airports to ensure we have the facilities to remain globally competitive and goods move efficiently to (and from) markets throughout the US.

#### **The Eroding Force of the Gas Tax**

Of all the elements of federal transportation policy, our current funding mechanism is probably the most vulnerable and obsolete. Any funding system that relies on oil-based fuel technology is at risk. The rising cost of gasoline (a 75% increase since 2005) is reinforcing current trends toward more fuel efficient vehicles as well as alternative energy power sources for automobiles. Vehicle miles traveled are down 2.3% over the last year, and fuel efficiency standards will reduce the yield from the gas tax even further.

(Fuel efficiency has already increased 54% since 1975.) Already, 21 gas-electric hybrid trucks and cars are sold on the US market, and 65 models expected to be available by 2010. The all-electric Tesla sports car is a harbinger of what will be standard technology within a generation, particularly as the market accelerates the move toward alternative fuels as oil is increasingly diverted to meet the growth needs of Brazil, Russia, India, and China. Indeed, Honda is already entering into limited production of the fuel cell powered FCX Clarity, a 4-door sedan that it hopes to have in mass production within 10 years.

These trends in energy use and substitution also raise the specter of the need to find an alternative funding mechanism for transportation projects of all sizes and types at the federal, state, and local levels. In the intermediate term, the technology exists to increase the share of tolling as a revenue stream for limited access highways and regional urban road systems. In the long run, we will likely to have to consider some form of mileage-based road pricing approach to fully fund our transportation systems.

### **Mobility in a Globally Competitive Economy**

In conclusion, mobility is critical to the economic success and competitiveness of a modern economy. Mobility is particularly important in a services-based economy that relies on human capital. Moving human resources quickly and efficiently, meeting the myriad of transportation needs of business and residential life, is an essential element of maintaining a high quality of life as well as low production costs. Indeed, research has consistently shown that mobility is more highly valued in higher income nations, and households are thus willing to devote a larger share of their family budget to purchase it. Higher income nations also have the wealth and income to afford the changes in buying habits and products necessary to maintain this mobility. Thus, federal policy must retain its focus on increasing mobility (for goods movement *and* people) as a key component for transportation policy.

Part of this approach will be to recognize that some elements of transportation policy (e.g., congestion relief) are ripe for devolving to the state and regional level and others (e.g., freight corridors and ports) will require a more strategic focus from the federal government. We will also need to come to grips with finding alternative sources of funding in an age of dwindling oil resources and limited public capacity to fund needed improvement to the transportation network.

Thank you for your time and attention, and I look forward to your questions.

*Responses to Follow Up Questions for  
Samuel R. Staley, Ph.D., Reason Foundation*

**Question from Senator Thomas R. Carper**

*1. In your testimony, you said that 62% of trips on our roadways are for non-work purposes, including shopping or family business. You also stated that our travel patterns have become more complex. But people have been going to the grocery, clothing stores, schools, the post office, etc. for a very long time. Why has travel to these necessities become so complex? Shouldn't our transportation policy strive to make running basic errands simpler?*

The automobile has allowed us to greatly expand the geographic area within which we can access different services, products, and even friends. A 15 minute trip (one way) by foot allows us access to stores, services, and friends within one mile. A 15 minute trip by car can give us access to a myriad of services within 5-10 miles. It's not the services themselves we access, but the variety of services and our ability, as consumers, to promote the diversity of services and products. This is what has added to the complexity of our travel patterns. It's not that we have access to a grocery store; it's that we have access to several grocery stores and we can choose the one that suits our wants most effectively. Grocery stores, and other services and even employers, are forced to compete with one another based on price, product selection, and shopping experience, all of which benefits consumers.

This broadening and diversification of choice has been influenced by three fundamental changes in technology and our economy.

1. Technological: The widespread adoption of the automobile has given us access to a much wider variety of goods and services and has allowed individual travelers to customize trips to fit their needs. Travel is not as time intensive as it once was, and it is not tied to fixed incomes and routes through public transit, allowing us to do more in a shorter amount of time. By exploiting technology, we have created a larger and more competitive marketplace for the services and things we value, whether it is having greater access to day care, to meeting with friends and family outside of our immediate neighborhood, or visiting the doctor or dentist that we prefer.
2. Economics 1: The rise of two-income families has meant that residential choice involves a trade-off between different home and work preferences within a household. When families were dominated by one primary income earner who commuted to work, choosing a residential location was simple: move to a home (or neighborhood) within an accessible distance from work. Now, families often choose neighborhoods based on the quality of schools, the scheduling flexibility and requirements of two jobs, and neighborhood quality.
3. Economics 2: Services-based economies tend to be more flexible and malleable to individual and family needs. Unlike factory work, which tends to organize labor around shifts or the assembly line, service industries tend to be more flexible with schedules and output. Thus, a manager or saleswoman has much more influence over his or her daily schedule. This is likely to become even more true as telecommuting and outcome-based work becomes more common. Workers will customize their work schedule to conform to personal and family needs, making travel patterns even more complex. Even now, telecommuters outnumber public transit riders in half of the US's largest urban areas.

Greater household wealth and flexible transportation technologies enable a much greater degree of trip chaining (linking multiple destinations in one trip) and choice over when and where we travel than in previous generations.

*Responses to Follow Up Questions for  
Samuel R. Staley, Ph.D., Reason Foundation*

**Questions from Senator Sheldon Whitehouse**

*1. In the hearing, I mentioned the fact that under the current highway authorization we do not distinguish between capital investments and maintenance. Do you think such a distinction would be useful, and that in failing to make this distinction we miss opportunities to more efficiently fund our transportation infrastructure?*

Yes, I believe distinguishing between capital investments and maintenance is important. Capital projects usually involve large initial investments that are expected to pay returns over a long period of time. Maintenance, on the other hand, represents the short-term investments necessary to keep the facility operating at its expected level of output and efficiency. Maintenance spending also allows these facilities to hold their value over a longer period of time, extending their useful economic life. Separating capital investments (one time "sunk costs") from maintenance (ongoing investments in the physical plant of the facility) makes a tremendous amount of sense when these facilities are managed over their economic life cycle.

*2. Would knowing the relative cost-effectiveness of capital spending projects be helpful in determining which such projects to fund?*

Yes. Capital spending projects should be evaluated according to their effectiveness in achieving policy goals relative to other types of projects. If our goal is to reduce congestion, we should be able to compare the relative cost of achieving a particular congestion target using transit, expanded highway capacity, pricing, changes in land use, etc. Examining the relative cost-effectiveness of each strategy should be a key criterion for determining which alternative makes the most sense—maximum output for minimum cost.

*3. Would knowing the relative cost-effectiveness of maintenance projects be helpful in efficiently prioritizing such projects?"*

I am less convinced that cost-effectiveness criteria would be as relevant to maintenance projects. The goal of maintenance is to ensure the transportation facility, whether it is road or transit, continues to provide its intended (or engineered) level of service. Of course, the choice of technologies (e.g., materials used to maintain road performance) should be subjected to some assessment of relative cost and benefit, but these decisions are likely best left to the managers of the facility who should be focused on a specific outcome—maintaining a certain level (or quality) of service. These decisions have more to do with management and administration of programs than broader policy goals and thus should be left to those responsible for managing the facilities. The implications for public policy are less significant for maintenance projects than for major capital improvements.

*Responses to Follow Up Questions for  
Samuel R. Staley, Ph.D., Reason Foundation*

**Questions from Senator James M. Inhofe**

*1. Mr. Lovaas suggested at the hearing that heavy transit investment and higher fuel prices will move people out of their cars and onto bikes, trains and sidewalks. How much stock should be put in his model of controlling emissions by curtailing auto use?*

I see little or no evidence that a heavy investment in transit will draw people out of their automobiles. A case in point: We've seen higher gas prices contribute to reducing automobile vehicle miles travel (VMT) by about 3% over the last year. That translates into a reduction of about 31 *billion* passenger miles. Yet, even by the American Public Transportation Association's estimates, higher transit use only represents an increase of 450 *million* passenger miles. In short, even as all those people are driving less, transit was able to claim less than 2% of the reduction in VMT.

Most people rearranged their schedules, linked trips that were separate before, or simply stopped driving. They didn't get on buses or trains. This trend may very well reverse once adequate substitutes such as new gasoline-hybrid electric vehicles become more efficient and more widely available. Indeed, a switch to a Toyota Prius from a minivan would more than compensate for the increase in gas prices.

Mobility is what economists call a "normal good": We will consume more of it as our incomes go up. This has been universally true in every nation across the globe. Transit is what economists call an "inferior good": We consume less of it as our incomes go up. Wealthier societies choose transportation options that give them more flexibility and adaptability, not less. Traditional transit limits the traveling public to someone else's schedule and route; traditional transit can also be very unreliable.

Transit proponents often argue that more people use transit when it is close by. The rule of thumb is that transit use is maximized when people live and work within a quarter mile of a transit stop. Advocates neglect to point out that those neighborhoods and places (e.g., Manhattan or downtown Chicago) where transit is widely available tend to be more congested and dense, degrading the efficiency of automobile travel, not enhancing the quality of the transit trip. Moreover, even in these cases, transit rarely captures the majority of trips; typically transit captures 20% to 30% of the trips within a quarter mile of a transit stop. In places such as Manhattan, extraordinarily high densities tend to boost walking.

Transit is like substituting hamburger for steak. If households have the money, they will choose steak in almost every case. Steak usually tastes better, and it is a healthier choice. A policy environment where most people have to eat hamburger because steak is no longer available reduces everyone's welfare. It's still meat, but the quality of the meat is fundamentally different, and the benefit we receive from consuming it is lower as well.

*2. In your testimony, you talked about mileage-based road pricing as being an important concept moving forward, whether as a means of trying to reduce vehicle miles traveled or as a way to move away from the current gas tax as our main source of funding for transportation investments. When this idea has been raised before to this Committee, members on both sides of the aisle have expressed privacy concerns. Do you share those*

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*concerns? Are there examples either here or internationally of how to implement this kind of pricing system without raising privacy concerns?*

Reason Foundation is deeply concerned about privacy issues, so the potential for GPS or other technologies to violate individual privacy is of paramount importance to us. We believe, however, that the technologies exist to overcome these concerns as long as transportation policy (and any enabling legislation) explicitly recognizes that privacy remains a critical underlying value of reform and part of legislative intent. On a more practical level,

- Oregon's GPS experiment uses receivers that only register miles so that they can be logged at the gas pump in order to assess the mileage tax; they do not transmit specific information about locations or individuals. Individuals participate by enrolling in the program, and providing information for billing purposes, much like applying for a credit card.
- Many new toll roads have both transponder technology (which requires enrolling in the program and leasing an electronic device) as well as video license plate recognition for law enforcement and per use billing. These systems have experienced few objections from users. Indeed, some tollroads (e.g., 183A outside Austin) have found that market penetration exceeds 90% in adjacent zip codes.
- In still other cases, such as in Puerto Rico today, debit cards can be purchased that work with transponders. These are similar to disposable cell phones in that no private information is collected involuntarily.
- Tollroads are rarely the only option available to motorists, so their use is almost always voluntary and implies (like purchasing products with a credit card) a willingness to divulge personal information for billing and accounting purposes.

Thus, we believe privacy concerns can be adequately addressed through the marketplace as well as by placing the appropriate limits on public agencies through well-designed legislation.

*3. Mr. Lovaas testified in support of reducing the environmental impact of the transportation sector by getting the federal government involved in local land use planning in order to encourage dense development. Do you agree with his comments? Is it really clear that the benefits will be as great as advertised?*

Using land-use planning to influence transportation choice is a very indirect policy approach, threatens the principles of Federalism, and is likely to have a minor impact overall on regional transportation patterns and the environment. Land-use planning has traditionally been the purview of local government and enabled through state legislation. Thus, federal involvement would implicitly undermine state and local sovereignty. Federal courts have routinely upheld state and local land-use planning authority, but active involvement by the federal government to support a specific land-use outcome would extend far beyond simply enabling the use of a regulatory approach to land use and place federal goals above local ones.

More problematically, the transportation benefits are indirect at best and are likely to be small when successful. While under the best circumstances dense development has reduced the number of automobile trips, the densities required to achieve this goal are much higher



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than current market preferences (based on the kinds of houses people actually buy) and would likely be relevant in very few places. Moreover, the densities necessary to reduce automobile travel will likely be high enough they will work against environmental goals since very high densities (four story townhouses or higher) tend to produce more greenhouse gases than low-density suburban developments and slow traffic speeds actually boost carbon dioxide emissions from automobiles.

Moreover, the impact on regional land use patterns would be marginal at best. While there is some academic evidence that travel patterns may change in a very concentrated neighborhood location, transportation patterns on a regional level would not change significantly since most Americans would still live in low-density suburban locations. Transit agencies continue to lose market share in most US metropolitan areas, including cities that have invested heavily in light and commuter rail.

The federal government should be neutral on land use planning and residential choice, leaving these decisions to state and local governments. More importantly, the federal government should recognize the nuanced and subtle decisions that are made in the housing market and resist the temptation to impose a specific urban form; instead, the government should allow households and individuals to make the decisions about neighborhoods and housing that they believe meet their needs most effectively. In some cases, these choices may be dense urban neighborhoods. In other (most) cases, these choices involve lower density settings most suitable to the customized travel provided by the automobile (whether powered by electricity or gasoline). Trumping these choices is not the proper role of the federal government.

Senator BOXER. Thank you, sir.

Well, we are going to go back and forth, 5 minutes each.

Let me say, Mr. Staley, our family made the Prius change as well. It is a big difference when you can take a car and get over 50 miles per gallon. It is a big difference, and it does help you continue to move and not feel the changes as others are feeling it. My hope is that our American car companies will step up to the plate. They are starting to do it, and it will change the nature of the debate, I think. So I wanted to mention that.

Now, I am going to go to you, Mr. Grenzeback, because you said, and I want to make sure I got it right, that we are falling short \$50 billion a year. That is what the Chamber of Commerce said? Who did you quote on that? You said we are falling short \$50 billion a year. Is that what you said?

Mr. GRENZEBACK. Yes. We have done two studies.

Senator BOXER. When you say we?

Mr. GRENZEBACK. My firm, Cambridge Systematics. We have done several studies within the last 4 to 5 years, the first was for the U.S. Chamber of Commerce and the second was for the Transportation Research Board. We have done similar work for the Federal Highway Administration and AASHTO. All these studies looked at the difference between current revenues and the level of experience needed to maintain or improve the Nation's highway and transit systems.

What you find is that if you look out over the next 10 years, the gap between current revenues and what you need to maintain the system—

Senator BOXER. Just to maintain it?

Mr. GRENZEBACK. Just to maintain. To maintain the condition of pavements and bridges and keep congestion at about the same level it is today, and is running in the range of about \$50 billion per year for highways, and you would add another \$8 billion to \$10 billion for transit.

Senator BOXER. Oh, my goodness.

Mr. GRENZEBACK. If you want to move to the next level, which is to try to improve the performance of the transportation system—that is to invest in projects that have a positive economic return to the economy—you could double that.

Senator BOXER. OK. Oh, my goodness. Stop right there.

I just want to proceed, then I will call on you, Mr. Pisarski.

This is kind of sticker-shock, so I just want to go through this with you and just talk it out.

You are saying that just to maintain what we have, does that mean major fixes to bridges that are falling down, I trust?

Mr. GRENZEBACK. Yes, I would hope so.

Senator BOXER. Yes. OK. So to maintain what we have, do the infrastructure repairs, and rebuilding of what we have, just for the highway piece, we are short \$50 billion a year. If we look over at the transit side, we are short about another \$10 billion a year.

Mr. GRENZEBACK. In round numbers, yes.

Senator BOXER. OK. So just for my colleagues to know, and my staff will correct me if I am wrong, the last bill we passed was \$286 billion over 6 years. If we adopt just the \$50 billion, and ignore the

transit part for a minute, it gets us to \$586 billion of a bill that we would need to pass just to maintain what we have.

Mr. GRENZEBACK. Yes. We have built a very extensive road system, excellent highways.

Senator BOXER. I am not challenging you.

Mr. GRENZEBACK. We must maintain that system.

Senator BOXER. I am not challenging you. I agree with you. I am just trying to get it in my head what this Committee is faced with. Max called it exciting. He is right. It is exciting and challenging, which leads me—and I will get to Mr. Pisarski in a minute to comment on the question—but I think Senator Inhofe and colleagues on both sides, you know, when the House, both Don Young and Oberstar came out and said they needed a \$500 billion bill, I looked at my staff and said, well, what are we going to get for that? They basically said we are going to be able to do what we are doing, but make sure we keep everything up. It is just something we need to think about as we go forward.

Mr. Pisarski, I am going to call on you, but before I do, I hope you will answer this. We are all looking at creative ways to be able to pay for this. Senator Inhofe and I are going back and forth with new ideas and thoughts on how. And I know Senator Baucus is going to have a major, major, major role in his committee on all of this.

So could you, Mr. Pisarski, first of all confirm if you agree with this \$50 billion number, and it is \$60 billion if you go to transit? And second, if you have any thoughts of how we could look at the funding gap, and what ideas you have for funding. And then I will open it up to the rest of the panel to see if you have ideas for funding. But why don't we start with you?

Mr. PISARSKI. Thank you, Madam Chairman.

Yes, in fact I worked on the Chamber study and the Transportation Research Board study with Lance. I testified a couple of weeks ago in the House that our current backlog is about one and a half reauthorizations worth of funding. The numbers that Lance used are now a year old, and with the increases that we have seen in the cost of materials, the numbers will be higher for sure.

Senator BOXER. Does that include State share?

Mr. PISARSKI. Yes, ma'am.

Senator BOXER. OK. That is important.

Mr. PISARSKI. We are talking about total national capital.

Senator BOXER. OK. That is good. That is better.

Mr. PISARSKI. It is total national capital.

Senator BOXER. That is better. And the State share is about 25 percent?

Mr. PISARSKI. It is 25 percent of total amount, but 50 percent of capital, roughly 50/50. Susan Binder, who used to do the condition performance report, is painfully aware of this work. The new Condition and Performance report that will be coming out in 2006 I would assume would update these numbers.

Senator BOXER. OK. My time has expired, and no one has given us the golden answer. But let me just say, I want to take a minute. Bettina, would you introduce Susan? I think everyone on both sides should know about this exciting new hire we made. So Bettina?

Susan, stand up. Tell them her background.

Ms. POIRIER. She worked for the government for over 30 years, including DOT and the Maryland Department of Transportation, and was the Executive Director of the blue ribbon panel.

Mr. PISARSKI. Madam Chairman, may I say that USDOT only lost about 20 percent of its capability when Susan came over.

Senator BOXER. We are thrilled that she did do this. We are very happy. We think that she has proven she can work with both sides. This is good for our Committee.

Anyway, Senator Inhofe?

Senator INHOFE. Let me say also, Madam Chairman, that we on the Republican side love Susan just as much as you do.

[Laughter.]

Senator INHOFE. Let me make one comment.

Mr. Lovaas, I think you are kind of fighting a trend here. We did have, as you well know, 3 weeks ago a climate bill. We know the outcome of that. I think trying to insert some of this stuff in a transportation bill that is otherwise totally nonpartisan would be doing a great disservice to our coming up with some solutions. That is just my observation on that.

Let me clarify, Mr. Grenzeback. When you talk about the figure of \$50 billion, isn't that primarily State, county, Federal? That is all dollars, and not just Federal?

Mr. GRENZEBACK. Yes, sir.

Senator INHOFE. And Federal is essentially about 40 percent of that.

Mr. GRENZEBACK. Yes, spending by all levels of government are included in that \$50 billion.

Senator INHOFE. I think it is important to clarify that. It is something that is important for clarification purposes. You know, I am going to use my time in trying to come up with something that the Chairman and I were talking about just a few minutes ago. Regardless of what happens in the upcoming election, should the majority change, it wouldn't make any difference at all as to how we are going to treat this. I am sure that Senator Isakson, Senator Baucus, the Chairman and myself are going to try to resolve this problem. We have to make some major changes.

The young lady sitting behind me, Ruth Van Mark, has been with me for over 20 years. We spent 8 years on the House side. I have to say to you guys that times have changed. Those were the good old days. We always had a surplus in the Highway Trust Fund. We sat around there and a lot of people thought we were spending too much money on transportation. Frankly, I think we were at that time. But times have changed.

Now, we are faced with a situation where we are going to have to do something. What we are talking about up here is maybe going back, just something we might be thinking about, and we can talk about this later, to the original concept.

Back when it all started 50 years ago, the amount of money that was in the trust fund was really used for expanding and just maintaining surface transportation. That is what it was all about. Maybe we need to start segregating in our minds rail, safety, surface, and go back and maybe the amounts that we would have to work with would work in surface transportation.

Now, I mentioned in my opening statement that it appears that because of the increase in the price of fuel, and people are driving less, and the Highway Trust Fund is not a percentage but a centage, which is the problem. It has gone way below expectations, to about \$8 billion, we are approximating. That happens to be about the same amount of money that in 1998 when then-President Bill Clinton looked at a \$16 billion surplus in the trust fund and took \$8 billion out of it and put it in the general fund.

My feeling is, in whatever vehicle is out there we might want to be looking at, is to undo what shouldn't have been done in my opinion, which I stated on the floor in 1998, and bring that back into the Highway Trust Fund. In fact, we have CBO and a neutral scoring that should happen.

Now, what I would like to do in this brief period of time is have each one of you, starting over here, kind of comment briefly on the idea that we just are thinking about up here that maybe go back to the original concept, and then have each of the other programs, which are very important—transit and everything else—kind of stand on their own.

What are your thoughts about that? Let's start with you, Mr. Grenzeback.

Mr. GRENZEBACK. I think that having each system stand on its own makes good sense, except that you must treat the national system as an integrated transportation system, so you will want some flexibility to move moneys among the various modes to solve capacity and congestion problems.

I think that Mr. Seely alluded earlier to the fact that in the 1800's, we had a consensus that investment in rail was the direction for economic development. In the mid-1900's, we had a consensus that investment in the highways, especially the Interstate system, was the foundation for economic development.

I think we have approached the point today where we are at capacity on almost all of our systems—highway, freight rail and transit rail. We are up against the question, again, as to where we invest strategically for economic development. I would suggest that you want to approach investment in our transportation systems this from a very broad perspective, looking at what we need to do for economic development.

Senator INHOFE. I think what we are talking about is independent funding sources, because we have to do something.

Any comments, Mr. Seely? I know my time has expired here.

Senator BOXER. If I could just jump in here, this is something we have been batting back and forth. The notion is that we need to get more funding. Let's face it, we do. So let's just say—and I am throwing this out, it is just a thought—if we decided, for example, that rail was important and we needed to make more investments in rail, who really benefits from that? Obviously, the people who ship goods in and put those containers onto the rail. If you were to be able to agree on a fee per container, that would go for rail.

So what we are trying to talk about here is a way to not try to take this dwindling Highway Trust Fund and put every single thing that we do into that. It is just not there. So that is the kind of thing we are talking about, if that helps.

Senator INHOFE. That is correct.

Senator BOXER. Yes, that type of idea. That is not a fee that we agree on or anything. That would be an idea, though. What do you think of that?

Mr. SEELY. The point that strikes me is there has always been a highway financing crisis. We have moved through a series of these. In the 1920's, with the first effort, the question was how are you going to pay for these roads. It was mainly local and State. Bonding was used. Convict labor was used. There is a long, long roster of ways to fund it.

The gas tax emerged, and one historian has called it the only popular tax in American history. Part of the logic was that people were willing to pay a penny or two for gasoline, with the understanding it would lead to improved roads. But when the Highway Trust Fund comes along, the innovation is not that we are creating the trust fund. It is that we are segregating a variety of funds and again connecting them to roads. But the Highway Trust Fund was created with an increase in funding because of the increase in the size and scale of the system to be funded.

So now we are in a situation where once again we are looking at a mechanism to do this. A whole range of different avenues have been out there. I think the crucial thing to avoid is the idea that there is a magic bullet out there. Instead, what I think we need to look at is the totality, as is being suggested here, of local, State, national funding and private opportunities so that you are able to do this.

My only concern, Senator Inhofe, is that if you start thinking again of individual forces, you find yourself back in, then, one answer, one piece. But again, the issue of integration is the fundamental challenge. The InterState highway system inadvertently had a major detrimental impact on the Nation's rail system. Funding for airports also in the 1950's again had a detrimental impact. No one considered the unintended consequences for other modes of transportation.

Senator INHOFE. I appreciate that. I am not sure I agree with you totally. If I could just get one comment from Mr. Pisarski, because I think he is uniquely qualified to address this.

Mr. PISARSKI. I guess my sense is that over the year the Highway Trust Fund has been a very powerful tool. Over the years, it has accrued more and more people who are interested in helping to spend that money. It seems to me that it is not a multi-modal program simply because we have a source of revenue that everybody spends unless it is a multi-modal source of revenue generation. We have two tools that really work well: the Aviation Trust Fund and the Highway Trust Fund. We have a bunch of other modes that need Federal help and they have been trying to draw on those trust funds. I think we are tapped out in those trust funds. The Highway Trust Fund is no where near close to being even able to address the highway program, much less the ancillary programs and the goals that people have for it.

Madam Chairman, you asked me before about what we need to do. I think the answer is, unfortunately, it is one of those "all of the above things." The thing that upsets me most is I hear people arguing about tolling versus tax, private versus public. We need all of it. We need private help. It is a small, but a significant part. We

are going to need bonding, as people have mentioned. We are going to need trust fund revenues. We are going to have to look at general revenue. In the Chamber study, we did propose something on the order of a container fee for pieces of interState trade coming into the Country.

We are just going to have to open the door to almost every opportunity.

Senator INHOFE. Yes. Let's go on.

Senator BOXER. OK. Thank you, Senator.

I am going to call on Senator Baucus. Before I do, I want to say that we love Ruth as much on our side.

Senator INHOFE. As we love Susan, is that what you are saying?

Senator BOXER. Yes.

[Laughter.]

Senator BOXER. Senator Baucus.

Senator BAUCUS. Thank you, Madam Chairman.

Mr. Pisarski, I appreciate that you recognize many sources of revenue. My real question is, how can we keep this a national system? I believe it is national. We just can't let each city—the wealthy cities, the powerful cities—do their thing, the wealthy States, the donor States do their thing. It just won't work.

So my question is, how do we keep this national in scope so there is buy-in nationwide? So we are all as Americans in the same boat together here?

Mr. PISARSKI. Forgive me, Senator, for making a little bit of a historical point. When Senator Moynihan was chairing the Committee, I once said to him that even if you abolish Montana, forgive me, it is still going to be just as far from Chicago to Seattle. I think the point is that we have a national geography that is massive. We have a massive society of 300 million people, and we need national systems to support that.

I am very concerned about the donor-donee issue. I am more concerned about the varying levels of growth that we are seeing in the Country. I think it is going to make it extremely difficult for you to form legislation with that in mind. Part of that, I think, will be the necessity to focus, to come down to interState commerce, to come down to the fundamentals that the Nation looks to the Congress to support.

Senator BAUCUS. Senator Moynihan must have had a fixation on Montana.

Mr. PISARSKI. Yes.

[Laughter.]

Senator BAUCUS. This is a divergence because when Senator Moynihan was still in the Senate, I was at a big lunch and he had two charts on easels. One chart was, in descending order, the amount of dollars spent per State on public education, elementary and secondary. And New York was at the top, and it went down the list. The other chart was math and science scores of maybe sixth-through eighth-graders in the Nation. On that chart, Montana was up there, with North and South Dakota and some of the other States. Senator Moynihan said, what possible correlation can you draw between these two charts? That is, spending on education versus performance. He said, there is no logical conclusion. One cannot draw any conclusions from these two charts, except if you

want your child to have good math and science education, move to Montana.

[Laughter.]

Senator BAUCUS. But I would like to ask Mr. Seely about any thoughts you have to keep this national in scope, so that we are all working together.

Mr. SEELY. The thing that I guess strikes me as a historian is that the key points about building national systems was consensus on the importance of the effort. So in 1916 and 1921, with the initial legislation, there was broad agreement on how essential it was. Even within those 5 years, the focus changed from post roads to highways.

Senator BAUCUS. How do we get broad agreement today?

Mr. SEELY. How do you get broad agreement? The problem was too large to be addressed individually. In effect, Senator Moynihan's comment was really the same as was being addressed throughout all of those. It would be wonderful to talk about keeping all the funding in the States with large populations and large bases, but unfortunately they would lose the benefits if other States that couldn't afford to do it were left out of the mix.

The InterState system, though, created the same kind of common focus. There was excitement about it. Often, though, ironically it comes to a sense of crisis. In the 19-teens and 1920's, there was a recognized sense that if you don't do something, you have a major crisis.

In 1956, the InterState legislation emerged after eight and a half years of battling in Congress over how to fund this system. Indeed, the 1956 legislation doesn't create the InterState. It creates the trust fund that allows the construction and funding of the InterState. The system has roots that go back another 15 or more years.

So it is not unusual to have gaps in this process. What is really intriguing is that at some point, ironically, in our American democratic political system, it often takes a crisis before it tips things over.

Senator BAUCUS. That is correct. So how would you define the crisis?

Mr. SEELY. Right now, I think the crisis is the essential necessity of this kind of national-scale infrastructure for competing in a global economy.

Senator BAUCUS. About two or 3 years ago, I was with a group of folks at the Business Roundtable talking about how crisis moves America, whether it is Pearl Harbor, Sputnik, whatever it was, then we move. Otherwise, we tend not to move very far. My view is that international competitiveness is the looming crisis. It was easy to respond to Sputnik because you can see it up there, and we put a man on the moon. But this is a crisis that is like a stealth crisis. It is subtle. It is like the frog in the hot pot. It is not boiling, and so forth.

It is so hard to see anyway, and I'm sorry to repeat myself here, but in the group I mentioned all that. And one of the CEOs of a major railroad popped up and he said, Senator, I have seen Sputnik. It is the Shanghai harbor. I agree with him. I agree with him. Once you see that Sputnik, then there is a sense of what we have to do as a Country, and get moving here.



Senator BOXER. OK, Senator, we are going.

Senator BAUCUS. We are going to Shanghai.

[Laughter.]

Senator BOXER. Get ready and pack your bags. We will go to Shanghai.

Senator BAUCUS. Thank you very much, Madam Chairman.

Senator BOXER. OK.

Senator BAUCUS. I have another question that I would like to submit for the record.

Senator BOXER. That would be terrific. OK.

Senator Isakson.

Senator ISAKSON. You know, on that point, one of the problems we have is the average Georgian says the crisis is \$4 gasoline. We are talking about a crisis of crumbling infrastructure. One of the things we have to do is educate the American public that with a coordinated intermodal system that is up to standard, you raise economic prosperity. But if it crumbles, your economic prosperity goes down, which makes the cost of gasoline and everything else even more of an economic problem. I think we have an education job to really work on as we go about this.

Ms. Marvaso, twice in your remarks you used the word mistrust. At the end, and I am going to read this for a second, you said, "If we fail to understand the amount of mistrust the public has in our ability to deliver recognizable transportation improvements and be good stewards of the motorists' dollars, we will fail in reducing fatalities, fail in cutting commuter times, and fail to grow our economy in a way that keeps us globally competitive."

Would you elaborate on the mistrust?

Ms. MARVASO. I would be happy to, Senator.

You have gotten onto a line of discussion that AAA believes is really critical, and that is the public perception. We have done some research on this over the years. We have done a number of focus groups in the past 5 years. We find this to be just absolutely pervasive. It is a deeply held mistrust of the system.

It is not just the Federal system. It is all levels of government who spend their money. So what we have is a populace that doesn't understand that they are paying for their roads when they go to the pump. They mistrust deeply what is happening with the money that does go into their roads, whether or not it is well spent or not. They just don't perceive it that way.

I think considering that we have such a very, very serious gap in the funding and the need for such significant investment, and one way or another it is going to come down to the road users. You know, they are going to be paying these fees whether it is in gas taxes or road fees or registration fees for vehicles or any other way you can look at this. Even if you put a container fee, ultimately it is going to be passed along to the consumer.

You are not going to be able to do this without strong public backlash unless there is a greater understanding of the importance of this transportation system. We have found, and we have just done some focus group research in the last couple of months, and we were very surprised to find, as near and dear as safety is to our heart, when we talked about safety arguments, we didn't get a lot of resonance with people about understanding and appreciating the

importance of the system. What really, really resonated was global competitiveness. You can really talk about that and get people to pay attention to what you are talking about.

So we think that this is critical. We are doing our part, but we are a not-for-profit. We are going to be having to look at other stakeholders and partners to do this. Public education is critical. We have a monumental task ahead of us and we cannot do it, I don't believe, with a secure commitment for the kind of investment we need, one way or another, it is going to take more investment, and we can't do it without bringing the public along.

Senator ISAKSON. To that end, when you say the word mistrust, two words pop into my mind. One is corruption and the other is incompetence. Would you rate that mistrust either way? Because mistrust is a general, generic term.

Ms. MARVASO. Yes. I am trying to think about our focus group. I am visualizing what they were. Really, honestly, some of it is fair and some of it is not fair. I think that the public grabs onto some notions, certainly the bridge to nowhere is one, but there are local projects that are another. They have the perception that their projects go on and on for years, that they are over budget, and that they are late, whether they are or not. It is just a deeply held view that, whether it is the State Departments of Transportation or the Feds or whatever, do not execute this well. They do not do things on time and on budget.

Senator ISAKSON. Well, on that end, Dr. Staley and Mr. Lovaas both made comments regarding the importance of local planning. You talked about the 80 percent walkable communities. You talked about shopping traffic using Interstates. We have had that problem in Atlanta. A lot of this incompetence or mistrust I think we cause some of it in the laborious mechanism that we force the process to go through before in reality a road is built.

I will give you one example. I ran for office for the first time in 1976 and was elected on a commitment to get a road widened. This is the Johnson's Ferry-Abernathy in Atlanta, which is irrelevant. Thirty years later, they are finally finishing the last EIS study and they are acquiring the right-of-way and they are going to start construction next year. That is a gross example of the problem.

We have to in some way as we protect our air and keep it clean, recognize that in urban areas where local traffic is using an Interstate, we need to work on ways to make that not happen, yet the Clean Air Act sometimes prohibits those improvements from taking place because it is a non-attainment area. We had a situation like that in Atlanta. We have to do a better job on educating people on density. You can have density and have green space at the same time. I know you work with Earl Blumenauer a lot, I think, on a lot of stuff in urban areas. I know I am going over my time here, but part of that mistrust is what the system makes to appear to be incompetence, which is in face due diligence in a myriad of disciplines that you have to go through before you put a new project in the ground, whether it is a highway or a local road or possibly even a rail corridor.

I apologize for going over. Thank you.

Senator BOXER. That's fine.

Senator Sanders.

Senator SANDERS. Thank you, Madam Chair.

I was elected Mayor of Burlington in 1981. One thing I learned, as someone who inherited a crumbling infrastructure of our city streets and water systems, is that the longer you delay, it just doesn't get any cheaper. It just gets more expensive. So one of the insanities of this whole thing is that we allow our infrastructure to crumble rather than maintaining it, and we just spend zillions of dollars more than we should. So this is an issue we have to get a handle on.

I am sorry Senator Inhofe is not here because once again I would slightly disagree with his approach in ignoring environmental issues. I think given the crisis of greenhouse gas emissions and global warming and other environmental problems, I don't think you can ignore them.

The other point that I would make is what Dr. Seely said. I think you have to look at transportation totally as an integrated matter because every time you invest in one area, it has an impact on another area. For example, there have been studies out there that if we had a good rail system it would mean fewer people having to go by car to airports, for example. And it would impact air traffic if you can go between major urban cities by rail, for example.

The issue, Madam Chair, about funding is obviously going to be a crucial issue. I think we all agree. No matter how you divide it up, we need more money. It will be a big debate about that. I would just throw into the hopper my feeling that it is not good enough. I think where Ms. Marvaso was coming from, we have to explain to consumers. Well, they understand something. You know what they understand? They understand that the middle class in America is collapsing; that poverty is increasing; but many of them are working longer hours for lower wages.

You can explain all you want to them about why you want to raise their taxes, and they don't feel good about it. And they are right. The other thing you can explain to them is that the top one-tenth of 1 percent of income earners earn more money than the bottom 50 percent.

So I think we have to take a hard look at how you raise money. It is not simply, in my State as in Montana and in Georgia and in rural States, people travel long distances to work. Senator Isakson has people who make \$10 an hour who are traveling 100 miles to and from their jobs. You can tell them all the good reasons why you are going to raise their taxes, but they are not going to be too sympathetic. And you know what? They shouldn't be too sympathetic. We have a very unequal distribution of wealth and income in America. Transportation is a national issue. If you can pay \$12 billion a month for the war in Iraq, we can start putting money through our national income into transportation as well.

I would like to ask Mr. Lovaas just a question. Talk radically, if you want. Talk boldly, because I think we need some bold thinking about green transportation, if you like. Now, I know the other problem that we have in the Senate, that I learned after a year and a half here, is the incredible Balkanization. Next door, they are doing something else of importance. We are doing it here, and people are not talking to each other. We don't talk. We don't have the responsibility for wondering why, as you said, Madam Chair, we

don't have plug-in hybrids today which get 150 miles per gallon, while GM is giving us the Humvee which gets eight miles per gallon. But that is part of what this debate should be about, and why we don't have rail is, in a sense, in another committee, and aviation is over there.

Mr. LOVAAS, talk both from a cost-effective point of view and an integrated environmentally conscious point of view about where you think we should be going transportation-wise.

Mr. LOVAAS. I think we need to carefully consider what the next 50 years are going to look like. Frankly, in terms of the revenue question, I feel we are putting the cart before the horse here. The American public before they agree to pay additional levies to fund transportation infrastructure want to know what they are buying. In the last 50 years, it was buying a world-class interstate highway system. The question is, what is next? Maintaining that system makes sense. Dealing with the growing freight problem makes sense. And investing in other modes—

Senator SANDERS. When you say dealing with the growing freight problem, are you talking about rebuilding our rail system, among other things?

Mr. LOVAAS. Building a rail system to complement the highway system to connect our cities we believe makes sense. So in terms of the environment, as Mr. Pisarski mentioned and I think Mr. Staley mentioned as well, we are making leaps in technology with our vehicles and our fuels, and that is terrific. And we will fall short of our energy goals and our environmental goals unless we also address the problem of runaway vehicle miles traveled.

Senator SANDERS. Given the jurisdiction of this Committee, which our Chair has to deal with, what ideas do you have? What incentives can we provide in this Committee, given our jurisdiction, to enhance energy efficiency, say, in transportation?

Mr. LOVAAS. Well, basically the Committee needs to lay out a vision for what the transportation system will look like under the highway title, which is the jurisdiction of this Committee. That should be bound by certain performance goals, including oil savings goals and environmental goals, including greenhouse gas emissions. It should work more with local jurisdictions and with metro areas to improve transportation choices within those areas. Because what is happening right now is that Americans really don't have as many choices as they would like, especially environmentally beneficial ones. This would make a huge difference out there, and it would complement the remarkable progress we are making with vehicle technology and cleaner fuels.

Senator SANDERS. Yes, sir?

Mr. GRENZEBACK. Senator, in answer to your question, you have to separate our transportation and funding of the transportation systems from our environmental and energy goals. Right now, we are on the wrong side of the curve. We are basically dependent on people spending more on gasoline and driving more in order to fund the maintenance and upkeep of our highways. I think we should begin to look at separating those.

In the short term, we are going to have to rely on fuel taxes, either indexed or increased. Our fuel taxation program is efficient and accepted. But I think in the longer term, we must look at toll-

ing to support the improvement and maintenance of roads where there is a market and the congestion to support it.

Senator SANDERS. But the essence of tolling means that somebody, the worker who is using it?

Mr. GRENZEBACK. But beyond that, we must look to charging user fees on vehicle miles of travel, as opposed to taxing just fuel——

Senator SANDERS. I understand where you are coming from, but from my perspective, those are fairly regressive approaches.

Mr. GRENZEBACK. It would allow you to separate your fuel policy——

Senator SANDERS. Yes, but you are going to be adding more expenses and more taxes on low-income working people.

Mr. LOVAAS. Senator, regardless of what you do to generate revenue, the reality is that the Federal gas tax, we haven't been able to increase it for 15 years, and there are real reasons why. Those reasons include the fact that the American public doesn't buy the product line anymore. They have lost faith in it, as the spokesperson from AAA said. We need to give them an alternative vision for the next 50 years that makes sense.

Senator SANDERS. Well, I don't really agree with that. We have provided hundreds of billions of dollars in tax breaks for the wealthiest 1 percent. Most of my constituents do not come to me and say that is really a great idea. When you are talking about politics and the power of special interests right here in Washington, DC, I would say those hundreds of billions of dollars could do a lot more going into building our infrastructure than giving tax breaks to millionaires and billionaires.

Yes?

Mr. STALEY. Senator, I think it is a really important point that you are raising, but I think one of the things that we are missing, particularly in the area of tolling, is there is another important aspect to tolling which really speaks to Ms. Marvaso's point about the trust in government. There is a reason why almost half of our lane miles have been added through tolling over the last 10 years. There is also a reason why we have been able to expand capacity along the I-15 in San Diego, as well as the 91 express lanes in Orange County that are doing so well. It is because tolling creates transparency in terms of where the revenues are going and the facilities that are being built. People can actually see the benefit, and then they also have the option.

What we have seen happen is that although there has been a lot of resistance to tolling at the beginning of each of these projects, whether they are in Minneapolis or Denver or San Diego or even Orange County, once the facilities are built and the tolling is in place, the popularity increases significantly because at that point is when the benefits become transparent and people are willing to pay for facilities when they know that they are going to have that benefit.

So I think that is an element of tolling that needs to be considered because it helps address the question of whether we trust whatever organization it is to actually provide these kinds of transportation facilities.

Senator SANDERS. Thank you.

Senator BOXER. Yes. Let me say before I call on Senator Whitehouse, and I'm looking forward to hearing from him, I just want to say, Senator Sanders, there is a way for us to help the middle class and the working poor, even if they do have to pay for vehicle miles traveled, through the tax code. In other words, I would support, for example, because I think you do have to look to the people who are using the system to help keep it up.

Now, there is a way to make a refundable tax credit. They just should say how much they pay, and if they fall into a certain income category, we can deal with it. But I am of a belief that we are going to have to pay for this. We are going to have to pay for it, and I don't believe it is the general fund. We have a lot of other things we need to do with the general fund—education and all the things you and I want to do.

I am just thinking, and I hope you will open your mind to the notion, for example, because I now drive a Prius, I use less gas. I am paying less taxes. I was smart. I bought a Prius. Terrific. I figured gas would go up and it did. But I am using the highway as much as Joe Smith, who is driving an old car because he doesn't have enough money to go buy a Prius.

Now, it is not fair that I am now paying less into the Highway Trust Fund. I feel bad about that. I want to support. I don't want to support the oil companies. I am happy. I am thrilled. I wave when I go by the gas. But I want to support the Highway Trust Fund.

So the point is, there ought to be a way to do vehicle miles traveled in a way that I have to pay. Maybe when I register my car, if I go 50,000 miles or more, I pay X. If I go less than 10,000, I don't pay anything. And then my friend, Mr. Smith, who now has to pay a little more, but is in the working poor, he ought to be able to get a refundable credit back to him.

So I just hope you will keep your mind open to the fact that I don't think we are going to get anywhere if we decide we want to spend, say, on the Federal share, \$400 billion—I am pulling a number out of the air—and we don't pay for it. I think it is a non-starter. I think we are going to have to pay for it and figure out a way to give back the money to the poor person you are talking about who can't afford it, but the rest of us I think have to pay.

Let me hear from you back.

Senator SANDERS. I would just say that I think infrastructure and transportation has got to be looked at in the overall context. An important part of what we do is an overall government. If we can fund \$12 billion a month for Iraq, if we can give hundreds of—

Senator BOXER. But I am not for that.

Senator SANDERS. I know you're not. Believe me, I know you're not. And if we can give hundreds of billions of dollars in tax breaks to people who don't need it, I think we have to take a hard look at those issues and say infrastructure is enormously important for every single American.

Senator BOXER. So you think it ought to be paid for out of general tax funds, and not specific—

Senator SANDERS. My main concern, coming from a rural State—

Senator BOXER. Yes.

Senator SANDERS. I just don't want to see some guy who through no fault of his own travels 100 miles to and from the job, very common in my State.

Senator BOXER. And in mine.

Senator SANDERS. OK. And I don't want to see that person have to pay for all of these—

Senator BOXER. Yes, but there are other ways to get at it.

Senator SANDERS. We can discuss those, but that is my concern.

Senator BOXER. I just want to say that I share your view completely. I come out at a different conclusion, because I don't think you are going to be able to fund everything we want to fund without user fees. I think user fees make sense, but I think we need to always take care of the folk that are forced into the situation. We have a lot of time to discuss it.

We will hear from Senator Whitehouse, then Senator Cardin.

Senator WHITEHOUSE. Thank you, Madam Chairman. First of all, thank you for holding this hearing. This is my first venture into the wonderful world of Federal transportation policy, so it is helpful to start with a real foundational hearing like this for me.

I have some very probably elementary, you will forgive me if they are too elementary, foundational questions for the witnesses. It strikes me that in government, we are not that great at distinguishing between capital and maintenance. We are not that good at distinguishing things between that and the private sector one could economically finance, rather than expense; as we look at whether to spend to pay for a particular project or function, whether to borrow, whether to deficit finance, whether to toll, which is basically privatizing the borrowing. I don't see, and maybe you can explain, where in our policy oversight of this transportation sector, we force disciplined decisions in those different categories where we calculate what the returns on the investment would be that would justify treating it as a capital expenditure, or where are the economic gains.

I think we are all prepared to generally understand that the investment in the Interstate highway system created enormous economic gains for the Country and should probably be treated as a capital expenditure. Once we get beyond those sort of broad-brush strokes and you get down into, OK, here is a project that is going through Vermont, and here is what we are going to have to do about it, that it goes through a rigorous process of definition into those funding categories, and that there is a principled basis for putting things into those different funding categories.

Could you elaborate on that? Let me know if I am off-base and what the structure is out there for making those determinations.

Do you want to go first? I am sorry, I can't see any names.

Mr. PISARSKI. Senator, there is a long history here in government about how you deal with capital. Maybe Bruce can opine on that. Over the years, we have talked about the fact that when you invest in the highway system, you in effect are adding to the Nation's assets, as opposed to when you are doing operating costs, maybe you are just expensing something.

We in many cases have now asked the States to keep track of the total asset value of their system. There is an accounting system

that permit it. As I recall, Lance maybe remembers, I think it was like \$1.4 trillion or \$1.5 trillion as the total asset value of the national highway system, and that the need to support that system and to make sure that next year it is not \$1.3 trillion is a very important factor.

Treating expenditures differently when you are adding to assets and when you are not I think is a very important, potentially significant perspective.

Senator WHITEHOUSE. But the Highway Trust Fund doesn't do that now. The Highway Trust Fund is just like a checkbook, money in and money out. There is no financing aspect to it. It is not a revolving loan program. It doesn't have any—

Go ahead, yes.

Mr. GRENZEBACK. Yes, you are correct. We put in place an Interstate highway program and are used to funding it, but we have lost sight over the time that there was an economic value attached to those investments. People are now beginning to ask, what is the economic payoff of transportation investments. Interestingly, we are seeing that it—

Senator WHITEHOUSE. It has to be a pretty disciplined determination, because every single one of us is going to want to say that the project in Rhode Island creates massive national economic returns, and therefore we should borrow money to build it right now in Rhode Island. But making sure that is in fact true, and we can all be certain that when Senator Isakson wants to do one in Georgia that if the bill comes back, yes, this has great economic value, we can each have trust in this. I don't know where that—

Mr. GRENZEBACK. The most innovative work is being done on the rail projects, where the States have said we cannot afford to invest in the highway capacity, but we would like to invest in rail freight capacity. We are beginning to get a discussion between the private sector railroads and the States on whether the States should make a public investment in the rail system. The debate is asking the questions, what is the proper share, what is the economic payoff, how do we divide that economic payoff between the public and the private sector, and how do we use that information to allocate roles and responsibilities in financing.

We are beginning to see a little bit—

Senator WHITEHOUSE. But it is a pretty anecdotal and political process, right?

Mr. GRENZEBACK. No, there are States that are doing a fairly rigorous analysis of the economic benefits of transportation investments. I would not say that it is at the level of standardization that you would like to put in legislation and move completely across the national highway program, but it is getting there. I think the highway agencies and the railroads are beginning to look at economic benefits because at core they are trying to justify why you should spend public dollars on transportation program as opposed to other public programs. Economic benefit analysis is creeping back into the system, and I think it would be well worth encouraging.

Senator WHITEHOUSE. Madam Chair, my time has expired. I see a lot of fingers and head nodding. I would just encourage anybody who wishes to fill in to please just, with a response to the record,



get in touch with my office, because I don't want to take more time since my time has expired. But I am interested in this question of how we draw the line between what is an expensed item and what is an appropriate investment, and how you discipline that selection, and to what extent the existing regulatory and funding infrastructure presently accomplishes that function. If that could be a question for the record for anybody who wishes to respond to it.

Thank you, Madam Chair.

Senator BOXER. It is kind of like when we did the global warming bill. How do you know what offset really is truly an offset and is going to result in a diminution. We came up with a plan to have some sort of a seal of approval that we felt could accomplish that by people who know. But it is an interesting idea, and I think it is one we need to pursue.

Senator Cardin.

Senator CARDIN. Madam Chair, thank you very much, and thank you for holding this hearing. I think it is an extremely important subject.

I think the dilemma we face is that transportation infrastructure is more than just moving people and freight. You have talked today about safety issues, environmental issues, and smart growth—all that has a much stronger impact than just moving people and freight.

The Chairman knows of my interest in public transportation. I was reminded just how important that was this week when I left the Capitol about 4:30 in the afternoon to get around four miles north of here. An hour and a half later, I arrived.

Senator BOXER. Four miles?

Senator CARDIN. Yes. We invite you to visit Montgomery County any afternoon leaving from downtown Washington, and you will know what I am talking about.

[Laughter.]

Senator CARDIN. Madam Chair, I could use your help in moving a bill we have here to modernize the WMATA system that seems to be held up by one Senator. I will just make one last plug on that. When at peak hours, it is the Federal employees who are trying to use that mass transit system, and we had a strong vote in the Committee, and it is now on the Amtrak bill. We hope that it will stay on the Amtrak bill and be signed into law, increasing the Federal Government's partnership.

My point is this, historically we have looked at funding transportation through transportation revenues. We have fought to keep those transportation revenues for transportation infrastructure. But I think we have to look beyond that now. I think about the transit systems and the concept of fare box policies. We have one in Maryland that I don't think makes a lot of sense, quite frankly. We are trying to encourage people out of their passenger vehicles. There is a strong public reason to do that, and fare box policies don't always make sense.

It seems to me, knowing the contribution that transportation infrastructure makes to other issues, there should be a greater understanding of the need to supplement the transportation revenues from other sources, broader sources. You did that on the global climate change bill, which made sense. We had a serious national

issue, an international issue, to deal with greenhouse gases, and therefore we looked at ways of financing what we needed to do in a broader sense than just a narrow funding source. Quite frankly, I think the transportation revenues are becoming a narrow funding source.

If we are going to have the infrastructure we need for the multiple purposes that this hearing has been focused on, then we are going to have to look at a broader way of how we meet those goals.

I don't have the answer, but I do think we have to break the traditional thought here. I would welcome any comments. I have 2 minutes left on my time, so if any of you want to take the time, fine, to respond on this issue. I hope you support me on this.

Senator BOXER.

[Remarks off microphone.]

Mr. LOVAAS. Right. I just want to use this opportunity to say that we are actually looking at some alternative funding sources like the road pricing, which we discussed; like the potential for a VMT fee, that kind of thing, along with the potential to achieve land use changes through providing incentives, and to use the revenue generated by these new funding sources to build transportation alternatives which will remedy some of the equity questions that Senator Sanders was raising earlier.

We are actually doing this study over the next year with the American Association of State Highway and Transportation Officials, the American Public Transportation Association, ITS America, Cambridge Systematics, the Urban Land Institute, among others. We look forward to unveiling it around the time of the next Transportation Research Board conference, where we hope to inform the debate about what is possible.

But it can't just be about the revenue source. Again, that is putting the cart before the horse. The American public wants to know what they are buying.

Senator CARDIN. Absolutely. And transportation infrastructure is popular. If the people of this Nation know that the revenue source, the funds, are being used to improve the transportation infrastructure of this Country, they are going to support us. It can be broader than just a narrow user fee.

Mr. LOVAAS. I think that is absolutely right. A multi-modal program that is national in scope and that has clear performance goals in terms of transportation, economic competitiveness, energy and the environment, I think that will sell well with the American people.

Mr. PISARSKI. Senator, if I might add, to go back in history, the early transit programs at the Federal level were general revenue funds when HUD was the organization that managed it. There is no reason not to be looking at that again in more extensive ways because of the services that transit provides and its reach. I think the other programs need to be open to that as well.

If you look at the Canadian system, for instance, they have a very different approach to funding, and they produce some very nice systems.

Senator CARDIN. Well, I agree. I think, Madam Chair, you are going to see the struggle next year on trying to pass a surface transportation reauthorization program with the size of the pie cre-

ated by the dedicated revenues. It is going to make it impossible for us to achieve our goals, so we are going to have to look beyond.

Senator BOXER. No question. But I just have to say that in a perfect world, if all of a sudden we were forming the government and we didn't have anything else on our mind. We had no deficits. We had no debt. And we sat down and said, what are the important things we have to do? Right up there, highways, transit, freight rail moving.

Now, the problem is we have got that right up there. We have to deal with it, and we have deficits, we have debt. So I just think you are absolutely right. Look, in another circumstance, I would be saying this is a basic function of government and just that's it. But I cannot sit here and do that in a situation where we are facing these debts and deficits.

So we have a Highway Trust Fund and it has gone down. We have people like me who own Prius's who are paying less into it, which isn't fair, which leads you to vehicle miles traveled as one way to help. You have the Bernie Sanders problem, which is a problem of people who really are living on the edge. We don't want them to be hurt, so we have to figure out a way that if we do these user fees, you know, somehow they are compensated for it.

We have a lot of issues here. But I would just make a prediction. I don't see us, unless there is a change in the economy and all of a sudden we are in a great prosperity, and all of a sudden revenues are floating in to the government, and all of a sudden the Iraq war is over. It's not going to be over all of a sudden. It is going to take us months, even at the best of circumstances.

So we are going to have to figure out how to pay for everything we want to do. I feel we can do it. Now, what I am struck by is none of you wants to really, except for Mr. Lovaas—congratulations on your courage—none of you really wants to put anything out there, which is a little troubling to me because we need to hear—well, I heard toll roads, but that really doesn't reach to the bigger question. That is just a little regional solution to a congestion problem. I don't love them. I can live with them. It's OK if people want them. It's OK. I don't look at it as an answer.

I think what we need to look at is who is using these roads. Who is making a lot of money using these roads? There are a lot of big business that uses very heavy trucks. There are a lot of ships that are coming into port making our air filthy. That is part of our transportation system. And all those goods come off of those ships and they go on trucks, and they go through the place I live in California, and people have asthma real bad.

So these people are using our system. In a situation where the gas tax is just declining with not that much end in sight, and let's just say wonderful things happen and we have a plug-in hybrid, and let's just say—this would be my dream—because this is the Environment and Public Works Committee, maybe let's just say there is a breakthrough and now everybody goes and buys plug-in hybrids. Wow. Let's just say that. Gas tax. I want to say that. That is going to happen over time.

So we really have to grapple with this question. We are going to have to have the courage to do it, and we are going to have to look to all of you as the experts here not to pound on us, because I just

don't think saying it is going to be a general purpose of government now, because even if you could make the argument that it should be—and I could make that argument as a good Democrat—we can't do it because of all the competing needs that we have and our deficits and our problems.

So we got a lot of great testimony today, which I so appreciate, but the thing is, and I guess I will close with one question to Ms. Marvaso, which is distrust. We have a problem. You talked about the 42,000 people in the U.S. who die each year in motor vehicle crashes, and millions more are injured. You say the status quo in safety is not acceptable. What can we do here to help with that, in this Committee?

Ms. MARVASO. Well, it definitely is going to take, and we certainly have to do things differently. We need to look at the current program. We need to make it more—

Senator BOXER. What does that mean? You are talking generalities. What do we need to do to cut back on these deaths and injuries? Give me specifics.

Ms. MARVASO. We need a greater investment, to be sure, and I will say—

Senator BOXER. In?

Ms. MARVASO. In safety. We are pleased to see—

Senator BOXER. And on the road, what does that mean?

Ms. MARVASO. I'm sorry?

Senator BOXER. On the roads, what does that mean to you, a greater investment in safety?

Ms. MARVASO. I think a greater investment in the programs and the grant programs that we have.

Senator BOXER. To do what? I am just driving you to find out what you mean. Grant programs that do what to make our roads safer? What makes our roads safer?

Ms. MARVASO. Well, we have made wonderful strides, I think, in improving the roads. We certainly have made strides in improving the vehicle. We have a huge challenge when it comes to changing behavior, to getting people to wear seat belts and to stem the tide of drunk driving. It takes different approaches. We are not doing things currently that are making a very significant difference.

Senator BOXER. You are talking about roads that are not safe.

Ms. MARVASO. Yes.

Senator BOXER. What about speed limits? What does AAA think about speed limits?

Ms. MARVASO. Well, we certainly do acknowledge the fact that I believe 25 percent of all crashes are attributable to speed, so we do believe that speed is a serious issue.

Senator BOXER. Do you think we should lower the speed limit?

Ms. MARVASO. Changing behavior is really a serious issue. We have speed limits now that people exceed by 20 miles an hour. So it is behavior. How do you get to some of these people who are going to violate the law no matter what? That is I think where we are really missing it, and we have to look at new approaches. We need to meld the approaches that we have been doing for many, many years. NHTSA has good work. Federal Highway has good work. But we have to bring in some new approaches.

Senator BOXER. Do you think railroad crossings are dangerous, where we have these railroad crossings across the highway?

Ms. MARVASO. Certainly. We have made progress there.

Senator BOXER. I don't know about your State, but in my State the railroad crossings are just—it's a terrible thing and very, very dangerous. The amount of money to cure that problem is just beyond. It is just billions.

I will let you close.

Senator ISAKSON. You could tell I had a question on my face.

Mr. Pisarski, in the end of your last answer, you referred to the creative system in Canada. I took it to be a kind of creative system of raising revenue to build roads. Was that right?

Mr. PISARSKI. No, sir. We were just talking about transit programs. In Canada, the transit programs are almost entirely a function of local governments and provincial government. The national system stays pretty much out of it. I think it is on the order of \$20 million a year, or something like that, that they put into it for special support programs. They have managed somehow to develop some very effective transit systems, certainly among the best in North America.

Senator ISAKSON. You are talking about bus and rail?

Mr. PISARSKI. Particularly rail in Canada. What they have done over time is as capacity needs have risen, they have moved up the chain from certain limited buses to extensive buses to rail. They have moved that way and I think they have done a very, very effective job.

Senator ISAKSON. So Canada transit is pretty much provincially run and locally run, without a Federal contribution or Federal oversight?

Mr. PISARSKI. I don't know about the Federal oversight. I am sure there is Federal concern and focus. My sense has always been that when the Feds get out of spending money, it doesn't mean they should get out of the subject. They need to have oversight. They need to look and see what is happening independent of whether there is a financial program or not.

Senator ISAKSON. It is interesting you said that because in my opening remarks I quoted the Georgia General Assembly had a House-Senate Study Committee whose end recommendation was for Federal DOT to turn over the Federal gas tax money to the State and let the State run the system. It sounds like you are saying that is what Canada does.

Mr. PISARSKI. In many respects, it does. In other countries, it varies. It is more centralized or less centralized.

Senator ISAKSON. OK. Thank you.

Yes?

Mr. GRENZEBACK. Except, Senator, I would point out that the Canadians have a very different approach to land use planning. They can very tightly coordinate their transit investments with land use planning so that people—

Senator ISAKSON. Tell me what that means.

Mr. GRENZEBACK. The government controls the land use much more than we do.

Senator ISAKSON. The local government?

Mr. GRENZEBACK. Yes, the provincial government and the city governments do. It is much less diffuse than our system. When the provincial government invests in transit, they can also make sure that you don't get sprawl around it, that development is very tightly concentrated, so that you get the travel and economic benefits of that investment.

Senator ISAKSON. So you have provincial zoning basically, land use planning?

Mr. GRENZEBACK. Yes. It is quite a different land use control system than we have in the United States.

Senator ISAKSON. It's interesting. Well, my only point, I recognize if you were to do that, you still have a tremendous Federal role in coordinating transportation, and I think one of the more intelligent things that came out of this in the early comments was the fact that we have surface transportation in some international waters, and this Committee and the Commerce Committee has aviation. You know, we have a diffuse oversight in the Senate when it probably ought to be centralized—but that is a political issue for another day—because they are so interrelated.

In Georgia, we have the ports of Savannah and Brunswick. We have the InterState system that feeds them, and then Hartsfield International Airport does the air freight. Every time we have a lack of coordination there, we have a runaway expense somewhere else.

Thank you, Madam Chairman.

Senator BOXER. Thank you.

Thank you all so very much for your help. This is going to be a long journey, and we hope you will stay with us until we get it right. Thank you very much.

We stand adjourned.

[Whereupon, at 12:05 p.m. the committee was adjourned.]

STATEMENT OF HON. BENJAMIN L. CARDIN, U.S. SENATOR  
FROM THE STATE OF MARYLAND

Madame Chairman thank you for holding this hearing today.

There is a Federal role in our Nation's surface transportation system. This role is not limited to investments in roads and bridges, but should also include public transportation within and between cities. The safe, rapid, and efficient movement of people and goods across our country is made possible by our interstate highway and passenger and freight rail systems—for which the Federal Government has a necessary and important role.

When considering the Federal role in surface transportation, we must broaden our thinking well beyond the purview of our Committee's jurisdiction. We need a holistic approach to transportation policy which extends our focus from maintenance and construction of highways and bridges to the role of public transit in our transportation policy. We must also include in this discussion the impact our transportation has on the environment and the implications our changing environment will have on our transportation system.

We cannot afford to focus exclusively on infrastructure without considering the Federal role in moving commuters out of their cars. In Maryland, between 1998 and 2006, vehicle miles traveled increased by 16.9 percent to 56.6 billion miles. While most Marylanders commute by driving alone, over the last 5 years, the fraction of those driving alone has been steadily decreased as other modes of transportation (walking, transit, and carpooling) have slowly increased. By reducing vehicle miles traveled by passenger cars we open our highways up to the more efficient transport of goods.

While investments in transportation infrastructure are required for the U.S. to remain competitive in our global economy, the Federal role extends beyond these investments to Federal transportation and energy policy: the link between our trans-

portation systems and the environment requires Federal air quality standards, fuel economy standards, and greenhouse gas emission reduction targets.

In prior hearings, we've heard that we need to get people out of their cars and into fast, convenient, and reliable mass transportation systems. That will take a major investment. Such an investment not only improves the quality of our travel and supports the increasing demands that commerce places on the roads and railways of our country. This required investment is not for convenience but is a necessity to help our Nation's economy to continue to grow in the longer term.

The price tag associated with addressing these critical needs is measured in the hundreds of billions of dollars. Total current spending is well below what is needed to improve the condition of our national transportation infrastructure.

Our transportation system is an essential part of our national security as well as our Nation's economic well-being. In the 2007–2008 World Economic Forum's Global Competitiveness Report, the U.S. ranked first among 131. The rankings were based on an index the WEF developed which measures competitiveness—the set of institutions, policies, and factors that determine the level of productivity of a country. Among the 12 key “pillars of competitiveness” used to determine these rankings, infrastructure, along with institutions, macroeconomic stability, and health and primary education were considered basic requirements. The U.S. ranked sixth out of 131 countries in the infrastructure category.

Despite our country's high ranking in this study, it is clear from testimony we've heard over the last several months that we cannot retain this ranking for long, given the lack of our Nation's investment in the transportation system and infrastructure in general.

It is my belief that Federal investment in public transportation should be a national priority. Our nation receives extraordinary public benefit from mass transportation systems. These systems take thousands of cars off our congested highways. They take tons of pollutants out of the air we breathe. They move people efficiently into and out of our most important commercial centers.

Congress should encourage smart growth through funding transit-oriented development corridors with upgrades in transit facilities, bicycle transportation facilities, and pedestrian walkways.

Congress should create Federal tax incentives for employers who provide telecommuting to their employees. Telecommuting has successfully reduced both transportation and energy use, and the EPA reports that if just 10 percent of the nation's workforce telecommuted just 1 day a week, Americans would conserve more than 1.2 million gallons of fuel per week.

I look forward to hearing from our witnesses, and to working with my colleagues on this committee to define the appropriate role the Federal Government should have in our Nation's surface transportation system and to identify and address our national surface transportation investment needs.

Thank you Madame Chairman.

**United States Senate**

**WASHINGTON, DC 20510**

June 20, 2008

The Honorable Harry Reid  
Majority Leader  
United States Senate  
221 Capitol Building  
Washington, DC 20510

The Honorable Max Baucus  
Chairman, Senate Committee on Finance  
219 Dirksen Senate Office Building  
Washington, DC 20510

The Honorable Mitch McConnell  
Republican Leader  
United States Senate  
230 Capitol Building  
Washington, DC 20510

The Honorable Chuck Grassley  
Ranking Member, Senate Committee  
on Finance  
219 Dirksen Senate Office Building  
Washington, DC 20510

Dear Senators Reid, McConnell, Baucus, and Grassley,

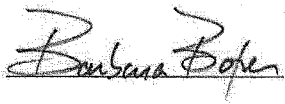
One of the lesser recognized effects of the recent economic downturn and rising energy prices has been a slowdown in projected revenues into the federal Highway Trust Fund. As a result, states are now facing the possibility of a \$14 billion, or 34 percent, cut in federal highway funding in FY 2009. We believe there are a variety of ways to avert the pending crisis and urge you to work with us to resolve this as soon as possible.

The federal highway program provides almost 45 percent of the annual capital investment in U.S. highway and bridge improvements. A reduction in highway investment of the magnitude currently projected would have far-ranging consequences. According to newly released data from the Federal Highway Administration, the pending revenue shortfall in FY 2009, if left unaddressed, would cost over 485,000 American jobs. Furthermore, ongoing efforts to reduce traffic congestion, improve safety and enhance long-term economic productivity would be severely disrupted by a large cut in highway investment.

We urge you to support fixing this looming crisis this fiscal year.

Thank you for your ongoing leadership and we look forward to working with you to preserve critical investment in our nation's highway infrastructure.

Sincerely,





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