**"Not So Fast: Key Policy Considerations for Surface Transportation Investment Needs"**

**Congressional Testimony of**
**Robert Puentes**
**Fellow, Metropolitan Policy Program**
**The Brookings Institution**

**Presented before**
**Committee on the Budget**
**United States House of Representatives**
**October 25, 2007**

Mr. Chairman and members of the Committee, I am pleased to appear before you this morning and very much appreciate your invitation.

The purpose of my testimony today is to provide some context to the conversation on surface transportation investment needs and the current conversations around finance and funding.

## I. INTRODUCTION

There is no question that in the wake of the Minneapolis bridge collapse, reports of ever-increasing congestion, and new concerns around climate change, our nation's transportation policy has suddenly been thrust into the national spotlight. This infrastructure epiphany is long overdue.

The United States is currently undergoing a transformation of dramatic scale and complexity comparable to what it experienced at the beginning of the last century—another period characterized by the radical reshaping of the American landscape.

Massive demographic, economic, and social changes are already having major spatial effects on the nation. But rather than dispersing randomly all this population and economic activity is shifting and re-aggregating in major metropolitan areas, both domestically and internationally. These forces are restructuring the American economy and are revaluing the assets of the cities and urban cores within metropolitan areas.

In short, we are a metropolitan nation. Supplier networks and customer relationships are regional rather than local in nature. Labor markets and commuting patterns cross jurisdictional and state lines. Firms make decisions on location and expansion based on regional advantages and amenities. Metropolitan areas are where most Americans live, work, and produce the majority of the nation's economic output. The services and revenues they generate drive state economies.[1]

Just the 100 largest metropolitan areas claim more than 65 percent of our population, 75 percent of our most educated citizens, and 75 percent of our national economic output, driving and dominating the leading edges of our economy: technology, business, finance, and professional services. They

[1] Alan Berube, "MetroNation: How U.S. Metropolitan Areas Fuel American Prosperity," Brookings, November 2007.

are also our immigrant gateways, our ports of trade – truly our centers of knowledge and innovation.

Unfortunately, our nation's transportation policy does not recognize the primacy of metropolitan areas and – I would argue – on net actually undermines these vital places. Yet for the nation to thrive, our largest metropolitan areas must thrive. This is a lesson long understood by foreign competitors in Western Europe, South America, and now in Asia. The rest of the world understands these assets but in the U.S. metropolitan areas remain hidden in plain sight.

This blunt criticism stems from the fact that our national government takes a bloated and outmoded approach to the realities and challenges of the modern metropolis and, by extension, to the economic competitiveness of the nation. Today the major transportation debates are all around money: spending more and more on the same product rather than where, on what, and how to spend that money better.

The sad fact is that now that the Interstate Highway System is completed there is no coherent national vision for addressing a complex and conflicting set of transportation challenges. As a result, America's transportation policy is adrift with no clear goals, purpose, or ability to meet these challenges.

The federal government appears to lack a theory of its role and is absent or agnostic when it comes to where highway funds are spent. Fuel taxes feed the highway account of the transportation trust fund which is distributed to states without any kind of purpose, oversight or accountability. Nor are the funds tied to any goals such as keeping bridges in good repair, mitigating the rise in congestion, improving air quality, or connecting workers to jobs and education.

Mr. Chairman, I sincerely believe additional transportation investments are needed to bring the nation's infrastructure up to date for the 21st century. But my overall theme is that the discussion about surface transportation needs and the budget should start first with a clear articulation of the goals and objectives of the federal program, and the desired outcomes. The program should then be structured to get to those outcomes. Only then should additional revenues be considered. This is consistent with the goals for fiscal discipline and responsibility expressed by this committee.

## II. DETERMINING NATIONAL SURFACE TRANSPORTATION INVESTMENT NEEDS

Whether raising new revenues, borrowing, or fighting over the existing pot of funds, paying for transportation – both in the short and long term – has emerged as a major concern among policy makers. These concerns are so prevalent today that they spawned two national commissions, and the U.S. Government Accountability Office recently added transportation financing to its annual list of high-risk areas suggested for oversight by the current Congress.[2]

The problem is that while there is a pervasive desire to invest there is little precision about national needs.

[2] Two other new high risk areas are national security and food safety. See: U.S. Government Accountability Office, "High-Risk Series: An Update," GAO-07-310, 2007.

There are several oft-cited sources for transportation investment needs: the American Society of Civil Engineers' *Report Card for America's Infrastructure* and the U.S. Department of Transportation's (U.S. DOT) *Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance Report to Congres*s (C&P report). The latter is commonly referred to as the national "needs" statement by many constituency groups. Analysts from the U.S. DOT testify and update these figures regularly – but with caveats as described below.

For roadways, the U.S. DOT estimates that the maximum investment level required to eliminate the project backlog for bridges and to implement all proposed highway improvements is $131.7 billion per year for the next 20 years. Analysts at the department report that this figure represents the "investment ceiling" and that spending should not exceed this level, even assuming unlimited funding availability. The cost per year just to maintain current highway and bridge conditions is estimated to be about $78.8 billion.[3] Between $2.6 and $1.6 trillion is needed over 20 years based on these estimates.

The investment needs projected for transit are substantial as well. The estimated average annual investment required to maintain the same physical conditions and operating performance of the nation's transit systems by replacing and rehabilitating deteriorated assets and expanding capacity to accommodate expected transit passenger growth is $15.3 billion. The cost to improve conditions and performance is estimated to be $24.0 billion. The overwhelming majority of these needs (85 percent) are estimated to be in urbanized places of over 1 million people – essentially referring to the 50 largest metropolitan areas.[4]

Numbers such as these are frequently cited because they are compelling and because the task of assessing national investments is a very difficult job for anyone other than the U.S. DOT so there are few sources and original numbers to reference. The basis for the C&P report is the Highway Economic Requirements System (HERS) which is an engineering model used to suggest improvements to a particular stretch of highway. The Federal Transit Administration uses the Transit Economic Requirements Model (TERM) to estimate future transit capital investment needs.

However, as a tool for determining the level of national "needs" these analyses, by their own admonition, are limiting.

For one thing, they only include highways, bridges and public transit, and ignore intermetropolitan modes, freight and passenger rail, and intermodal transportation facilities. Further, the analyses focus on capital expenditures and exclude the costs for maintaining and operating the new facilities once they are in place.

But they also do not take into consideration investments that could obviate the need for future investments. They do not consider land use impacts or effects. By separating highway and transit investments the potential for the modes to work together is missed and, indeed, often these modes

[3] Ross Crichton, "Highway Investment Scenario Estimates: Impacts of Analytical Assumptions," Briefing for the National Surface Transportation Revenue and Policy Study Commission, July 2006.

[4] U.S. Department of Transportation, "Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance Report to Congress," 2006, exhibit 7-10.

represent alternative investments in the same corridor. The analyses also ignore other national concerns regarding transportation investments such as some environmental, equity, and economic development impacts.

Simply put, the limited focus on the condition of infrastructure without regard to desired outcomes is the wrong approach to determining national investment needs.

The U.S. DOT recognizes these shortcomings and clearly states that linking investment needs analysis to federal funding alternatives requires an intermediate step to, as I suggested, define the federal role and responsibilities.[5] Currently there is no effort to do that. As such the C&P report itself states in no uncertain terms that it "makes no recommendations concerning future levels of federal investment."[6] Yet that is precisely what many groups and advocates for a larger federal program do.

My central point is that without a clear definition of what the federal role should be and what it should endeavor to do, a true determination of the optimal level investment will remain elusive.

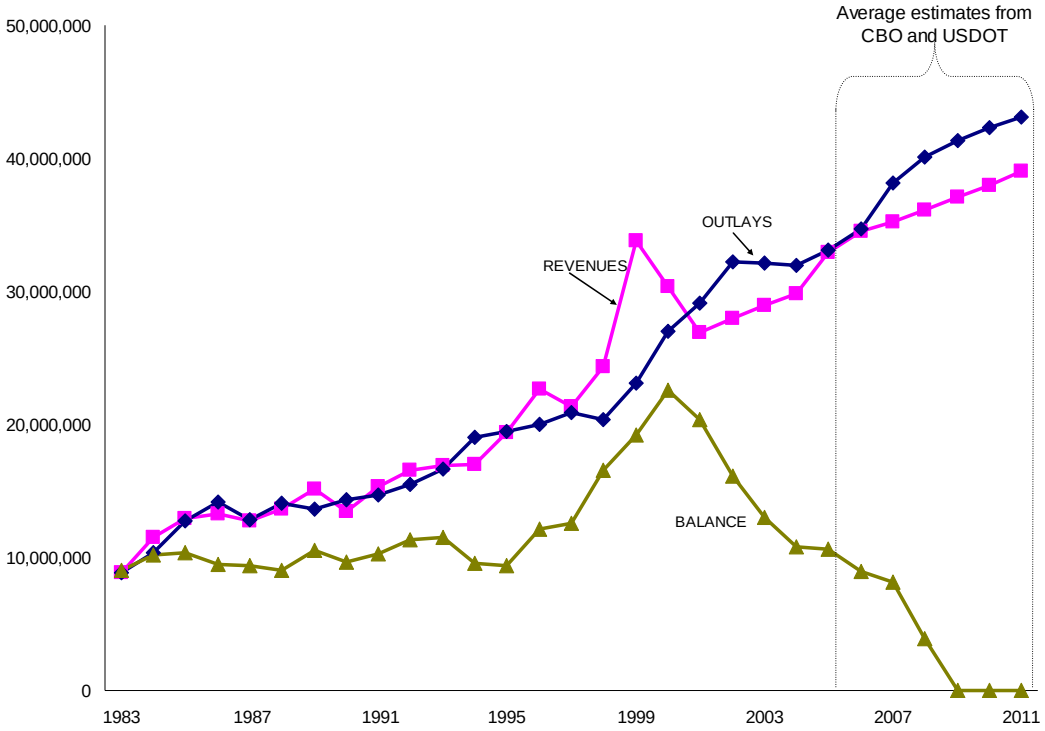
## III. CURRENT STATE OF THE FEDERAL TRANSPORTATION TRUST FUND

Driving the conversation about transportation spending today is the current predicament with the federal transportation trust fund and the broad understanding that the outlays are estimated to continue to outpace the revenues flowing into the account. While this situation has been going on since 2001 the problem now is that the reserves, or balance, of funds in the account are close to being spent down. Yet this does not mean the fund is insolvent. It simply means the federal government has committed to disburse too much money to states and localities.[7]

A recent report from the GAO illustrates this problem by examining the estimates in receipts and outlays from both the Congressional Budget Office (CBO) and the U.S. DOT. They estimate that receipts into the highway account of the transportation trust fund will continue to increase by 13.8 and 10.3 percent, respectively from 2006 through 2011.[8] Figure 1 below shows that revenues have remained consistently steady since the fund was split into highway and transit accounts in 1983. What has clearly changed is that outlays have increased at a rapid rate. As a result, whenever outlays outpace revenues it drains the reserves in the account. Since 2001 the reserves have dropped precipitously. The transit program is projected to be oversubscribed to where revenues available reach a zero balance in 2011. [9]

[5] Susan Binder, "Limitations of the USDOT Investment Analysis," Briefing for the National Surface Transportation Revenue and Policy Study Commission, July 2006.
[6] U.S. DOT, 2006, exhibit ES-13.
[7] Laura Ziff, "Highway Trust Fund Cash Balances," Briefing for the National Surface Transportation Revenue and Policy Study Commission, March 2007.
[8] U.S. Government Accountability Office, "Overview of Highway Trust Fund Estimates," GAO-06-572T, 2006.
[9] Gary Maring, "Future Financing Options to Meet Highway and Transit Needs," Prepared for the Regional Plan Association National Roundtable on Surface Transportation, Tarrytown, New York, February 20-22, 2007.

**Figure 1: Total Revenues, Outlays, and Balance of the Highway Account of the Federal Transportation Trust Fund (with estimates)**




Source: Federal Highway Administration, Highway Statistics 1983-2005, table FE-210; plus CBO and USDOT estimates

The critical subset of that problem, of course, is that since the federal gas tax has not been raised since 1993 even to keep pace with inflation it is having less of an effect as it could. In FY 2005, nearly 90 percent of the federal revenue that went into the federal transportation trust fund was derived from fuel taxes so as the rate effectively declines, there is clearly an impact.[10] As reflected in Figure 2 below, the real gas tax rate and the real revenues have fallen together since 1993. (It is worth noting that receipts from the federal gas tax leaped by $5.5 billion between 2004 and 2005.)

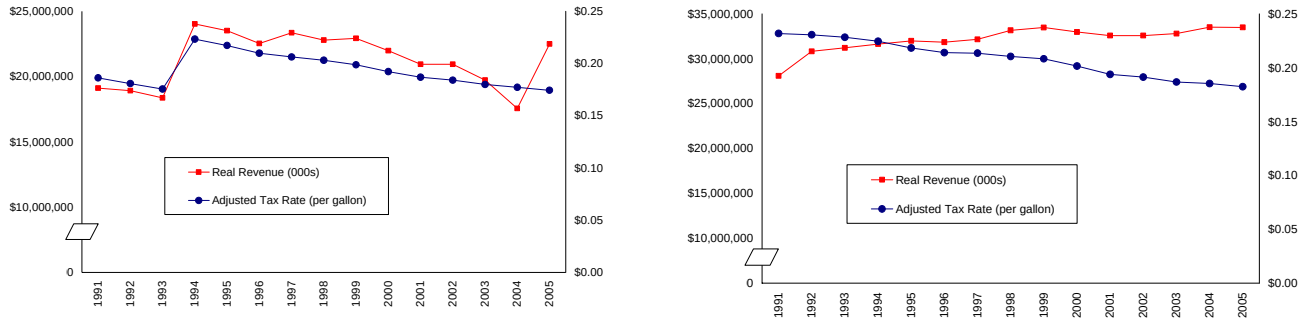
Related to the concerns about the effectiveness of fuel taxes as a revenue source is the increasing fuel efficiency of the vehicle fleet. The fuel economy for cars and light trucks has not been this high since 1991.[11] As Figure 3 shows, gasoline consumption dropped by about 20 billion gallons per year from 2002 to 2004.[12] And while American cars are being driven further and more often than ever the long term trends are unclear. In recent years, the increase in vehicles miles traveled (VMT) for the country as a whole has begun to level off. The average yearly increase in VMT during the 1960s was 4.4 percent. During the 1970s, 1980s, and 1990s it was 4.3, 3.2, and 2.5 percent respectively. So far in the 2000s the average yearly increase is only 1.8 percent. While VMT does continue to increase it is slowing down considerably. In fact, recent data shows that 20

[10] Federal Highway Administration, Highway Statistics 2005, table FE-10.
[11] The Car Corporate Average Fuel Economy (CAFE) estimate for cars and light trucks combined was 25.4 miles per gallon in 2006. Stacy Davis and Susan Diegel, *Transportation Energy Data Book*, 26th ed. (Oak Ridge: Center for Transportation Analysis, Oak Ridge National Laboratory, 2007), table 4.17.
[12] Davis and Diegel, table 2.11.

of the 50 largest metropolitan areas saw VMT *declines* between 2000 and 2002.[13] Metropolitan areas such as Charlotte, Portland (OR), Dallas, Los Angeles, and Milwaukee saw some of the largest declines.

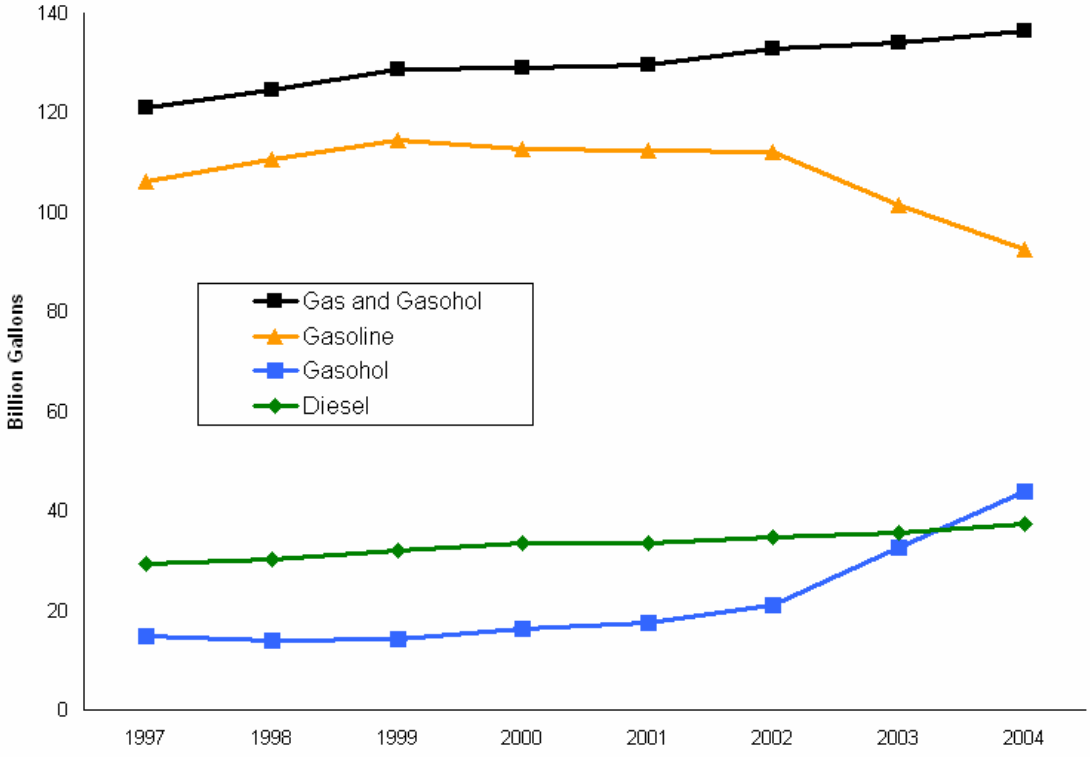
**Figure 2: Inflation-Adjusted Gas Tax Rate and Revenues (current dollars), 1991-2005**

*Federal Rate and Revenues* *Weighed State Gas Tax Rate and Revenues*




Source: Robert Puentes and Ryan Prince, "Fueling Transportation Finance: A Primer on the Gas Tax," in *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, B. Katz and R. Puentes, eds., Brookings, 2005.

**Figure 3: Highway Usage of Gasoline and Special Fuels, 1997-2004**



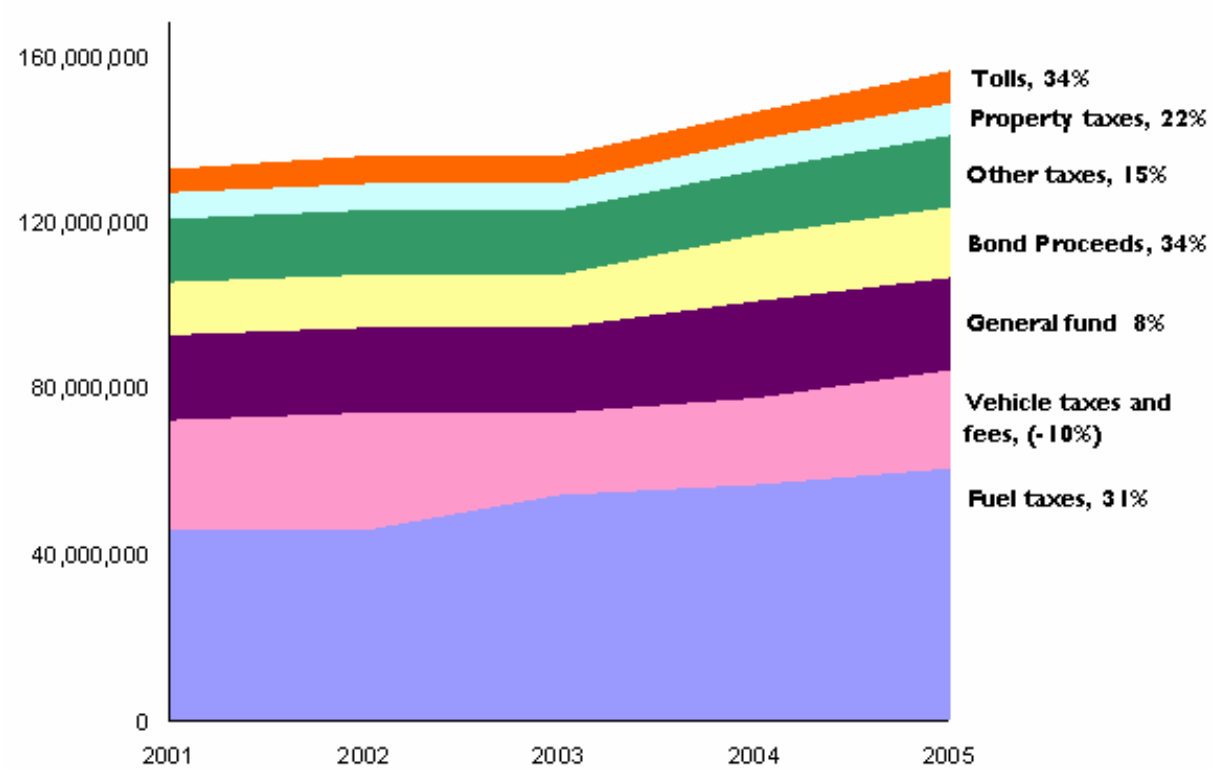

Source: Davis and Diegel, 2007.

[13] That is the most recent year for which VMT data is available. It is available since then for urbanized areas but the data used here is county level data aggregated up to current metropolitan areas definitions.

But what is often lost in this discussion – especially around finance – is that these trends are extremely positive for the nation as a whole. Lower fuel consumption is vital to our energy security which, coupled with the leveling off of VMT, is important for the health of our metropolitan areas and for mitigating the challenges associated with climate change. Indeed VMT reduction should be an integral part of the conversation around investment needs.

Yet this does not change the fact that the gas tax is a critically important revenue source and will continue to be for the foreseeable future. Between 2001 and 2005 only tolls and bond "revenues" grew at a faster rate than fuel taxes in terms of all funds used for highways (Figure 4). However, these other sources still made up a very small share of total revenues – fuel taxes still dominate at nearly 40 percent of the total. Revenues from fuel taxes also rose faster than any other source since 2001 in nominal terms and are still rising as a share of the national total.

**Figure 4: Revenue Sources for Highways (in $000s) and Change from 2001-2005**




Source: FHWA, Highway Statistics, various years.

There are many excellent reasons to move aggressively to expand tolling and to explore revenue sources such as mileage-based fees. For example, the expanded use of these mechanisms is an effective and practical solution for mitigating the growth in congestion. But they are clearly less effective as solutions to the funding challenges in the short term.

Three other items warrant discussion here because they are citied as a primary cause of, and the potential solution to, our transportation finance and funding predicament.

One is the issue of the transportation earmarks. The current federal law is infamously known for the 6,300 priority projects identified in the legislation. Analysts have been quick to pounce on projects like the "bridge to nowhere" as the root of the nation's transportation woes. Now without a doubt it is difficult to argue that the entropic nature of these thousands of projects add up to any coherent national program. However, this misses the bigger picture. Even though the $20 billion that comes from the thousands and thousands of earmark projects is a lot of money by any measure, this is only about 5 percent of the overall federal transportation program. While some of the earmarked projects are wasteful and inefficient they probably have a relatively small impact compared to the major structural flaws articulated above.

Another issue is that of governments leasing or selling their infrastructure assets to private investors. Two specific deals at the south end of Lake Michigan – in Chicago and Illinois – have sparked this movement. Such arrangements have the potential to raise a considerable amount of additional investment capital (not always linked to transportation). But this is not a silver bullet and, in the end, it is only a small sliver of a comprehensive conversation we should be having about transportation in America today.[14]

The third issue is that of establishing a national capital budget. This is an idea that has been raised many times in the past and continues to receive its share of attention. Without a doubt discussing this option for transportation is important for Congress and the nation to consider. But to paraphrase the 1999 Report of the President's Commission to Study Capital Budgeting: there are critical components of the process that should be considered first. They include setting priorities, reporting and evaluating decisions, and providing appropriate information in order to 1) spend money better and 2) be held accountable for those decisions.[15] As I've maintained, this is a far cry from how we approach transportation decision making today.

So my message here is that these ideas should not be motivated by the desire to avoid the necessary task of a more comprehensive and inclusive discussion about transportation—a discussion that includes accountability, overall intent, and connection to broader goals of economic growth and personal mobility.

## IV. POLICY PROBLEMS

The federal transportation program allows the states to define their own priorities and prioritizations and provides little in the way of oversight and no accountability for how federal funds are spent. As a result, the GAO found that it is functioning to some extent as a "cash transfer, general purpose grant program."[16]

Despite separate bureaucratic programs that lay out a framework for funding different activities, the federal government has virtually no discretion (other than the questionable earmark process) in determining which transportation projects get built or how states spend their transportation dollars. In fact, the U.S. code neuters the federal role and states specifically that the appropriation of

[14] Robert Puentes, "Cashing in on the BP Beltway," *Hartford Courant*, March 1, 2007.
[15] Report of the President's Commission to Study Capital Budgeting, Washington, 1999.
[16] U.S. Government Accountability Office, "Federal-Ad Highways: Trends, Effect on State Spending, and Options for Future Program Design," GAO-04-802, 2004.

highway funds "shall in no way infringe on the sovereign rights of the States to determine which projects shall be federally financed."[17]

This program's laxity is astonishing for several reasons. One is due to the sheer size of the program: nearly $50 billion federal dollars every year. Another is the inconsistency with other recently reformed federal programs such as welfare and education. Congress established a management assessment system for public housing agencies and created a performance measurement and reward system in the 1996 welfare reform law. The transportation system of governance and finance shares many similarities with these other areas of domestic policy.

In addition, the U.S. DOT outlined appropriate performance measures as required by the Government Performance Results Act, yet the department does not hold the recipients of federal highway funding accountable for their performance nor is funding linked to success.

Unfortunately, the breakdown in transportation politics comes at the precise time when discipline and accountability and focus are most needed. There are three critical problems:

1. *Spending is not targeted to achieve certain outcomes*. Instead of focusing on how much money it should spend, Washington should focus instead on how that money will be spent and how that spending affects our nation and its metropolitan areas. Unlike many other nations in Western Europe and parts of Asia, the U.S. is continuing to grow. Most of this growth will be accommodated in the nation's 50 largest metropolitan areas. Yet funds are not targeted to these growing and complex places. Rather, the federal government takes an almost agnostic approach to where funds are spent and as a result analysis shows a disproportionate amount of investment is happening away from the places that matter most to the prosperity of the nation.[18] The emphasis is on consensus building through logrolling where funds are distributed broadly and thinly rather than on fixing national problems.

2. *There is little attention to reducing demand for spending*. While additional sources are important, little attention is being given to managing the *demand* for revenues, how existing funds are spent and for what purpose, or how these spending decisions affect cities, suburbs, and metropolitan areas. The formulas for allocating federal highway trust fund dollars are largely made on the basis of roadway mileage and use. While this may seem intuitive on some level, it also presents obvious problems in that it sets up an insatiable desire for more funding as the roadway networks expand. There is no reward for reducing consumption in any of these formulas. Thus, any investment in transit or promotion of land use strategies to reduce VMT, reduce fuel consumption, or to be a substitute for lane miles is antithetical to how states receive funds. Within many metropolitan planning organizations, transportation plans are based on centrifugal growth projections that many consider to be unsustainable and undesirable.

3. *The system is not priced correctly*. Economists have long criticized the current system of roadway pricing. They contend user fees should be structured such that those levied on different classes of vehicles reflect the costs borne by governments to provide those vehicles

[17] *Code of Federal Regulations* 23, sec. 145(a).
[18] Robert Puentes and Linda Bailey, " Improving Metropolitan Decision Making in Transportation: Greater Funding and Devolution for Greater Accountability," in *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, B. Katz and R. Puentes, eds., Brookings, 2005.

with the opportunity to travel.[19] One such study found that single-unit trucks weighing more than 50,000 pounds contribute in user fees only 40 percent of the estimated costs of their use. Autos contribute 70 percent of their costs; pickup trucks and vans, 90 percent; and single-unit trucks weighing less than 25,000 pounds contribute 150 percent of their costs through the taxes and fees that they pay.[20] If charges were levied fairly in proportion to the costs imposed by vehicle type and those charges vigorously enforced, and if roads were constructed to more demanding standards, savings in road maintenance and replacement costs over time would be great enough to permit lower user fees for all classes of vehicles. But getting the prices right also means taking into account the range of impacts such as social costs and environmental impacts on climate change, for example.

## V. POLICY RECOMMEDNATIONS

So what can be done? One thing is certain: billions and billions of dollars of additional federal investments, without significant reform, will do precious little to fix our rusting bridges, expand our overcrowded transit systems, or unclog our ports.

The bottom line is that—with very little to show for the largest public works investment in our nation's history—the nation can no longer afford a hands-off federal program. The federal government needs to make the preservation, maintenance, and modernization of the existing system a national priority and it needs to take a lead role in holding the states accountable for doing so. Objectives like safety should be assumed, not hoped for.

There are three critical areas that demand federal attention:

1. *Rebuild the public trust before raising taxes.* To regain credibility and open the door to proposals for increased funding, the federal government must make sure the transportation program is transparent, that spending is accountable and subject to performance measures, and that we are learning and improving on past experiences. Rather than writing blank checks, the federal government should restore fiscal discipline and responsibility and should have some say in how federal transportation funds are spent. Aside from considering environmental impacts all projects that involve new capacity must be reviewed for their impacts on outcomes such as employment, operating efficiency, cost effectiveness, land use policies, and level of local funding commitment.

2. *Develop a coherent national purpose and target spending.* This is not about picking winners or losers. It is about updating the 1950's era transportation program to the realities of the 21st century. As such the federal program needs a true national priority program that focuses on congested areas, gateways and corridors, and freight hubs. But in addition to just focusing on increasing revenues for transportation the nation deserves a real conversation about curbing the demand for spending. The federal government could, for example, reduce the federal matching requirements for highway projects to 50 percent like it is for new transit projects to promote better project selection. States could also be rewarded for increasing their own funding and for

[19] See e.g., Kenneth Small, Clifford Winston, and Carol A. Evans, *Road Work: A New Highway Pricing and Investment Policy* Brookings, 1989.
[20] Martin Wachs, "Improving Efficiency and Equity in Transportation Finance," in *Taking the High Road: A Metropolitan Agenda for Transportation Reform*, B. Katz and R. Puentes, eds., Brookings, 2005.

meeting performance goals.[21] At the same time, the federal government should help states and metropolitan areas fund nationally significant projects by acting as a guarantor of debt through a national transportation infrastructure bank similar to the European Investment Bank. In addition to addressing the financing issue such an effort could, if carefully constructed to ensure transparency and accountability, help prioritize projects that are critical to the nation's competitiveness. If nothing else, this idea needs to be amplified and aired in the halls of transportation power and research.

3. *Unleash market dynamics to address finance, demand, and operational efficiencies.* The mounting transportation pressures on metropolitan areas occur at a time of severe fiscal constraint, pervasive frustration with congestion, and increasing opposition to road expansion. This demands a firm national commitment to make maximum use of existing road capacity and expand transportation alternatives. The federal government should, therefore, augment efforts to use state-of-the-art technology and communications to encourage market responses such as road pricing and provide oversight and advice, where appropriate, on the monetization of infrastructure assets like toll roads. The pervasive market demands for development around rail stations should be exploited.

The conversation about transportation's impact on the nation must go beyond the current narrow debate about spending levels. The simplistic "transportation spending = economic growth" calculation does not fit the complexities of metropolitan America today. From a public policy perspective we also need to know where, on what, and how to invest that dollar.[22]

## VI. CONCLUSION

History has shown that, to be effective, significant increases in revenue should be tied to meaningful updates and upgrades of the federal program. During their times, President Dwight Eisenhower and Senator Daniel Patrick Moynihan had both bold new visions for transportation as well as a revenue stream for implementation. Significant gas tax increases accompanied major transportation reforms in both 1956 and 1991. Looking at it another way: no major federal transportation reform has ever occurred without a major increase in revenues.[23]

Mr. Chairman I believe that this should be one of those times: Congress should seize the opportunity provided by the finance and funding discussion to put forth a bold new vision for transportation that truly puts America on the path to competitive, sustainable, and inclusive growth in the 21st century.

*The views expressed in this testimony are those of the author alone and do not necessarily represent those of the staff, officers, or trustees of The Brookings Institution.*

---

[21] The GAO recently pointed out that states simply substitute federal funds for spending they would have otherwise had to generate themselves. In other words, instead of funding transportation projects the federal money is, in effect, paying for state tax relief or general state spending. U.S. GAO, "Federal-Ad Highways: Trends, Effect on State Spending, and Options for Future Program Design," GAO-04-802, 2004.

[22] "Key Transportation Indicators: Summary of a Workshop," Janet Norwood and Jamie Casey, eds. National Research Council, 2002.

[23] Mortimer Downey, "Legislative Considerations for Long Term Policy Change," Prepared for the Regional Plan Association National Roundtable on Surface Transportation, Tarrytown, New York, February 20-22, 2007.