

THE FORUM ON FUNDING AND FINANCING SOLUTIONS FOR SURFACE TRANSPORTATION IN THE COMING DECADE CONFERENCE REPORT

January 2011

CONFERENCE:
September 30, 2010
Capitol Visitor Center
Washington, DC



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About the AASHTO Center for Excellence in Project Finance

Established by the American Association of State Highway and Transportation Officials (AASHTO) and the U.S. Department of Transportation (USDOT) through Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), the mission of the AASHTO Center for Excellence in Project Finance is to provide support to State Departments of Transportation in the development of finance plans and project oversight tools and to develop and offer training and state-of-the-art finance methods to advance transportation projects and leverage funding.

The Center provides four primary services:

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EXECUTIVE SUMMARY



In recognition of the need to discuss a broad range of tools to address the transportation “funding gap,” the AASHTO Center for Excellence in Project Finance convened a forum on September 30, 2010, at the Capitol Visitor Center in Washington, DC, for members of Congress, Congressional staff, and transportation industry stakeholders.

The forum, entitled *Funding and Financing Solutions for Surface Transportation in the Coming Decade*, was organized around six discussions that addressed:

- ◁ Near- and medium-term funding options for the Federal surface transportation programs
- ◁ Current and potential future applications of Federal financing tools
- ◁ Funding and financing initiatives that are meeting with success at state and local levels of government and whose use could be expanded

Forum speakers included members of Congress, representatives of state and local governments, and professionals from educational and private sector transportation-focused organizations and businesses.

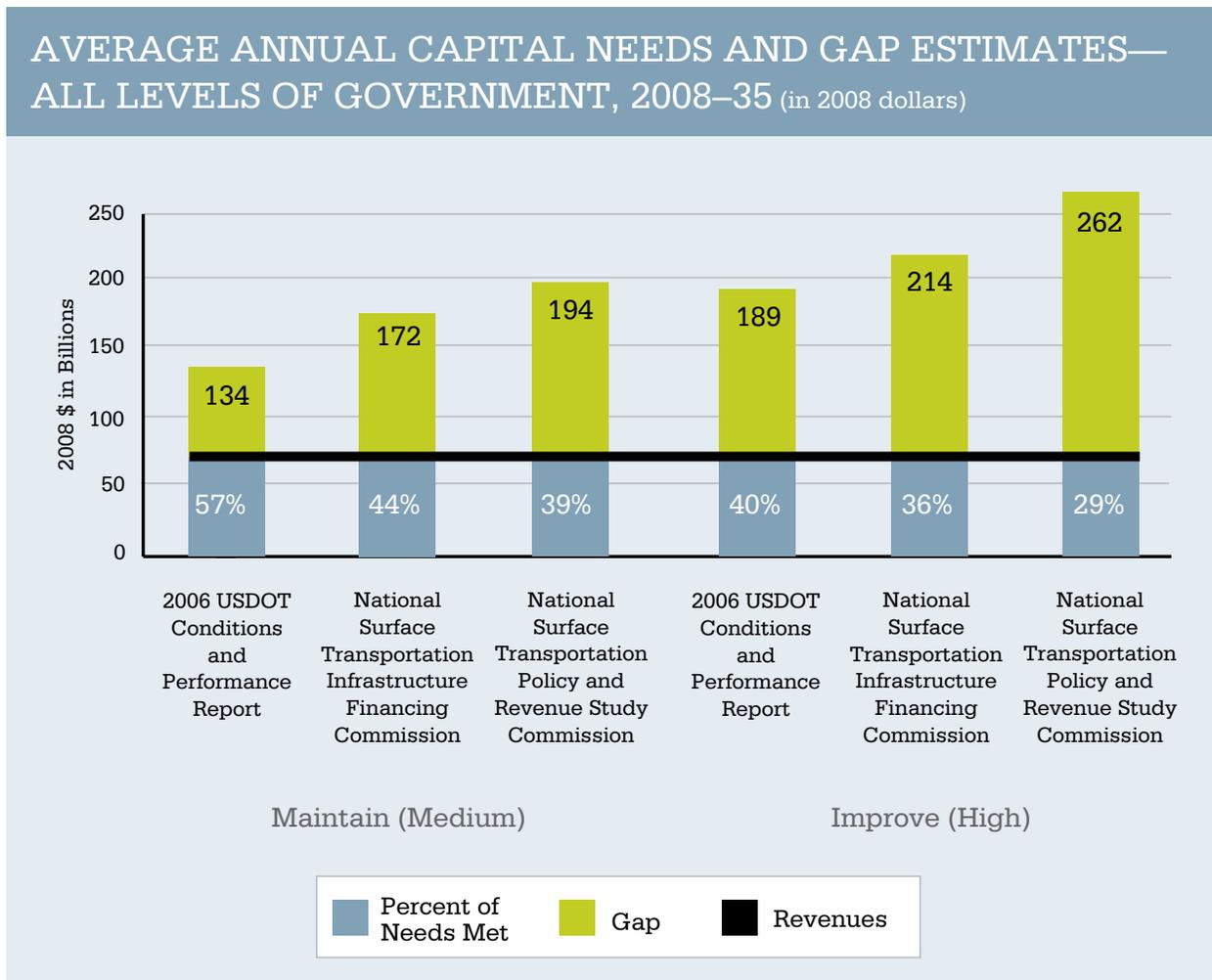
The AASHTO Center for Excellence in Project Finance would like to recognize the partnership and funding support for the forum from the following organizations:

- ◁ America 2050 at the Regional Plan Association
- ◁ Fels Institute of Government at the University of Pennsylvania
- ◁ Georgia Institute of Technology
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- ◁ Keston Institute for Public Finance and Infrastructure Policy at the University of Southern California
- ◁ Meridiam Infrastructure
- ◁ Nossaman LLP
- ◁ U.S. Department of Transportation

WHERE ARE WE HEADED?

Since its inception in 1956, the Highway Trust Fund (HTF) has helped to ensure that Federal highway user fees are spent for transportation purposes. However, as a result of the weak U.S. economy, the increasing discrepancy between receipts and outlays in the HTF in recent years has created a solvency crisis. Without three intra-governmental transfers from the general fund of the U.S. Treasury, totaling \$34.5 billion since 2008, balances in the Highway and Mass Transit Accounts would have fallen close to zero over the course of the last several years. The recurring potential for severe cutbacks in Federal funding for state highway and transit programs combined with the significantly reduced purchasing power of motor fuels taxes is creating a near-term crisis for investment in our nation's transportation assets.

At the same time, investment needs continue to grow. As seen in the exhibit below, according to the National Surface Transportation Infrastructure Financing Commission (Financing Commission), over the period from 2008–2035, revenues generated under current policies provide enough resources to meet only 44 percent of the requirements to maintain the current system; similarly, such revenues can fund only 36 percent of the costs to improve the system.



Source: National Surface Transportation Infrastructure Financing Commission

Over the period referenced above, the Financing Commission's baseline revenue forecast projects an average annual growth rate of 0.9 percent in current-law HTF net revenues. Assuming a 2.0 percent average annual inflation rate, Federal program purchasing power in 2008 dollars would drop to \$27.1 billion by 2035, a 25.5 percent decline from 2008.

WHAT CAN WE DO ABOUT IT?

A number of funding and financing tools are at our disposal. To clarify, *funding* means revenue available to pay for investment in transportation assets or programs. *Financing* relates to the use of financial tools or techniques to leverage project revenues, accelerate project development, and match the costs and benefits of long-lived assets.

On the funding front, many transportation professionals (including the participants in the September 30th forum) agree that the traditional HTF funding sources, particularly the motor fuels tax, hold the greatest potential for addressing the current discrepancy in receipts and outlays in the HTF. An array of other sources, with particularly strong potential accorded to a vehicle miles traveled fee, present opportunities for addressing the long-term investment requirements of maintaining and modernizing our national surface transportation systems. The forum examined the following category of funding options:

- ◁ Existing HTF Sources
- ◁ Vehicle-related Sources
- ◁ Motor Fuel-related Taxes
- ◁ Broad-based Taxes and General Fund Revenues
- ◁ Freight-related Taxes
- ◁ Tolling and Comprehensive Road Pricing Options
- ◁ Value Capture Strategies

A broad array of existing and potential funding sources with illustrative revenue potential is provided below.

Surface Transportation Funding Options Matrix

(all revenue estimates in \$ millions)

Funding Mechanisms	Mechanism Yield (2011)	Illustrative Rate	Revenues 2011	Average Revenues 2011-2016	Total Revenues 2011-2016
Annual Drivers License Surcharge	\$1.00 Surcharge = \$ 222	\$5.00	\$ 1,110	\$ 1,165	\$ 6,993
Annual Highway Miles Traveled Fee (All Light Duty Vehicles)*	1c/VMT = \$ 6,538	2.0¢	\$ 13,075	\$ 13,474	\$ 80,843
Annual Highway Miles Traveled Fee (All Trucks)*	1c/VMT = \$ 977	3.0¢	\$ 2,931	\$ 3,020	\$ 18,120
Annual Registration Fee (Light Duty Vehicles)	\$1.00 Fee = \$ 261	\$10.00	\$ 2,613	\$ 2,741	\$ 16,448
Annual Registration Fee (Trucks)	\$1.00 Fee = \$ 4.4	\$15.00	\$ 66	\$ 66	\$ 399
Container Tax	\$1 per TEU = \$ 605	\$15.00	\$ 9,076	\$ 10,658	\$ 63,946
Dedicated Income Tax—Personal	1% of current taxes = \$ 1,130	1.0%	\$ 11,301	\$ 11,881	\$ 71,285
Dedicated Income Tax—Business	1% of current taxes = \$ 383	1.0%	\$ 3,832	\$ 4,029	\$ 24,172
Diesel Tax Increase	1c/gal = \$ 386	15.0¢	\$ 5,794	\$ 6,052	\$ 36,309
Gas Tax Increase	1c/gal = \$ 1,379	10.0¢	\$ 13,795	\$ 14,030	\$ 84,183
Harbor Maintenance Tax	0.1% Tax = \$ 1,236	0.5%	\$ 6,181	\$ 6,581	\$ 39,485
HVUT Increase	10% Increase = \$ 97	15.0%	\$ 146	\$ 169	\$ 1,017
Imported Oil Tax	\$1.00/Bbls = \$ 4,217	\$1.00	\$ 4,217	\$ 4,356	\$ 26,138
Sales Tax on Auto-related Parts & Services	1.0% of Sales = \$ 2,567	1.0%	\$ 2,567	\$ 2,823	\$ 16,938
Sales Tax on Gas	1.0% of Sales = \$ 2,987	8.4%	\$ 25,091	\$ 30,945	\$ 185,671
Sales Tax on Diesel	1.0% of Sales = \$ 868	10.6%	\$ 9,198	\$ 11,484	\$ 68,903
Sales Tax on New Light Duty Vehicles	1.0% of Sales = \$ 2,337	1.0%	\$ 2,337	\$ 2,571	\$ 15,427
Sales Tax on New and Used Light Duty Vehicles	1.0% of Sales = \$ 3,515	1.0%	\$ 3,515	\$ 3,837	\$ 23,021
Share of US Customs Revenues	1% of Receipts = \$ 333	1.0%	\$ 333	\$ 381	\$ 2,288
Tire Tax on Light Duty Vehicles	\$1.00 Fee = \$ 1,960	\$3.00	\$ 5,880	\$ 6,168	\$ 37,009
Ton Freight Charge—All Modes	1c/ton = \$ 164	25.0¢	\$ 4,111	\$ 4,432	\$ 26,592
Ton Freight Charge—Truck Only	1c/ton = \$ 113	25.0¢	\$ 2,835	\$ 3,057	\$ 18,340
Ton-Mile Freight Charge—All Modes	1c/ton-mile = \$ 43,497	0.5¢	\$ 21,748	\$ 23,446	\$ 140,678
Ton-Mile Freight Charge—Truck Only	1c/ton-mile = \$ 12,731	0.5¢	\$ 6,365	\$ 6,862	\$ 41,174
Truck/Trailer Sales Tax Increase	1% of Sales = \$ 219	5.0%	\$ 1,095	\$ 1,529	\$ 9,174
Truck Tire Tax Increase	10% Increase = \$ 33	10.0%	\$ 33	\$ 48	\$ 286
US Freight Bill—All Modes	1% of Sales = \$ 7,612	1.0%	\$ 7,612	\$ 8,206	\$ 49,236
US Freight Bill—Truck Only	1% of Sales = \$ 6,608	1.0%	\$ 6,608	\$ 7,124	\$ 42,745
Total Revenues			\$ 173,465	\$ 191,137	\$1,146,819

*VMT fee estimates refer to miles traveled on Interstate System.

Source: American Association of State Highway and Transportation Officials

In addition, the forum examined the following financing tools for surface transportation:

- ◁ Tax-exempt Bonds
- ◁ Direct Federal Credit (e.g. TIFIA)
- ◁ Grant Anticipation Borrowing (e.g. GARVEE bonds)
- ◁ State Infrastructure Banks
- ◁ Private Activity Bonds
- ◁ Build America Bonds and other tax-credit bonds
- ◁ Public-private Partnerships
- ◁ National Infrastructure Bank

CONCLUSION

As with other discussions on funding and financing surface transportation, the forum showed that there is no shortage of options when it comes to supporting investments at Federal, state, and local levels. A distinguishing element of this discussion, however, was real-life innovation in financing concepts illustrated through case studies from across the country that Congress could draw upon immediately in crafting reauthorizing legislation for the surface transportation program. Indeed, providing a variety of examples and illustrations of these options was a key objective of the forum, so that Congressional leadership and staff could be more conversant with them when considering legislation. The creative solutions considered at the forum are detailed in the speaker white papers in Appendix A.

Some of the highlights of the alternatives discussed include: conversion of the current volume-based excise tax on gasoline by volume to a sales tax levied proportionately to the price of fuel, more efficient use of Federal-aid highway apportionments to leverage every dollar of Federal investment, value capture-based public-private partnerships, use of the tax code to accelerate financing of transportation investments, and expansion of existing programs such as TIFIA.

As Congress continues its deliberations on the next surface transportation reauthorization, the intended purpose of the forum and this report is to provide a series of viable funding and financing considerations to support surface transportation investments in the coming decade and to serve as a reference platform for the national policy discussion on how the country can forge a path forward in this period of transportation funding uncertainty.



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PART I—WHERE ARE WE HEADED?



INTRODUCTION

“Since its creation in 1956, the Highway Trust Fund (HTF) generally has provided stable, reliable, and substantial highway and transit funding. In recent years, however, the stability and adequacy of the HTF has diminished. Projections of future Federal investment needs and HTF revenues suggest that the situation will continue to deteriorate if nothing is done to boost revenues.”

This statement from *Paying Our Way: A New Framework for Transportation Finance—Report of the National Surface Transportation Infrastructure Financing Commission* (February 2009) summarizes the confluence of events—declining revenue at a time of increasing investment needs—that is creating deep concern at all levels of government about the outlook for adequate funding for maintenance and capacity improvements in highway and transit assets in the United States.

While addressing the looming transportation investment crisis will require sustained commitment from a broad range of stakeholders, a key component in this effort is the funding and financing mechanisms that are, or could become, available to support investment in transportation infrastructure. In recognition of the need to discuss a broad range of tools to address the transportation “funding gap,” the AASHTO Center for Excellence in Project Finance convened a forum on September 30, 2010, at the Capitol Visitor Center in Washington, DC, for members of Congress, Congressional staff, and transportation industry stakeholders.

Discussions were organized around six sessions that addressed:

- ◁ Near- and medium-term funding options for the Federal surface transportation programs
- ◁ Current and potential future applications of Federal financing tools
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- ◁ Nossaman LLP
- ◁ U.S. Department of Transportation

Following a brief review of the history, current status, and outlook for Federal transportation funding, these proceedings summarize the presentations and discussion in each of the six forum sessions. White papers prepared by session speakers are included in Appendix A, and a forum participant list is provided in Appendix C.

BACKGROUND

Since its inception in 1956, the HTF has helped to ensure that Federal highway user fees are spent for transportation purposes. The HTF was created by the Highway Revenue Act of 1956 to ensure a dependable source of funding for the National System of Interstate and Defense Highways (the Interstate Highway System) and to serve as a source of funding for the remainder of the Federal-aid Highway Program. In the original Highway Revenue Act, the crediting of user taxes to the HTF was to expire at the end of FY1972. Subsequent legislation has, however, periodically extended the imposition of transportation-related user fees and their transfer to the HTF. Most recently, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) extended the program provisions through September 30, 2009, with a series of short-term extensions since then. Originally, the HTF was generally dedicated to building the Interstate Highway System. Following establishment of the Mass Transit Account in the HTF in April 1983, a portion of the revenue accruing to the HTF is directed to this account for expenditure on transit needs.

Historically, the great majority of Federal funds are used to support capital spending in surface transportation—accounting for close to half of the investment in highway and transit assets in recent years (44 percent for each mode in 2006, with long-term averages of 45percent for highways and 50percent for transit). Nearly 90 percent of Federal surface transportation funding is provided from the HTF, whose revenues come from Federal excise taxes on motor fuels (currently 18.4 cents per gallon for gasoline/gasohol and 24.4 cents per gallon for diesel fuel) and taxes on truck tires, sales of trucks and tractor trailers, and a heavy vehicle use tax. Motor fuels taxes account for about 89percent percent of HTF net receipts.

With balances and annual receipts being sufficient to fund obligations authorized by Congress in sequential surface transportation legislation, the HTF funding mechanisms enabled the United States to meet a significant portion of its transportation infrastructure needs for many decades. However, for a series of reasons—current and projected—the HTF is struggling with unprecedented challenges:

- ◁ As a result of significantly below-forecast economic growth, HTF receipts have fallen behind levels assumed in SAFETEA-LU to support authorized funding levels. Reduced inflows have created a structural deficit in the HTF, reducing cash balances in both the Highway and Mass Transit Accounts and causing a series of immediate-term solvency crises.
- ◁ Because the tax rate on motor fuels has not been increased since 1993, and is not indexed to any measure of inflation, the purchasing power of these tax receipts has been reduced by about 33 percent over the last 17 years based on the Consumer Price Index.

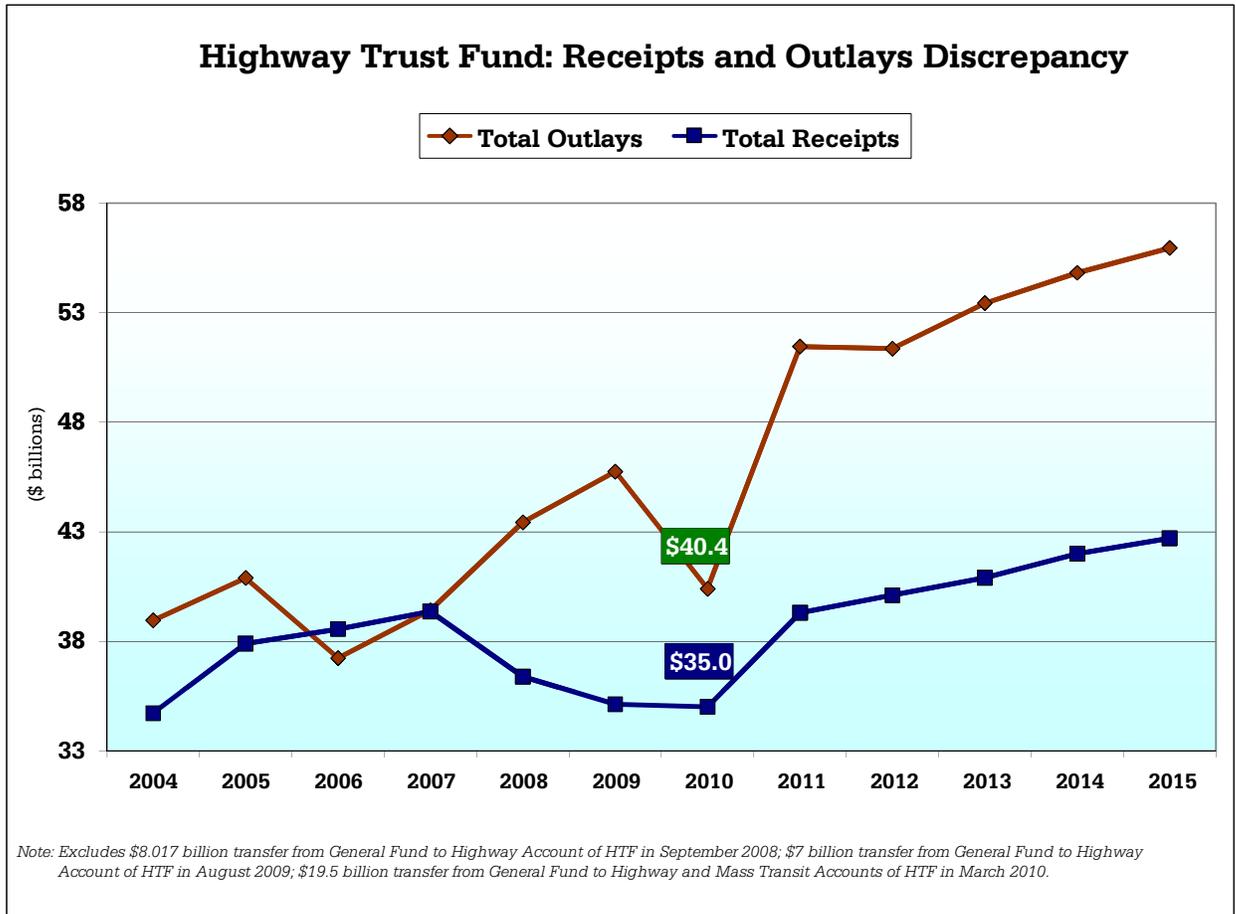
- ◁ A multitude of analyses of projected HTF operations conclude that the HTF can continue to support a strong Federal role in surface transportation investment only through increases in current revenues or an infusion of new revenues.

The next section of these proceedings addresses the foregoing observations.

Current Status of the Highway Trust Fund

In the early years (FY 2004–2007) of SAFETEA-LU, HTF receipts and outlays tracked relatively closely. However, HTF spending has generally exceeded revenues since 2007, resulting in steadily declining unspent balances in both the Highway and Mass Transit Accounts.

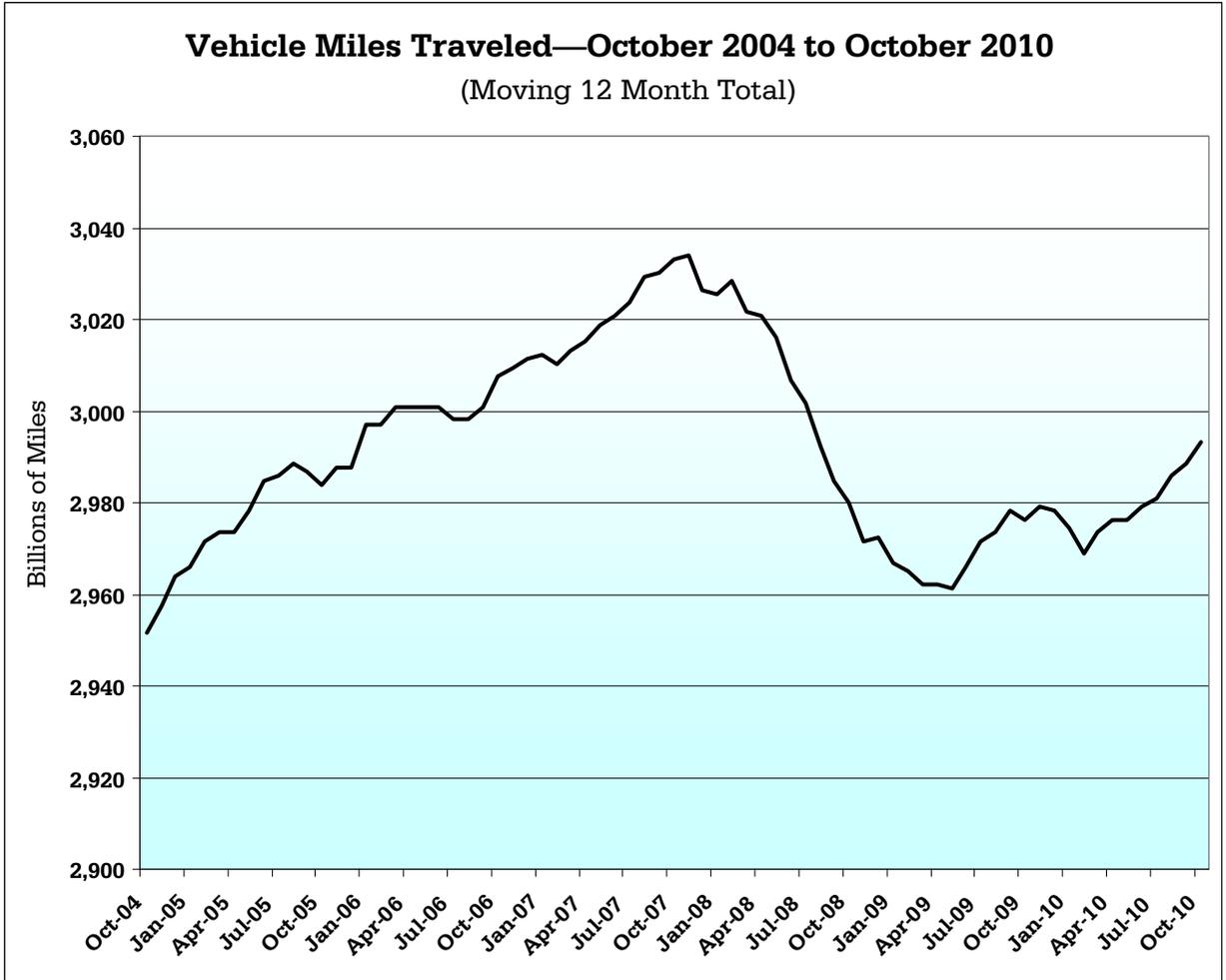
Figure 1. Highway Trust Fund: Receipts and Outlays Discrepancy



Source: American Association of State Highway and Transportation Officials

The noted revenue decline is attributable to: (i) the weak U.S. economy triggering an unprecedented drop in vehicle miles traveled in 2008 (with relatively flat travel levels since then) leading to lower motor fuel consumption and lower motor fuel tax collections and (ii) a significant drop in the non-motor fuel component of HTF revenue—specifically, a sharp decline in revenue from the retail sales tax on trucks in 2008.

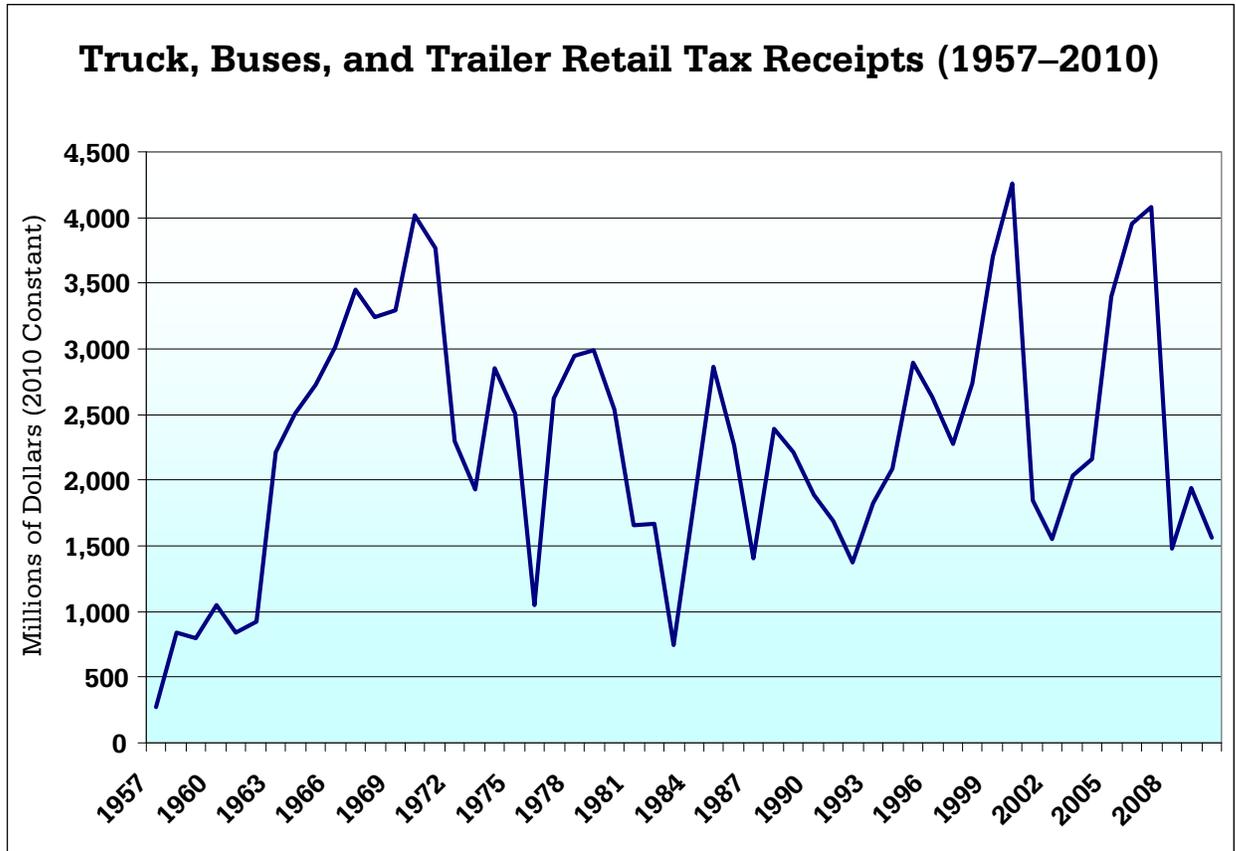
Figure 2. Vehicle Miles Traveled—October 2004 to October 2010



Source: American Association of State Highway and Transportation Officials

The discrepancy between receipts and outlays has created a solvency crisis in the HTF. Without three intra-governmental transfers from the general fund of the U.S. Treasury, totaling \$34.5 billion since 2008, balances in the Highway and Mass Transit Accounts would have fallen close to zero over the course of the last several years.

Figure 3. Truck, Buses, and Trailer Retail Tax Receipts (1957–2010)



Source: American Association of State Highway and Transportation Officials

Given that the HTF cannot incur a negative balance, absent Congressional action to increase revenue designated for deposit in the HTF (or to continue general fund transfers), deep cuts in highway and transit spending would be required to re-establish balance between outlays and current-law receipts. Because most HTF outlays in a given year are required to fund prior year commitments—reflecting the multi-year expense reimbursements typically associated with Federal-aid funding commitments provided under contract authority—at some point in the relative near-term, current-year funding will need to be cut drastically to enable the liquidation of prior-year commitments. Such a significant, concentrated cutback in the Federal-aid highway program would have widespread negative impacts for states' ongoing highway and transit programs and for both public and private sector employment. Once current-year funding commitments have been reduced, subsequent year spending could rise modestly to track the very gradual expected growth in annual HTF receipts.

Assuming no significant increase in revenue for the HTF, the timing of a severe reduction in Federal funding will depend primarily on the rate of outlay from the HTF. This rate was unusually low in FY2010 due to a combination of factors including: late enactment of the FY2010 apportionment of Federal-aid highway program dollars to states, weather-related slowdowns in state highway construction programs, and some shift to spending funds made available by the American Recovery and Reinvestment Act of 2009 (ARRA). While reduced outlays in FY 2010 created “breathing room” in the HTF, expenditure levels are likely to increase in FY2011 as states attempt to make up for delayed activity and investment.

In sum, the potential for severe cutbacks in Federal funding for state highway and transit programs combined with the significantly reduced purchasing power of motor fuels taxes is creating a near-term

crisis for investment in our nation's transportation assets. Yet at the same time, as described below, investment needs continue to grow.

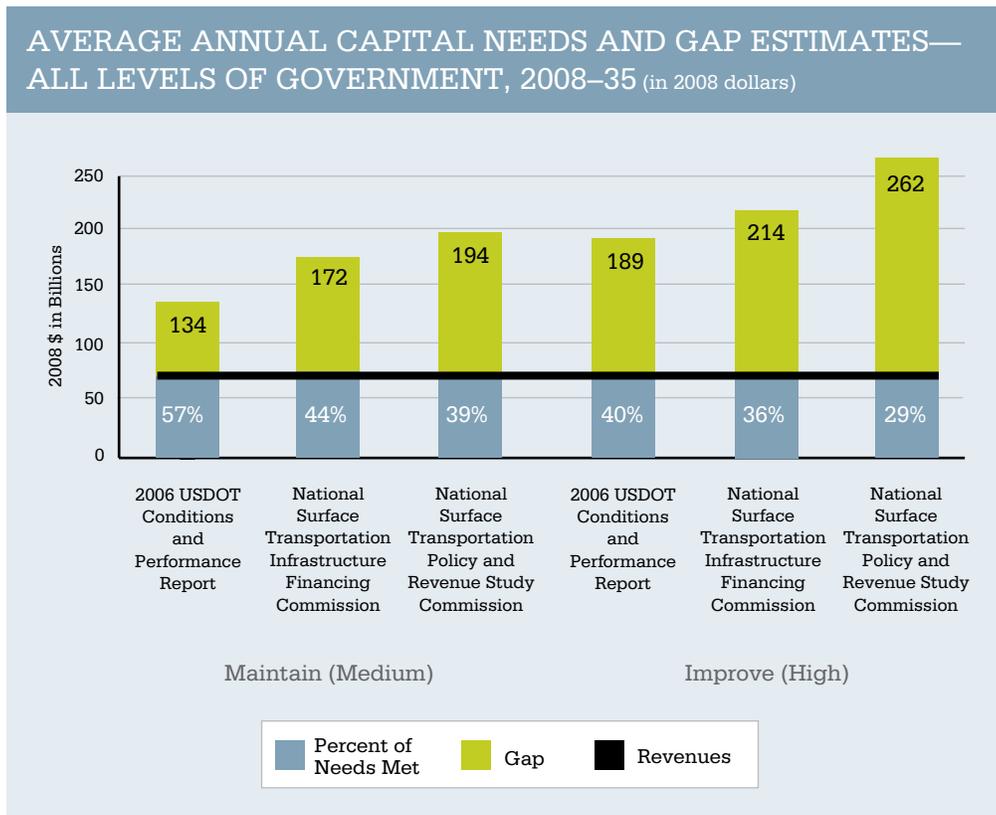
Outlook for the Highway Trust Fund

In response to its Congressional mandates, the Financing Commission examined the need for HTF resources and developed long-term forecasts of HTF revenues under current law. Taken together, the Financing Commission's revenue and need projections identify a chronic—and very large—funding gap.

Long-term Needs of the Surface Transportation Program. The Financing Commission's Base Case Investment Scenario assesses total (all levels of government) and Federal long-term capital investment needs for highway and transit based on current policies and programs and the historical Federal/non-Federal (45 percent/55 percent) spending roles. As prelude to developing its needs forecast, the Financing Commission reviewed data from the U.S. Department of Transportation's 2006 Conditions and Performance report, updates accomplished through the National Cooperative Highway Research Program, and a range of estimates of capital investment needs developed by the National Surface Transportation Policy and Revenue Study Commission (NSTPRSC).

The Financing Commission report summarizes its estimates of the total funding requirement for annual highway and transit investment to **maintain** current conditions and performance and to **improve** the system, along with the estimates from the USDOT and the NSTPRSC. As seen in the exhibit below, according to the Financing Commission, current revenues provide enough resources to meet only 44 percent of the requirements to maintain the current system; similarly, such revenues fund only 36 percent of the costs to improve the system.

Figure 4. Average Annual Capital Needs and Gap Estimates—All Levels of Government, 2008–35

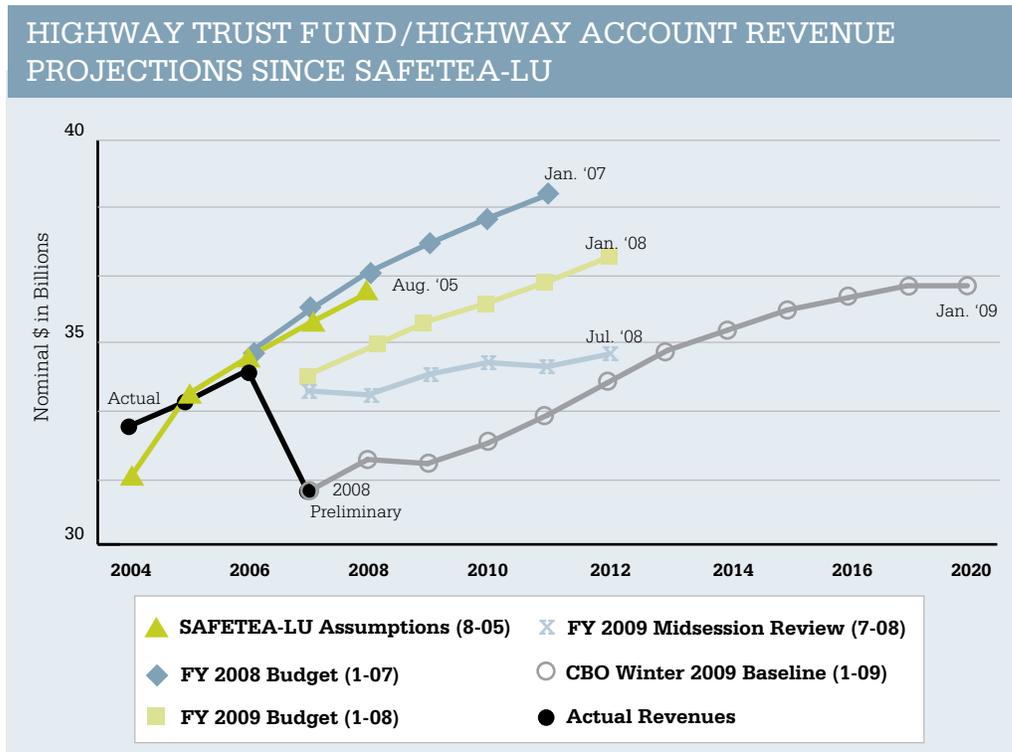


Source: National Surface Transportation Infrastructure Financing Commission

Numerous other analyses from Federal government agencies and private sector researchers show similar results—suggesting coalescence around concern for the viability of the extant Federal transportation funding program.

Highway Trust Fund Revenue Projections. As context for the Financing Commission’s work with respect to revenue projections, it is useful to note that estimates of HTF revenues have been steadily adjusted downward in recent years. The following graph shows HTF/Highway Account revenue projections since enactment of SAFETEA-LU:

Figure 5. Highway Trust Fund/Highway Account Revenue Projections since SAFETEA-LU



Source: National Surface Transportation Infrastructure Financing Commission

Against this background, the Financing Commission developed baseline and conservative forecasts of HTF revenues under current law:

- ◁ The *Baseline Forecast* assumes: (i) continued near-term decline in vehicle miles traveled and motor fuel consumed as a result of continuing weakness in the U.S. economy; (ii) a resumption of steady travel growth over the foreseeable future related to population and economic growth and land use patterns; and (iii) historical levels of vehicle fleet turnover rates.
- ◁ The *Conservative Forecast* addresses the Financing Commission’s view that the primary driver of uncertainty about HTF revenues is not travel growth but, rather, average vehicle fuel efficiency—which is expected to improve significantly in the future. This forecast, which assumes accelerated fleet turnover rates based on increased public willingness to invest in high efficiency or alternative fuel vehicles, results in reduced revenue generation reflecting lower fuel consumption associated with an increase in fleet fuel efficiency.

The *Baseline Forecast* projects an increase in current-law HTF net revenues from \$36.4 billion in 2008 to \$46.2 billion in 2035, an average annual growth rate of 0.9 percent. Assuming a 2.0 percent average annual inflation rate, Federal program purchasing power in 2008 dollars would drop to \$27.1 billion by 2035, a 25.5 percent decline from 2008.

The *Conservative Forecast* shows \$36.1 billion of receipts in 2035 which, assuming the same inflation rate, yields Federal purchasing power of \$21.2 billion in 2008 dollars, a 41.8 percent decline from 2008.

The Financing Commission concludes its analysis of near- and long-term funding gaps by stating that “while an immediate increase in existing Federal revenue sources is an essential short-term step, long-term solutions must involve new ways of funding surface transportation infrastructure.”



PART II—WHAT CAN WE DO ABOUT IT?



The status of funding and need for capital investment in our nation's surface transportation systems is well documented. In addition to the work of the Financing Commission, whose February 2009 report served as the primary source of information for the long-term revenue projections and needs assessments referenced in Part I of these proceedings, research conducted by AASHTO, the Transportation Research Board, the Congressional Budget Office, the Government Accountability Office, the Congressional Research Service, the National Surface Transportation Policy and Revenue Study Commission, and numerous industry and private sector research organizations highlights a chronic funding problem in the near term and grave uncertainty with respect to funding the maintenance and modernization of our surface transportation infrastructure over the coming decades.

Against this backdrop, the AASHTO Center for Excellence in Project Finance convened the September 30th forum to enable transportation policymakers and professionals to discuss funding and financing strategies and tools that are likely to be critical in addressing the above-noted concerns.

Throughout these proceedings, the terms funding and financing refer to distinct processes. Funding means revenue available to pay for investment in transportation assets or programs. Financing relates to the use of financial tools or techniques to leverage project revenues, accelerate project development, and match the costs and benefits of long-lived assets. We are fortunate to have efficient access to cost-effective investment capital from both public and private sector sources in the United States. The primary challenge for transportation sponsors at all levels of government is not how to finance projects and programs but, rather, how to fund them, i.e., generate sufficient revenue to pay for the delivery of planned investment.

In Part II of these proceedings, the report briefly describes funding and financing sources and opportunities. Part III summarizes related discussion from each of the forum's sessions.



Funding Sources and Opportunities

Among others, the Financing Commission and AASHTO have examined the potential magnitude of numerous sources of revenue that could augment funding for investment in surface transportation systems. Many transportation professionals (including the participants in the September 30th forum) agree that the traditional HTF funding sources, particularly the motor fuels tax, hold the greatest potential for addressing the current discrepancy in receipts and outlays in the HTF. An array of other sources, with particularly strong potential accorded to a vehicle miles traveled (VMT) fee, present opportunities for addressing the long-term investment requirements of maintaining and modernizing our national surface transportation systems.

The following information generally summarizes revenue sources by the categories used in the Financing Commission's report.

- ◁ **Existing HTF Sources.** HTF funding comprises motor fuel taxes, truck and trailer sales taxes, truck tire tax, and heavy vehicle use tax. The strength of these sources derives from a long history of raising significant funds for highways and transit, low-cost collection mechanisms, and the ability to accommodate rate increases efficiently and inexpensively. In addition to rate increases, indexing one or more of these existing sources would enable collections to maintain purchasing power over time.
- ◁ **Vehicle-related Sources.** A broad range of driver and vehicle-related taxes, fees, and charges are used at state and local levels to generate dedicated transportation revenue. These include vehicle registration fees, drivers' license surcharges, and various vehicle-related sales taxes and fees—mechanisms that, while not related to system or individual facility use, are related to transportation, generally.
- ◁ **Motor Fuel-related Taxes.** In addition to increasing and/or indexing current Federal motor fuel tax rates, opportunities for generating revenue through taxes on motor vehicle fuels include carbon tax/cap and trade programs, a tariff on imported oil, and a sales tax on motor fuels that may better preserve purchasing power than the existing flat excise tax.
- ◁ **Broad-based Taxes and General Fund Revenues.** Broad-based funding strategies include a national sales tax, dedicated income taxes, and annual general fund transfers. In this category, the large base to which taxes or transfers would be applied means that relatively low rates would generate large amounts of revenue.
- ◁ **Freight-related Taxes.** Revenue options related to freight activity include new mechanisms such as a national container fee and a freight-related sales tax, as well as expansion or diversion of existing sources such as customs duties and the harbor maintenance tax.

- ◁ **Tolling and Comprehensive Road Pricing Options.** Tolling and cordon pricing (imposition of local access charges for designated urban areas) refer to direct user fee mechanisms administered at the local, regional, or state level to price access to and/or distance traveled on individual facilities or regional road networks. Comprehensive road pricing refers to the imposition of direct user charges, in the form of a VMT fee, on all roads and all driving. Such charges could be either a flat fee (fixed number of cents per mile regardless of where or when travel occurred), a variable fee based on time of travel, level of congestion, type of road traveled, type and weight of vehicle, and vehicle emissions levels—or a combination of these pricing approaches.
- ◁ **Value Capture Strategies.** Better monetization of economic growth that is directly related to infrastructure investment can be implemented through a variety of local devices such as tax increment financing districts and special assessment districts that collect a portion of increased asset value to pay for infrastructure. Such financing structures could be facilitated beyond the local level through state or federal tax credits to projects that are repaid through increased tax revenues resulting from economic growth.

The “Surface Transportation Funding Options Matrix” (Figure 6) is one means of illustrating the revenue generation potential associated with the categories described above. Virtually all of these revenue alternatives were addressed during the September 30th forum, as detailed in Part III.

Figure 6. Surface Transportation Funding Options Matrix

Surface Transportation Funding Options Matrix

(all revenue estimates in \$ millions)

Funding Mechanisms	Mechanism Yield (2011)	Illustrative Revenues Rate	Revenues 2011	Average Revenues 2011–2016	Total Revenues 2011–2016
Annual Drivers License Surcharge	\$1.00 Surcharge = \$ 222	\$5.00	\$ 1,110	\$ 1,165	\$ 6,993
Annual Highway Miles Traveled Fee (All Light Duty Vehicles)*	1c/VMT = \$ 6,538	2.0¢	\$ 13,075	\$ 13,474	\$ 80,843
Annual Highway Miles Traveled Fee (All Trucks)*	1c/VMT = \$ 977	3.0¢	\$ 2,931	\$ 3,020	\$ 18,120
Annual Registration Fee (Light Duty Vehicles)	\$1.00 Fee = \$ 261	\$10.00	\$ 2,613	\$ 2,741	\$ 16,448
Annual Registration Fee (Trucks)	\$1.00 Fee = \$ 4.4	\$15.00	\$ 66	\$ 66	\$ 399
Container Tax	\$1 per TEU = \$ 605	\$15.00	\$ 9,076	\$ 10,658	\$ 63,946
Dedicated Income Tax—Personal	1% of current taxes = \$ 1,130	1.0%	\$ 11,301	\$ 11,881	\$ 71,285
Dedicated Income Tax—Business	1% of current taxes = \$ 383	1.0%	\$ 3,832	\$ 4,029	\$ 24,172
Diesel Tax Increase	1c/gal = \$ 386	15.0¢	\$ 5,794	\$ 6,052	\$ 36,309
Gas Tax Increase	1c/gal = \$ 1,379	10.0¢	\$ 13,795	\$ 14,030	\$ 84,183
Harbor Maintenance Tax	0.1% Tax = \$ 1,236	0.5%	\$ 6,181	\$ 6,581	\$ 39,485
HVUT Increase	10% Increase = \$ 97	15.0%	\$ 146	\$ 169	\$ 1,017
Imported Oil Tax	\$1.00/Bbls = \$ 4,217	\$1.00	\$ 4,217	\$ 4,356	\$ 26,138
Sales Tax on Auto-related Parts & Services	1.0% of Sales = \$ 2,567	1.0%	\$ 2,567	\$ 2,823	\$ 16,938
Sales Tax on Gas	1.0% of Sales = \$ 2,987	8.4%	\$ 25,091	\$ 30,945	\$ 185,671
Sales Tax on Diesel	1.0% of Sales = \$ 868	10.6%	\$ 9,198	\$ 11,484	\$ 68,903
Sales Tax on New Light Duty Vehicles	1.0% of Sales = \$ 2,337	1.0%	\$ 2,337	\$ 2,571	\$ 15,427
Sales Tax on New and Used Light Duty Vehicles	1.0% of Sales = \$ 3,515	1.0%	\$ 3,515	\$ 3,837	\$ 23,021
Share of US Customs Revenues	1% of Receipts = \$ 333	1.0%	\$ 333	\$ 381	\$ 2,288
Tire Tax on Light Duty Vehicles	\$1.00 Fee = \$ 1,960	\$3.00	\$ 5,880	\$ 6,168	\$ 37,009
Ton Freight Charge—All Modes	1c/ton = \$ 164	25.0¢	\$ 4,111	\$ 4,432	\$ 26,592
Ton Freight Charge—Truck Only	1c/ton = \$ 113	25.0¢	\$ 2,835	\$ 3,057	\$ 18,340
Ton-Mile Freight Charge—All Modes	1c/ton-mile = \$ 43,497	0.5¢	\$ 21,748	\$ 23,446	\$ 140,678
Ton-Mile Freight Charge—Truck Only	1c/ton-mile = \$ 12,731	0.5¢	\$ 6,365	\$ 6,862	\$ 41,174
Truck/Trailer Sales Tax Increase	1% of Sales = \$ 219	5.0%	\$ 1,095	\$ 1,529	\$ 9,174
Truck Tire Tax Increase	10% Increase = \$ 33	10.0%	\$ 33	\$ 48	\$ 286
US Freight Bill—All Modes	1% of Sales = \$ 7,612	1.0%	\$ 7,612	\$ 8,206	\$ 49,236
US Freight Bill—Truck Only	1% of Sales = \$ 6,608	1.0%	\$ 6,608	\$ 7,124	\$ 42,745
Total Revenues			\$ 173,465	\$ 191,137	\$ 1,146,819

*VMT fee estimates refer to miles traveled on Interstate System.

Source: American Association of State Highway and Transportation Officials



Financing Tools and Potential Opportunities

As noted above, financing refers to the use of financial tools or techniques to leverage project revenues, accelerate project development, and match the costs and benefits of long-lived assets. Sponsors of surface transportation projects in the U.S. have had efficient access to low-cost investment capital through the tax-exempt bond market for many decades. Beginning in the 1990s, an array of Federally-enabled financial products (often called “innovative finance tools”) has been made available to these same project sponsors. The following information briefly summarizes the U.S. tax-exempt bond market and Federal innovative finance tools.

Tax-exempt Bonds. Tax-exempt bonds are the traditional mechanism for debt financing of transportation infrastructure in the United States. The exemption of interest earned on such bonds from Federal and, in many cases, state and local income taxes enables them to be sold at very favorable interest rates, thereby affording state and local governments access to low-cost financing. Since 2005, the municipal bond market has averaged approximately \$410 billion, with transportation issuers (of highway, toll facility, transit, airport, and seaport bonds) accounting for about 12 percent of this volume.

Innovative Finance Tools. The Federal innovative finance tools developed over the last 20 years provide broad and flexible financial support for state and local transportation projects.

- ◀ **Direct Federal Credit.** The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides Federal credit assistance through direct loans, loan guarantees, and standby lines of credit for surface transportation projects of national and regional significance. For projects with dedicated revenue streams, TIFIA credit assistance improves capital market access, provides favorable pricing based on U.S. Treasury rates, and offers flexible repayment terms. TIFIA can help advance qualified projects that otherwise might be deferred because of size, complexity, or uncertainty over the timing of revenues. Many categories of surface transportation projects, including highway, transit, railroad, intermodal freight, and port access, are eligible for assistance.
- ◀ **Grant Anticipation Borrowing (Grant Anticipation Revenue Vehicles or GARVEE Bonds and Grant Anticipation Notes).** Grant anticipation financing structures enable public agencies to borrow against future Federal grants to generate upfront proceeds for capital investment. For highway projects, the anticipated revenue stream is Title 23 Federal-aid grants; for transit projects, Title 49 funding.



- ◁ **State Infrastructure Banks.** State Infrastructure Banks (SIBs) are lending structures initially capitalized with Federal grants and/or state funds and operated at the state level. SIBs enable Federal and state funds to be leveraged by lending (rather than granting) Federal-aid funds, which can then attract non-Federal public and private investment. SIB funds can be loaned at below-market interest rates, secured by a broad range of revenue streams, and used to provide credit enhancement to projects through loan guarantees, reserve funds, and other means. As loans or other forms of credit assistance are repaid to the SIB, its initial capital is replenished and can be re-loaned to support a new cycle of projects.
- ◁ **Private Activity Bonds.** Private activity bonds (PABs) enable private parties to access tax-exempt debt for qualified surface transportation projects. Authorized by SAFETEA-LU, the program permits USDOT to allocate up to \$15 billion to qualified highway and surface freight transfer facilities. The PAB designation enables bonds issued to finance projects with significant private sector participation to retain tax-exempt status, thereby enabling private sector sponsors to secure significantly lower cost financing than that available in the corporate bond or private equity markets. Pursuant to the “AMT holiday” in the American Recovery and Investment Act (see below), interest on PABs issued through December 31, 2010 is exempt from the alternative minimum tax.
- ◁ **Build America Bonds.** Build America Bonds (BABs) were authorized in the ARRA, which was signed into law on February 17, 2009. BABs are Federally subsidized taxable bonds that can be issued by state and local governments to finance qualified projects. The subsidy can take the form of either tax credits provided to holders of the bonds or refundable tax credits paid to issuers of the bonds. The vast majority of BABs have used the latter structure, pursuant to which issuers receive a 35percent interest rate subsidy from the U.S. Treasury (direct payment BABs). ARRA authorized the sale of BABs through December 31, 2010, with total issuance volume surpassing \$181 billion. While BABs provided a lower cost of capital to many municipal issuers, the program was discontinued at the end of 2010.

Additional/Potential Tools. An evolving category of financial tools is *public-private partnerships (P3)*. Private sector participation in delivering surface transportation infrastructure can be viewed as a continuum, ranging from construction work under traditional design-bid-build contracting methods, to expanded partnerships in design-build development, to comprehensive responsibility for design,

finance, construction, and long-term operation and maintenance through concession structures. As P3s do not generate revenue in and of themselves (they are not **funding** mechanisms), private participants are compensated by collecting user charges or by receiving annual payments from state and/or local taxes or fees (availability payment structures).

Two potential new Federal financing tools are *tax credit bonds* and a *national infrastructure bank*. Tax credit bonds are securities where the project sponsor's borrowing cost is reduced by a Federal government subsidy of all or a portion of interest expense. The subsidy takes the form of investor tax credits. In lieu of cash interest payments, the investor in such debt receives annual Federal tax credits that can be applied to offset other Federal tax liability. While there is currently no qualified tax credit bond program for surface transportation investments, such programs are in place for forestry conservation, renewable energy projects, energy conservation, qualified zone academies, and new school construction.

A variety of transportation policy makers and industry participants have proposed creation of a national infrastructure bank or investment corporation to help address infrastructure investment needs. While specifics on structure, capitalization, scope, and type of financial assistance vary among proposals, primary objectives appear to be accelerating investment in critical infrastructure that is regional and national in scope and improving the allocation of limited Federal resources.



PART III—SESSION SUMMARIES FROM THE FORUM



SESSION 1: FUNDING THE SURFACE TRANSPORTATION PROGRAM FROM 2011 TO 2015

Moderator: Lee Munnich, University of Minnesota

Speakers: Representative John Mica (R-FL), Ranking Member,
House Transportation and Infrastructure Committee
Gov. Ed Rendell (D-PA), Commonwealth of Pennsylvania

Representative Mica and Governor Rendell opened the forum by emphasizing the importance of a strong nationwide surface transportation system to economic competitiveness, public safety, quality of life, and job creation. Citing the importance of Federal transportation funding to state and local governments across the country, both speakers stressed the need for Congress to develop a multi-year reauthorization of the Federal-aid highway program.

Informed by decades of experience related to funding transportation assets and systems, Representative Mica and Governor Rendell were straightforward about the challenges inherent to the reauthorization process, as well as about differences in their own approaches to the topic. That being said, they agreed on the need to consider a broad range of funding options, ranging from increasing and/or indexing motor fuels taxes to tolling existing and/or new interstate capacity, among others. The speakers also agreed on the importance of a continued strong Federal role in funding transportation investment and on the importance of multi-year authorizations to state transportation departments' planning and contracting programs, with both of these factors pointing to the need for timely Congressional action on reauthorization.

While the focus of the Session 1 discussion was on the need for increased *funding*, Representative Mica and Governor Rendell each referenced existing Federal surface transportation *financing* programs, including TIFIA, the Railroad Rehabilitation and Improvement Financing (RRIF) program, PABs, and BABs. The speakers noted the role of each of these

programs in leveraging existing funding sources and expressed their interest in seeing continued and expanded support for these and other innovative financing tools. Discussion moved on to the role of public-private partnerships and the potential role of a national infrastructure bank in the transportation sector. Another area of discussion and agreement was on means by which the currently protracted delivery schedules for major transportation projects could responsibly be accelerated.

In conclusion, Representative Mica and Governor Rendell returned to the main theme of this first forum session—the need to address reauthorization of surface transportation funding in a full and timely manner.

SESSION 2: FUNDING THE SURFACE TRANSPORTATION PROGRAM FROM 2016–2025

Speakers: **John Horsley**, Executive Director, AASHTO
Representative Earl Blumenauer (D-OR), House Ways and Means Committee

Mr. Horsley and Representative Blumenauer reinforced the importance of restoring sufficiency and stability to the Highway Trust Fund through a multi-year reauthorization bill. They then moved on to a discussion of the need to transition to a new system for funding surface transportation over the medium term.

For many decades, the HTF's dedicated revenues (motor fuel taxes, taxes on truck tires and sales of trucks and tractor trailers, and heavy vehicle use taxes) provided solid funding for its obligations. The severe reduction in the purchasing power of motor fuel tax revenues (resulting from no adjustments to the tax rates since 1993 combined with increases in commodity and construction prices) and reduced motor fuel consumption from decreases in vehicle miles traveled and increases in fuel efficiency have severed the link between fuel consumption and associated revenue generation and investment requirements, creating the need to re-evaluate existing funding mechanisms.

A presentation in Session 2 explored the concept of converting from an excise tax to a sales tax on motor fuels to enable the HTF to generate sufficient revenue, over the next 5–6 years, to support a robust surface transportation program without raising taxes. The proposal illustrated a sales tax set, initially, at a level designed to be revenue neutral based on the prevailing price of motor fuel with the expectation that, over time, sales tax-generated revenue would increase as a result of increasing motor fuels prices. In order to protect against a sharp increase or decrease in the price of fuel, revenue could be “bracketed” by establishing floor and ceiling levels on the price of fuel. While increasing vehicle fleet efficiency is expected to be a major factor in fuel consumption and associated revenue generation over the medium and long terms, such increases are not anticipated over the next 5-6 years. Based on assumptions presented, a sales tax-based system would generate \$43 billion more than revenues estimated to result from the current excise taxes on motor fuels by 2016. In addition, this presentation also compared the recent performances of excise and sales taxes in California, which showed an inverse relationship between growing sales tax receipts and flat or declining excise tax receipts.

The session's speakers also looked farther ahead by presenting the concept of moving to a more direct user fee charging system through the mechanism of a VMT fee. The VMT concept has been studied extensively by numerous research organizations and has been the subject of detailed study and testing, through a pilot program, in Oregon. While the primary goal of a national VMT-based system would be to generate significant and sustainable revenue by re-establishing the relationship between travel and revenue generation, the concept could also lead to more efficient use of our surface transportation system.

In closing, Representative Blumenauer and Mr. Horsley returned to the distinction between funding and financing to emphasize the need to develop reliable funding sources to support near- and intermediate-term investment in essential surface transportation systems.

SESSION 3: EXPANDING EXISTING FEDERAL PROGRAMS FOR FUNDING AND FINANCING TRANSPORTATION

Moderator: Jack Basso, Director of Program Finance and Management, AASHTO

Speakers: Polly Trottenberg, Assistant Secretary for Transportation Policy, USDOT
Geoff Yarema, Partner, Nossaman LLP
David Seltzer, Principal, Mercator Advisors

On September 6, 2010, the President announced his intention to reform and expand the nation's investment in transportation infrastructure and return the Highway Trust Fund to solvency through a long-term reauthorization bill. As part of his announcement, the President announced his intention to work with Congress to fully pay for the transportation plan.

Session 3 began with a description of certain features of the Obama Administration's infrastructure investment plan including: multi-modal emphasis with continued support for development of high speed rail corridors, a national infrastructure bank, emphasis on performance-based systems and increased reliance on cost-benefit analysis as part of project evaluations, and a focus on projects of strategic national importance that meet USDOT priorities such as safety, economic competitiveness, and livable communities.

With the discussion of reauthorization as background, the session's focus turned to the current and future role of Federal financing tools in leveraging funding sources.

The presentation on existing Federal financing tools and potential improvements to these tools addressed TIFIA, PABs (including the "AMT holiday"), SIBs, and BABs, and continued to a discussion of enabling states to leverage their Federal-aid highway apportionments and defining the role and scope of a potential national infrastructure bank, including its relationship with existing Federal credit programs such as TIFIA.

The presentation on new tools focused on development of a tax credit bond program to finance transportation infrastructure. Qualified tax credit bonds (QTCBs) are intermediate- to long-term taxable rate debt securities issued by state and local governments and other qualified entities to finance specified capital investments. In lieu of cash interest, bondholders receive a tax credit that can be applied against the investor's Federal income tax liability. To date, Congress has authorized QTCB programs for a number of purposes but not for investment in surface transportation. This discussion included a summary of the budgetary impacts of tax credit bonds compared with other Federal funding tools.

For a detailed treatment of the concepts discussed in Session 3, the following white papers are included in Appendix A: *Enhancing the Ability of States to Finance Transportation Projects of National and Regional Significance* by Geoff Yarema and *Evolving Role of the Federal Government and Utilizing a New Tax Credit Program for Transportation Infrastructure* by David Seltzer.

LUNCHEON KEYNOTE: FUTURE OF BUILD AMERICA BONDS

Senator Ron Wyden (D-OR)

By late third quarter 2008, the municipal market—along with the capital markets generally—was being severely impacted by the nation's credit crisis. In response to spreading financial and economic stress, Congress enacted the American Recovery and Reinvestment Act of 2009, which was signed into law on February 17, 2009. Among ARRA's key provisions was authorization for state and local governments to issue BABs, which are Federally subsidized taxable governmental bonds available to finance qualified projects. The subsidy could take the form of either tax credits provided to holders of the bonds or refundable tax credits paid to issuers of the bonds. The vast majority of BABs have used the latter structure, pursuant to which issuers receive a 35 percent interest rate subsidy from the U.S. Treasury (direct payment BABs).

The BABs program has greatly exceeded expectations. As taxable securities, BABs enabled state and local governments to attract financing for infrastructure investment from multiple new classes of investors, accomplishing the program's goal of stimulating and stabilizing the depressed municipal bond market. In addition, the shift of approximately 21 percent of long-term municipal debt issuance from the tax-exempt to the taxable market over the course of the BABs program has resulted in lower interest rates in the municipal market, generally, through a rebalancing of supply and demand.

From February 2009 through September 2010, over \$137 billion of BABs have been sold by state and local governments across the country. Transportation-related issuance for highway, toll road, transit, and airport projects constitutes up to 31 percent of all BABs. ARRA authorized the sale of BABs through December 31, 2010. The program, currently under discussion in the year-end Congressional session, will sunset absent extension.

SESSION 4: "SOLVING SEVERAL PROBLEMS TOGETHER" APPROACH

Moderator: **Mark Pisano**, Senior Fellow, University of Southern California

Speakers: **Richard Little**, Director, Keston Institute for Public Finance and Infrastructure Policy, University of Southern California
Shin-Pei Tsay, Director, Leadership Initiative for Transportation Solvency, Carnegie Endowment for International Peace
Bob Yaro, President, Regional Plan Association
David Thornburgh, Executive Director, Fels Institute of Government, University of Pennsylvania

Session 4 bridged the forum's morning and afternoon sessions by considering transportation funding and finance in the context of broad national challenges and then by linking these topics to activity and opportunity at the state and local level.

Key themes of this session included the following.

Message and Communication. The speakers recommended recasting the national transportation discussion to recall that investing in transportation has always been about investing in economic development and productivity and about connecting people and businesses to opportunities. The importance of communicating directly with voters to convey both the reasons and the consequences of decreased Federal transportation funding as well as the benefits to be derived from strategic investment in our surface transportation systems was emphasized.

Opportunity to Accomplish Multiple Goals. Speakers identified relationships between transportation investment and other national goals—such as reducing energy consumption and carbon emissions—and presented strategies for achieving mutually beneficial goals through strategic investment and pricing decisions. Relevant international pricing and investment practices were described as part of this discussion. A specific example examined the possibility of pension fund investments in transportation infrastructure that could simultaneously stabilize pension assets over a longer time period and achieve beneficial societal goals.

Importance of Appropriate Pricing and Partnerships. The panelists spoke to the importance of allocating transportation costs across the entire spectrum of beneficiaries through a combination of user fees and broad-based revenue generation. A number of large-scale regional transportation projects, and the Federal, state, regional, and local funding and financing commitments that supported their development, were described. Emphasis was placed on targeted Federal investment that can continue to leverage such partnership efforts across the country. The use of value capture systems to finance transit and rail projects was also addressed in this portion of the session's discussion.

White papers expanding on the concepts discussed in Session 4 are included in Appendix A as follows: *Towards a New Federal Role in Infrastructure Investment: Using U.S. Sovereign Wealth to Rebuild America* by Richard G. Little; *Leadership Initiative for Transportation Solvency: Multiple Opportunities in Pricing Transportation* by Shin-pei Tsay; *Toward a New Model for Transportation Finance* by Robert D. Yaro; and *Investing in Transportation* by David Thornburgh.

SESSION 5: WHAT CAN WE LEARN FROM RECENT EXPERIMENTS IN TRANSPORTATION FINANCE THROUGHOUT THE COUNTRY?

Moderators: **Lowell Clary**, P3 Development Company; Former Assistant Secretary for Finance and Administration, Florida DOT and Mort Downey, PB Consult
Mort Downey, PB Consult

Speakers: **Phil Russell**, HW Lochner; Former Assistant Executive Director for Innovative Partnerships, Texas DOT
Jim Preusch, Chief Financial Officer, Alameda Corridor, California
Mike Parker, Managing Director, Jeffrey A. Parker and Associates
Scott Polikov, Principal, Gateway Planning Group, Inc.
David Levinson, Associate Professor and RP Braun/CTS Chair of Transportation, University of Minnesota

In Session 5, the forum's focus segued to a discussion of state, regional, and local funding and financing initiatives. The unifying theme in this session was the creative efforts being used by transportation sponsors to deliver infrastructure projects.

A review of state and local funding approaches included: increases in state motor fuel taxes, indexing state and local option motor fuel taxes, tolling, development of high occupancy toll (HOT) lanes on both new and existing roadway capacity, and use of availability payment and value capture structures.

The discussion of financing strategies addressed the full range of Federal financing tools (tax-exempt debt, PABs, BABs, SIBs, and loans and other Federal credit support available through the TIFIA and RRIF programs) as well as flexible procurement approaches such as design build and a varied range of public-private partnership structures. A recurring theme was the value of each of these tools (often in combination with public and/or private sector equity) to major project development, the layered use of multiple tools in one project, and the importance of continuing – and expanding – the current array of financing tools and techniques.

The session addressed “traditional” and availability payment-based public-private partnerships in some detail, including project characteristics that suggest the utility of one approach versus the other, increased focus on risk transfer and revenue sharing, focus on both project development and long-term operation and maintenance requirements, and emerging trends in this area of transportation finance. Another area of emphasis for this session was value creation through facility design and local planning and value capture through assessment and fee structures applied to multiple revenue streams.

The following white papers are included in Appendix A: *Innovations that Work: Funding and Financing Transportation in Florida* by Lowell R. Clary; *The ACTA-USDOT Loan Experiment* by Jim Preusch; *Availability Payments and Other Forms of P3s for Surface Transportation* by Michael Parker; *The Role of Sustainable Development in Sustaining Transportation* by Scott Polikov and Mike Krusee; and *Value Capture* by David Levinson.

SESSION 6: IS THERE ANOTHER WAY?

Moderator: **Jane Garvey**, North American Chairman, Meridiam Infrastructure

Speakers: **Paul Sorenson**, Operations Researcher, RAND Corporation
Paul Hanley, Director of Transportation Policy Research Program and Associate Professor, Urban and Regional Planning, Department of Civil & Environmental Engineering, University of Iowa
Glenn Deitiker, President, Televant Caseta

The forum's final session looked forward with a discussion of comprehensive road pricing through the use of vehicle miles traveled fees.

As described in earlier sections of these proceedings, and as discussed throughout the forum, the long-established system of funding the HTF primarily through Federal motor fuel excise taxes is not generating annual receipts sufficient to pay for necessary spending. Without significant increases in such taxes, the gap between HTF receipts and outlays will continue to grow. The time to reconsider how we pay for Federally-supported investment in surface transportation systems is upon us.

A broad array of transportation professionals and policymakers believe that the most viable methodology for change is comprehensive road pricing through a VMT fee. The goal for a VMT-based pricing system is to re-establish the connection between road usage and investment requirements by shifting from an indirect user fee system based on fuel consumption to a direct user fee system based on travel. While a VMT system will not obviate the need to periodically increase fees or to index fees, it would be unaffected by increasing fuel economy or changes in fuel type, and is expected to provide a significant and sustainable source of highway revenue to fund both investment and major maintenance of surface transportation assets.

Numerous studies and pilot projects have demonstrated the general feasibility of implementing VMT fees at the Federal or state level. The national VMT discussion is now shifting to the design of trials to assess the many factors—technical, financial, institutional, and political—that will need to be addressed prior to implementation of VMT pricing on a large scale. Reflecting this trend, the speakers in Session 6 described a national pilot program designed to test feasibility and public acceptance of a mileage-based charging system, proposed research to test use of a VMT pricing system through trials in four to six states, and discussed alternative technologies for measuring travel and collecting mileage-based fees.

A white paper entitled *Examining Options for Implementing Mileage-Based User Fees* by Paul Sorensen of the RAND Corporation is included in Appendix A.



THE FORUM ON FUNDING AND FINANCING
SOLUTIONS FOR SURFACE TRANSPORTATION IN
THE COMING DECADE CONFERENCE REPORT

PART IV—CONCLUSION



As with other discussions on funding and financing surface transportation, the forum showed that there is no shortage of options when it comes to supporting investments at Federal, state, and local levels. A distinguishing element of this discussion, however, was real-life innovation in financing concepts illustrated through case studies from across the country that Congress could draw upon immediately in crafting reauthorizing legislation for the surface transportation program. Indeed, providing a variety of examples and illustrations of these options was a key objective of the forum, so that Congressional leadership and staff could be more conversant with them when considering legislation. The creative solutions considered at the forum are detailed in the speaker white papers in Appendix A.

Some of the highlights of the alternatives discussed include: conversion of the current volume-based excise tax on gasoline to a sales tax levied proportionately to the price of fuel, more efficient use of Federal-aid highway apportionments to leverage every dollar of Federal investment, value capture-based public-private partnerships, use of the tax code to accelerate financing of transportation investments, and expansion of existing programs such as TIFIA.

As Congress continues its deliberations on the next surface transportation reauthorization, the intended purpose of the forum and this report is to provide a series of viable funding and financing considerations to support surface transportation investments in the coming decade and to serve as a reference platform for the national policy discussion on how the country can forge a path forward in this period of transportation funding uncertainty.



APPENDIX A—SPEAKER WHITE PAPERS



Session 3: Expanding Existing Federal Programs for Funding and Financing Transportation

◀ **Geoff Yarema**, Partner, Nossaman LLP

Enhancing the Ability of the States to Finance Transportation Projects of National and Regional Significance: The Evolving Role of the Federal Government

◀ **David Seltzer**, Principal, Mercator Advisors LLC

Evolving Role of the Federal Government and Utilizing a New Tax Credit Program for Transportation Infrastructure

Session 4: “Solving Several Problems Together” Approach

◀ **Richard Little**, Director, Keston Institute for Public Finance and Infrastructure Policy, University of Southern California

Towards a New Federal Role in Infrastructure Investment: Using U.S. Sovereign Wealth to Rebuild America

◀ **Shin-Pei Tsay**, Director, Leadership Initiative for Transportation Solvency, Carnegie Endowment for International Peace

Leadership Initiative for Transportation Solvency: Multiple Opportunities in Pricing Transportation

◀ **Bob Yaro**, President, Regional Plan Association

Toward a New Model for Transportation Finance

◀ **David Thornburgh**, Executive Director, Fels Institute of Government, University of Pennsylvania

Investing in Transportation

Session 5: What Can We Learn from Recent Experiments in Transportation Finance Throughout the Country?

◀ **Lowell Clary**, P3 Development Company; Former Assistant Secretary for Finance and Administration, Florida DOT

Innovations that Work: Funding and Financing Transportation in Florida

- ◁ **Jim Preusch**, Chief Financial Officer, Alameda Corridor, California
The ACTA-USDOT Loan Experiment
- ◁ **Mike Parker**, Managing Director, Jeffrey A. Parker and Associates
Availability Payments and Other Forms of P3s for Surface Transportation
- ◁ **Scott Polikov**, Principal, Gateway Planning Group, Inc.
The Role of Sustainable Development in Sustaining Transportation
- ◁ **David Levinson**, Associate Professor and RP Braun/CTS Chair of Transportation, University of Minnesota
Value Capture

Session 6: Is There Another Way?

- ◁ **Paul Sorenson**, Operations Researcher, RAND Corporation
Examining Options for Implementing Mileage-Based User Fees



ENHANCING THE ABILITY OF THE STATES TO FINANCE TRANSPORTATION PROJECTS OF NATIONAL AND REGIONAL SIGNIFICANCE: THE EVOLVING ROLE OF THE FEDERAL GOVERNMENT

- ◁ **Geoff Yarema**, Partner, Nossaman LLP

Introduction—Transportation Funding in Crisis

Current funding levels fall far short of meeting the nation's surface transportation infrastructure needs. Short term solutions based on the use of the General Fund undermine the continued existence of the Highway Trust Fund (HTF), which has provided financial stability essential to today's highway and transit systems. Yet, increases in the Federal fuel and related taxes, even if enacted, would not reach a level sufficient to meet the nation's future surface transportation needs.

The report of the Budget Commission looking at the projected national deficit is likely to paint a very dark picture, making the enactment of a major new transportation bill with substantial additional funding even more difficult. This reality places huge pressure on the nation's ability to deliver transportation projects of national and regional significance that are by definition capital intensive and critical to mobility, goods movement and economic growth, a fact the National Surface Transportation Infrastructure Financing Commission (Commission) addressed head-on in its February 2009 report, *Paying Our Way: A New Framework for Transportation Finance*.

In arriving at the means to the desired end, the states and the Federal government each have their role to play. The states are charged with the primary responsibility for planning, delivering and operating the physical infrastructure. The role of the Federal government is: (a) to provide partial funding; (b) to offer financing assistance; (c) to regulate state activity to the extent of a clear and legitimate Federal interest; and (d) to incentivize states and localities to achieve otherwise difficult results.

The following proposals respond to the fact that the Federal government is, in effect, asking the states to do more with less Federal resources—and indeed less predictable resources. They are doing so by offering states greater flexibility in finding innovative ways to pay for transportation, attracting private capital beyond what the public sector can produce, maintaining the user fee approach to transportation funding, and ensuring the long-term quality of the transportation system.

The only legislative proposal for comprehensively reauthorizing the highway and transit programs is the Surface Transportation Authorization Act of 2009 (STAA 2009), now pending before the House Transportation and Infrastructure Committee. For each proposal below, a brief commentary is provided noting how STAA 2009 treats the issue.

Enhance the TIFIA Program

The Transportation Infrastructure Finance and Innovation Act (TIFIA) program, in essence an existing and valuable national infrastructure bank, provides credit assistance from the U.S. Department of Transportation (DOT) for highway, transit, intercity passenger facilities, freight rail, and freight transfer facilities. To help project sponsors assemble capital for projects of national and regional significance in excess of \$50 million, DOT provides long term, patient financial assistance (loans, loan guarantees and letters of credit) to projects that have dedicated revenue sources available for repayment. TIFIA financial assistance is available for only 33 percent of a project's cost, and the applicant must demonstrate that at least two-thirds of eligible project costs will be covered by direct investment, commercial loans, Federal-aid highway or transit grants. Thus, TIFIA loans significantly reduce reliance on Federal grant funds by providing foundational financing that encourages other investors to participate in funding the project. Because the budgetary cost (sometime called the subsidy cost) of TIFIA credit assistance is not its face value, but rather the combined cost of issuing the credit instrument and the risk of non-repayment, the budgetary cost to the Treasury or "score," is typically about 10 percent of the face value of the credit. Thus, TIFIA offers substantial value at a very low cost to the Federal budget.

The potential for TIFIA to further spur non-Federal public and private investment in the U.S. transportation system would be facilitated by several improvements, much of which follows the recommendation of the Commission.

- ◁ Increase the funding cap to reflect current demand. This program leverages limited and Federal dollars by attracting private and non-Federal public capital to infrastructure investments. The current cap of \$122 million, plus additional funds provided by the American Recovery and Reinvestment Act of 2009 ("ARRA") and TIGER 2, is demonstrably insufficient. The funds obligated for TIFIA should rise to meet current and anticipated demands, without requiring borrowers to pay credit subsidy costs. The annual allocation should be increased to \$300 million. Note that the Commission recommended this amount and others have suggested as much as \$500 million.
STAA 2009 would increase the allocation, but has not specified the amount (§1302).
- ◁ Expand TIFIA's utility by allowing: (1) TIFIA funding for up to 50 percent of eligible project costs, (2) TIFIA funding of planning and preliminary design costs at 100 percent of project cost, and (3) the flexibility to fund projects even if senior debt is not "of investment grade." The alternative to a TIFIA loan is typically a grant, which is far more costly to the Treasury. Issues of risk should be reflected in the subsidy cost, and not by excluding TIFIA financing for otherwise worthy projects.
STAA 2009 would make TIFIA loans available for up to 49 percent of eligible project costs, but otherwise makes no additional changes (§1302).
- ◁ Eliminate the "springing lien," which puts Federal debt on a par with senior, commercial debt in case of insolvency. This increases the cost of obtaining commercial debt for borrowers and thus undermines the very purpose of the TIFIA program. Again, the Federal interest is protected in any case by the establishment of the subsidy obligated from TIFIA funds for the loan.
No similar provision in STAA 2009.
- ◁ Eliminate Administration-developed "policies" which effectively impose supplemental requirements on eligible projects. TIFIA is merely an alternative source of financing and should be treated as such. The current Administration seems determined to subject TIFIA projects to an undetermined public benefit review, vague "livability" and "sustainability" requirements, and, indeed, to be favoring its use primarily for transit. These policies are applied only to TIFIA loans and not grant-funded projects. They should not apply to TIFIA loans either.
- ◁ *Although STAA 2009 does not make direct changes to current TIFIA provisions, it creates substantial additional procedural burdens on a decision to use tolls or to develop a project through public-private partnerships. Many TIFIA projects involve one or both of these. The most troublesome provi-*

sions are §1204, which creates the Office of Public Benefit, §1301, relating to tolls, and §1504, dealing with public-private partnerships.

Private Activity Bonds (PABs)

PABs are bonds issued by states and municipalities to finance long-term capital improvements such as docks, wharves, and airline terminals used by a private entity. Interest on these PABs is tax exempt if the project falls within one of 22 Congressionally-approved categories. SAFETEA-LU added qualified highway and freight rail transfer facilities to the list of approved PABs, and provided authority to issue up to \$15 billion in transportation PABs (Highway PABs). The Secretary of Transportation is given authority to allocate this \$15 billion, but these PABs are otherwise subject to rules administered by the Internal Revenue Service. This was the first time highway facilities have been allowed to benefit from PABs, which have been available to the other major modes of transportation, e.g., airports, seaports, and various types of rail for decades. The new Highway PABs have become a very effective financing tool for major projects across the country. The Commission recognized the value of Highway PABs and recommended their extension and other improvements to this program.

- ◁ Lift the cap on Highway PAB funding. For PABs to continue to benefit highway surface transportation projects and the jobs they produce, the \$15 billion cap now limiting the use of PABs should be eliminated. To date, DOT has approved \$6.3 billion in commitments but pending requests will likely soon absorb the remaining PAB ceiling. Eliminating the cap on PABs would provide additional national benefits.
- ◁ Make Highway PABs permanent law. The current Highway PABs program expires once the \$15 billion is used. Given the effectiveness of this program, it should become permanent.
- ◁ Make permanent the exemption for PABs from the Alternative Minimum Tax (AMT). Before enactment of ARRA, the interest income from tax-exempt PABs was included in the AMT base and was taxable for taxpayers whose income was high enough to be subject to the AMT. Interest income from other governmental bonds was not included in the AMT, thus putting PABs at a competitive disadvantage in capital markets. ARRA leveled the playing field by making qualified PABs issued in 2009 and 2010 exempt from the AMT. This provision, expiring at the end of 2010, would need to be extended if the program is to realize its full potential.
- ◁ Allow deferred interest on Highway PABs. New toll roads often do not generate sufficient initial revenue to cover interest payments. Recognizing this, private lenders and the Federal TIFIA credit assistance program allow borrowers to defer interest payments for the first few years of operation by adding the interest to the principal. PAB interest cannot be deferred and added to the principal. PABs should be on equal footing with other credit instruments and reflect how transportation funding actually works. Otherwise, the utility of the PAB program is reduced. *STAA 2009 does not contain provisions related to PABs. These provisions are outside of the jurisdiction of the House Transportation and Infrastructure Committee and will need to be addressed by the Ways and Means Committee.*

Allow States to Leverage their Federal-aid Highway Apportionments

The leveraging mechanism of the TIFIA program has allowed a relatively small amount of funding (\$122 million a year in SAFETEA-LU) to support loans worth billions of dollars for transportation infrastructure projects across the country. States should be able to leverage their Federal-aid highway apportionments in this way to greatly expand the funds available for needed transportation projects at no additional cost to the HTF. More specifically:

- ◁ States would be given *the option* to use their apportionments to borrow from the Federal Highway Trust Fund, instead of simply using their apportionments for grants. These loans would be available for the same types of projects eligible for funding under the apportionment providing the loan.

They would have to be repaid from non-Federal sources, and carry a favorable interest rate comparable to TIFIA loans.

- ◁ By borrowing against their apportionment instead of using the apportionment for grants, states would be able to *leverage the money available for transportation projects about ten-fold*. This is because the amount that would be obligated from the state's apportionment for a loan is only its budgetary (subsidy) cost. For example, if a state wishes to build a project using \$500 million in National Highway System (NHS) funds, it could borrow this money from its NHS apportionment. If the project is backed by a secure funding source (such as tolls), *that \$500 million loan would require an obligation of only \$50 million in NHS funds*. To build the same project today, using the NHS funds as a grant, the state would have to find obligation authority for the entire amount of Federal funds it wishes to use on the project (in this example, \$500 million).
- ◁ Current law should be changed to provide that repayments flow to the HTF. The HTF would be the source of the subsidy, and directing repayments to the HTF would provide another long-range income stream for the Fund. *The repayments (principal and interest) should be credited to the unobligated balance of the state's Federal-aid highway apportionment from which the loan was made*. This will encourage states to be frugal in the projects they select, provide additional Federal-aid highway funding for future projects in the state, and keep the revenues available to the state that generated them. *There is no similar provision in STAA 2009*.

National Transportation Infrastructure Bank (iBank)

There has been considerable discussion of a national infrastructure bank as another source of funds for important projects. This discussion focuses on a bank (iBank) aimed at transportation projects.

- ◁ Legislation authorizing an iBank should: (i) identify dedicated funding sources; (ii) streamline the application/evaluation process for existing programs; (iii) give preference to applications that draw in new financing and/or revenue streams from private and other non-Federal sources; (iv) offer up-front assistance for early planning, feasibility studies, environmental clearance, and other development-stage activities; and (v) provide gap funding for user-fee backed projects.
- ◁ The iBank must not mix transportation projects with other types of public works. If a National Infrastructure Bank is created to support several kinds of public works projects, the different types of projects should be funded separately to avoid an unworkable competition between dissimilar public works activities.
- ◁ There has been a great deal of discussion about how to fund the iBank. Some principles that should guide this discussion are: (i) funds should not come from already stressed dedicated transportation funds, such as the HTF—these funds are designed to flow to the states, and not to be a source for a national discretionary program; (ii) to the extent that projects are funded with credit assistance from the iBank, the cost of credit should be below commercial rates and transactional costs should be kept to a minimum, not reflecting the subsidy costs as some TIFIA credits are requiring today; and (iii) to the extent that the iBank is used as a fund for competitive grants, such as the TIGER I and II programs, decision procedures should be objective, transparent and kept free of earmarking.
- ◁ All of the many funding approaches now under consideration should be explored, and, if appropriate, additional ideas should be proposed. For example, in H.R. 2521, noted below, the National Infrastructure Bank it would create would issue debt securities directly. Up to \$5 billion annually of these securities could be purchased by the Treasury Department, but not exceeding 10 percent of the debt securities issued by the Bank.
- ◁ A TIFIA program, enhanced as proposed in Section I, would offer much of the benefits of the iBank, except for financial assistance falling short of the existing repayment assurances DOT requires, such as grants and “quasi-grants.”

STAA 2009 would not establish a national infrastructure bank. However, Congress has expressed an interest in this concept. Senator Dodd in 2007 introduced a bill (S. 1926 “National Infrastructure Bank

Act of 2007”)¹ and has stated his commitment to pursuing the creation of such an entity. Representative DeLauro has been actively pushing her bill (H.R. 2521, the “National Infrastructure Development Bank Act of 2009”)² as an alternative to the Administration’s proposal (the \$4 billion “National Infrastructure Innovation and Finance Fund”)³. Although President Obama’s FY 2011 Budget included \$4 billion for a National Infrastructure Bank, Congressional Appropriations Committees rejected this item in their deliberations. »



UTILIZING A NEW TAX CREDIT PROGRAM FOR TRANSPORTATION INFRASTRUCTURE

◀ David Seltzer, Principal, Mercator Advisors LLC

With increasing budgetary constraints on grant funding, Congress in recent years has looked to the Federal tax code as a means of stimulating investment in the infrastructure sector. The American Recovery and Reinvestment Act (ARRA) authorized or expanded the authority to issue various forms of tax preferred bonds, subsidizing part or all of an issuer’s interest expense. These programs range from Build America Bonds, unlimited issuance volume with a 35 percent interest subsidy, to “qualified tax credit bonds” that are volume-capped and offer subsidies of 70 percent to 100 percent of interest cost.

Qualified tax credit bonds (QTCBs) are intermediate-to-long-term taxable rate debt securities for designated capital purposes sold by state and local governments or other entities. In lieu of cash interest, bondholders receive a tax credit that can be applied against the investor’s Federal income tax liability. Principal repayment is the issuer’s responsibility, using non-Federal revenue sources.

Earlier this year, Congress authorized issuers of most types of QTCBs to elect to offer them as “direct-pay” bonds, with a refundable tax credit that the issuers could present to the Treasury Department for cash. This feature allows the bonds to be sold to investors as interest-bearing obligations, substantially enhancing their marketability.

Subsidizing the interest cost is an important investment incentive, since it expands the capital-raising capacity of project sponsors. Depending on the term of the bonds and prevailing market conditions, interest cost can represent anywhere from 50 to 80 percent of the financial cost of long-term borrowing. A 100 percent Federal interest subsidy can more than **double** the level of investment supportable by any given revenue source.

QTCBs differ from other Federally-subsidized bonds such as Build America Bonds in several important respects. Build America Bonds (BABs) were designed principally to stabilize the market for general municipal bond issuers, which had been severely disrupted by the credit crisis of 2008. By opening up new categories of investors who don’t purchase tax-exempt securities, BABs have resulted in a modest subsidy (approximately ½ percent) compared to traditional tax-exempt municipal bonds. BABs are not volume-constrained, and may be issued for any general governmental purpose through year-end 2010. (Congress currently is considering extending the BABs program for another year, but with a somewhat lower subsidy rate).

In contrast, QTCBs are designed to stimulate investment and generate jobs in specifically-targeted sectors through a much deeper subsidy. To date, Congress has authorized QTCB programs totaling in excess of \$36 billion for forestry conservation, renewable energy projects, energy conservation, qualified zone academies and new school construction. Unlike BABs, the QTCB issuance volume is legislatively capped for each program. While the interest rate is market-set, the maximum Federal subsidy

1 <http://thomas.loc.gov/cgi-bin/bdquery/z?d110:SN01926:|/bss/110search.html>

2 <http://thomas.loc.gov/cgi-bin/bdquery/z?d111:h.r.02521:>

3 <http://www.dot.gov/budget/2011/budgetestimates/niiff.pdf>

(tax credit rate) is established daily by the U.S. Treasury at a level designed to allow the bonds to be sold at their face (par) amount, without interest cost to the issuer. In addition, in contrast to BABs, the maximum maturity date is prescribed by the Treasury on a monthly basis, so as to result in an effective 50 percent maximum Federal subsidy.

From a Federal policy viewpoint, tax credit bonds have several attractive attributes. Like investment tax credits, they rely on market discipline to attract private capital investment (in this case, debt capital). However, QTCBs can be sold at a much lower yield than equity-based investment tax credits because they are both less risky and more liquid (readily tradable). And although they receive a greater subsidy than tax-exempt municipal bonds, QTCBs are viewed by Federal policymakers as being *more efficient*, since the project sponsor receives 100 percent of the benefit of the Federal subsidy, rather than sharing it with the investor.

Tax credit bonds do not require direct appropriations like grants, but they do entail a fiscal cost to the Government, in the form of “tax expenditures”. The annual tax credits reduce Federal tax receipts in the year they are claimed. But because the budgetary charge for subsidizing a long-term investment is spread over the life of the bonds used to finance that project, the fiscal cost is borne by both current and future beneficiaries. This arguably is more equitable than grants, whose cost is “expensed” in the year of outlay. And under budget scoring rules, QTCBs have a more favorable treatment. Depending on the assumed issuance pattern, a tax credit bond program might be scored at 25-to-35 cents per dollar of bonds issued vs. grants, which are scored at 100 cents on the dollar.

Presently, there is no QTCB program for surface transportation investments. Many observers believe that a program would be warranted—especially for socially desirable investments such as intercity rail and major public transportation programs that confer substantial public benefits like pollution reduction and energy conservation. Given the long-lived nature of transportation investments and their extensive spillover benefits, a strong argument can be made for allowing longer-term bonds, and therefore a higher effective Federal share, perhaps commensurate with the 80 percent Federal match for current highway and transit grants. As noted above, this would allow issuers to support over twice the investment level compared to traditional municipal borrowing. At the same time, a new QTCB program would alleviate pressure on the Highway Trust Fund by accommodating many major projects that otherwise would seek more grant funding.

A key decision point for any new program is how the defined issuance volume cap is to be allocated. Some QTCB programs are entirely formula-distributed based on demographic factors (e.g., school construction). Others are entirely discretionary (clean renewable energy projects, conservation). It may well be that a new QTCB program for surface transportation would combine elements of both: One portion (for large projects with regional or national benefits) could be discretionary based on the project’s societal returns and the level of local effort. The other portion could be formula-allocated to the States, to be designated for smaller projects. The discretionary portion could be selected by the Secretary of Transportation (similar to the current \$15 billion Highway and Intermodal private activity bond program). Or, to the extent Congress decides to establish a National Infrastructure Bank, the Bank could select the projects, with the bonds being sold by state or local entities.

In summary, a QTCB program could be an effective tool to encourage additional investment in the nation’s surface transportation infrastructure, without further consuming limited funding capacity through the Highway Trust Fund. Projects would rely on the market discipline of the investment community as one of the key litmus tests of feasibility. The budgetary cost of the program would be a fraction of that associated with attempting to fund such investments through traditional Federal grants. And the expansion of QTCBs would provide additional investment opportunities for major sources of capital such as life insurance companies, pension funds and endowments which currently do not purchase tax-exempt bonds. 



TOWARDS A NEW FEDERAL ROLE IN INFRASTRUCTURE INVESTMENT: USING U.S. SOVEREIGN WEALTH TO REBUILD AMERICA

◀ **Richard Little**, Director, Keston Institute for Public Finance and Infrastructure Policy and Infrastructure, University of Southern California

As the United States continues to emerge from the economic collapse of 2008, the question of how to address years of chronic underinvestment in infrastructure remains a pressing issue. The American Recovery and Reinvestment Act of 2009 (ARRA) called for the expenditure of \$787 billion in stimulus funds including more than \$100 billion for “shovel ready” infrastructure projects. ARRA, however, was not a comprehensive reinvestment plan for U.S. infrastructure. For the foreseeable future, annual investment in public and quasi-public infrastructure systems of 4 to 6 percent of GDP (\$500–\$700 billion) will probably be necessary. At the same time, no funding source, either dedicated such as the Highway Trust Fund, or general, such as the budget of the United States, is projected to have the capacity to generate funds sufficient for infrastructure investment at these levels. Private capital, broadly deployed through various forms of public-private partnerships (PPP or P3) could address a portion of the shortfall but PPP have been slow to find widespread acceptance and have generated considerable opposition within elements of the U.S. Congress. As a result, the long-term viability of this model is unclear.

At the same time, there is a clear and immediate need for public and institutional pension funds to invest in instruments that can generate stable, low-risk returns over the long-term. Similarly, there have been various proposals to increase the returns on Social Security payroll taxes through the establishment of private investment accounts that would have placed a portion of individual payroll contributions into the equities market. During times of rapidly rising stock market valuations, this appeared to be a sure fire means of addressing projected shortfalls in revenues versus future pay-outs. Although social security privatization never generated substantial political support, it is a fact that returns on social security investments have been several hundred basis points lower than historical returns in the U.S. stock market.

This paper attempts to weave together these multiple strands to begin a dialogue on a conceptual approach that could have the capacity to supply significant additional capital for infrastructure investment while at the same time addressing the retirement needs of all Americans. The core idea of the proposal is to utilize a combination of public and institutional pension funds, individual retirement accounts, and other private investment capital, together with Social Security Trust Funds to provide senior debt to fund projects and programs supported by user fees or other reliable and sustainable revenue streams. For most of the United States, this would require the states to develop new revenue streams, either directly from tolls or some other source such as a dedicated parcel, sales, or other form of tax not subject to re-appropriation. Revenues thus collected would be used to retire national infrastructure bonds and repay (with interest) loans from Social Security trust funds. A National Infrastructure Bank (NIB) could be established to administer such a program. Modeled on other development banks, the NIB would be empowered to invest only in financially sound, revenue-backed projects that met pre-determined funding criteria. The NIB would be managed by an independent board that would hire professional investment counselors and money managers to ensure that all investments met strict funding and performance, and not political, criteria.

Because this paper is intended to stimulate discussion of a new and novel way of raising the massive amounts of capital that will be necessary to recapitalize America’s transportation infrastructure, the many political and legislative issues associated with actually implementing this proposal are not addressed. However, the blurring lines between the roles and responsibilities of the public and private sectors that emerged during the national financial crisis show that a new role for Federal participation in infrastructure investment as both banker and broker may not be as radical as it would have once appeared. Although precise, up-to-date figures are not available, there is on the order of \$15 trillion held in public pension systems, individual retirement accounts and the Social Security Trust Fund.

Investing as little as 10 percent of these funds as described in this paper would unleash almost \$1 trillion for immediate investment in U.S. infrastructure. This would have a major beneficial impact on the transportation network and over time, add hundreds of millions of dollars to combined U.S. retirement accounts. At the same time, it would create jobs and generate growth through personal savings and investment.

By focusing on revenue-backed projects, this proposal also shifts the primary source of infrastructure funding away from the current tax allocation model where everyone pays regardless of usage to a more equitable model where people pay only for their actual use of the system. Our political process needs to be forthright with voters on this matter and let them know that absent a move to revenue-based models or a massive increase in fuel or other taxes, necessary renewal and expansion of the transportation system will be long-delayed, if provided at all.

This proposal will strike some as impossible to consider seriously let alone implement. However, as noted in the most recent Transportation Revenue Commission report, this is a time to seek out and discuss innovative new approaches, not to rely on proven but now obsolete methods from the past.⁴ Continuing to focus on meeting the nation's combined transportation wants and needs from a reauthorization process that can only provide \$35 to \$40 billion annually to the Highway Trust Fund only guarantees that we will never address the real question. That is, what does a 21st Century transportation policy look like, how will we fund it, and who will pay for it? 



LEADERSHIP INITIATIVE FOR TRANSPORTATION SOLVENCY: MULTIPLE OPPORTUNITIES IN PRICING TRANSPORTATION

◀ **Shin-Pei Tsay**, Director, Leadership Initiative for Transportation Solvency,
Carnegie Endowment for International Peace

The Leadership Initiative for Transportation Solvency is an effort to create the political space to finance the Federal transportation program. It makes the case for internalizing costs caused by the existing transportation system while better targeting transportation investments and fully funding transportation programs on a pay-go basis. These costs will be captured by pricing transportation carbon, either through a single source (such as a gas tax or sales tax on transportation fuels) or by a combination of strategies such as removal of oil and gas subsidies and a suite of upstream and downstream pricing schemes. Pricing schemes that have the net result of reducing transportation carbon, such as emission-based tolling or congestion pricing, will also be considered.

The Initiative is directed by a three-person leadership team: former Senator Bill Bradley, former Homeland Security Secretary Tom Ridge, and former U.S. Comptroller General Dave Walker. Bi-partisan leadership is critical to create political space to achieve reform of the Federal transportation. As a deficit reduction strategy, the first phase of the project targets President Obama's Fiscal Responsibility Commission, which is expected to release recommendations to reduce the national deficit on December 1, 2010. The second phase of this project will be dedicated to influencing the next transportation reauthorization.

It is well understood that the highway trust fund does not have enough to fund the transportation program, but what is not as well known is that the Federal transportation program currently contributes around \$90 billion annually to our national deficit. In the last two years, Congress has transferred \$34.5 billion from the general fund to the highway trust fund. In addition, other direct appropriations have funded a variety of other surface transportation programs outside of the Highway Trust Fund, from Amtrak, stimulus programs, earmarks, and tax expenditures for free parking and commuter choice programs. Total general fund expenditures for surface transportation now amount to \$25–\$35 billion

⁴ Revenue Study Commission. (2007, December). Transportation for Tomorrow. Report of the National Surface Transportation policy and Revenue Study Commission. Retrieved December 7, 2009, from http://www.transportationfortomorrow.org/final_report/

annually, depending on how ARRA funds are accounted. Deferred maintenance for highways and transit add an estimated \$57 billion (USDOT Conditions and Performance Report) to \$118 billion (National Surface Transportation Policy and Revenue Study Commission) to the annual deficit. While the Federal government does not own and manage transit and highway facilities, it funds road reconstruction, so deferred maintenance counts as a Federal expenditure.

Outside of OPEC and Russia, every other country in the world prices use of the transportation system so that revenue not only funds the country's entire transportation system itself, but it also funds additional programs such as education and health care. A survey conducted by the World Bank in 2007 showed that in Europe the average fuel tax collection across the 26 countries is 142 percent of a single country's average total road expenditures.⁵ Germany's average highway users revenue is the third largest source of government revenue and is 2.6 times greater than its surface transportation spending.⁶ Canada collected \$11.7 billion in gas tax revenues in 2008; its national transportation system cost \$4.1 billion for the same year.⁷ There are also examples closer to home. The Texas State Constitution commits 25 percent of its state gas tax revenue to its state education program.⁸

Reforming transportation finance has enormous potential to contribute to climate mitigation. Surface transportation is 95 percent reliant on petroleum and represents 70 percent of the country's oil consumption.⁹ The country's transportation system is responsible for 30 percent of all carbon emissions in the United States. Of that 30 percent, 86 percent of transportation carbon emissions are attributed to the surface transportation system. Recent published research from NASA Goddard Space Center and a literature review by the Carnegie Endowment found that the surface transportation sector emits more net radiative forcing carbon in the near-term (20 year outlook) compared to any other sector in our economy, including power generation. Radiative forcing is the chemical process that warms the planet's atmosphere and is recognized as the main cause of climate change. This does not negate the necessity to also restructure power generation infrastructure, which is shown to have the most net radiative forcing effect in the long-term (100 year outlook). But what this significant finding does is answer questions in the climate change debate over where the United States should dedicate its resources to address climate change, in which timeframe should it design its policies, and what steps should be taken to curb carbon. In conclusion: in the short-term, road-based transportation should be the center of attention for reducing carbon emissions.

The insolvency of the U.S. transportation program is an opportunity to examine revenue sources for transportation that are linked to reducing carbon emissions. There is no single solution. The project will examine the range of potential strategies and assess its economic and distributional impacts as well as their political salience.

Because transportation is dependent on petroleum, the project will look at upstream (referring to exploration and production) and downstream (including selling and distribution, including at the gas pump) opportunities in the petroleum industry. Some early research shows that the oil and gas industries currently receive disproportionately high subsidies. The marginal tax rate for income derived from investments in gas and oil structures is 9.2 percent, while the average tax rate for such income in all

5 Cesar Queiroz, Barbara Rdzanowska, Robert Garbarczyk, and Michel Audige, "Road User Charges: Current Practice and Perspectives in Central and Eastern Europe," Transport Paper 23, World Bank Group, November 2008

6 "Making Transport Sustainable: Insights from Germany" Brookings Institution Metropolitan Policy Program, April 2009

7 "Transportation in Canada 2008: An Overview," Minister of Public Works and Government Services, Government of Canada, 2008

8 Peggy Fikac, "Proposal Gives Voters a Say on Gas-Tax Increase," Houston Chronicle, 30 August 2010

9 "Annual Energy Review," Energy Information Administration (EIA), 2009

industrial sectors is 26.3 percent.¹⁰ The overall U.S. tax rate for oil and gas industries is 13.3 percent, the sixth lowest among 20 industries according to a 2004 Institute on Taxation and Economic Policy.¹¹

Downstream, the gas tax paradox continues: it is the best, and most politically toxic, strategy to raise revenues in the short term. Economists across the board agree that pricing carbon is necessary, though not necessarily sufficient, to reduce carbon emissions from all sources. They also agree that the gas tax is the most transparent and direct form of carbon pricing available. The report examines the viability of a percentage sales tax versus a flat gas tax increase.

Another revenue generation option is to open the Interstate highway to tolling programs. Possibilities within this include pricing by weight. USDOT's Highway Cost Allocation report shows that the heaviest tractor-trailer combination trucks, weighing over 100,000 pounds, pay only 50 percent of their road costs.¹² Opening up road systems for tolling options also makes it possible to ease in congestion pricing and a more sustainable revenue generation strategy, VMT fees.

In addition to revenue generation strategies, there are opportunities to reduce the transportation program's impact on the national deficit, which would reap overall economic benefits through a bigger GDP, higher tax revenues, and lower future costs for social services. One major burden on the national deficit is deferred maintenance. According to the Sacramento Metropolitan Transportation Plan, the average life-cycle cost of an under-maintained road is \$3,640,000, which is 26 percent higher than a properly maintained road.¹³ This cost is borne by the users as well—the average urban motorist pays an additional \$400 per year due to badly maintained roads.¹⁴

In addition, there is a growing body of research that demonstrates that the current structure of the transportation program has induced sprawl, which in turn has eroded economic benefits and added to costs, adding to the nation's deficit.

On balance, the U.S. transportation program has tremendous potential to be fiscally, environmentally, and economically solvent. In order to achieve this triumvirate of national priorities, revenue strategies to fund and restructure the transportation program should incorporate transportation's close ties with U.S. energy policy and its role in global climate change. Making these connections transparent to all the users and providers of the system will not only reform the U.S. transportation system in the long-term, but also achieve numerous short-term economic and environmental goals. **▶**



TOWARD A NEW MODEL FOR TRANSPORTATION FINANCE

◀ **Bob Yaro**, President, Regional Plan Association

The current model of transportation finance in the United States is broke. SAFETEA-LU, the long-term authorization for Federal funding of surface transportation, expired one year ago, and the transportation trust fund has essentially run out of money. Continuing resolutions and limited stimulus funding for transportation projects since then have been financed out of the general fund at a time when the Federal government is borrowing more than a trillion dollars a year. We are essentially borrowing money from our children in the long run—and from the Chinese in the short-run—to meet today's transportation needs.

Nearly everyone agrees that we are not even maintaining existing roads, rails and runways at a state of good repair, much less making the bold investments in these systems needed if America is going

10 "Statement of Alan B. Krueger," Press Room, U.S. Department of the Treasury, 10 September 2009

11 "Corporate Income Taxes in the Bush Years," Institute on Taxation and Economic Policy, September 2004

12 "Why is the HVUT Important?," Federal Highway Administration (FHWA)

13 Road Maintenance," Issue Brief, Sacramento Region Metropolitan Transportation Plan, October 2006.

14 Ibid.

to compete globally in the first half of the 21st century. At the same time, virtually all of our major competitors in Asia and Europe and in developing countries around the world are making these investments.

All of our major economic competitors have adopted large gasoline taxes, highway tolls and other user fees to finance infrastructure investments. Europe has supplemented these with carbon taxes that are helping to make huge investments in high-speed, regional and metro rail systems and in bridges, tunnels and other transportation facilities. The Federal gas tax was last raised in 1993 to 18.4 cents per gallon. In addition, the average state gasoline tax is 45.6 cents per gallon. The gas tax in the United States remains a tiny fraction of fuel taxes in most other developed countries.

At the heart of this challenge is the reality that the American people simply do not support increasing the gasoline tax and other user fees, or see this issue as a priority when compared with the many other fiscal and economic challenges facing the country. Countless reports and commissions have underscored the growing need for these investments, punctuated by an occasional bridge collapse, to no avail. Meanwhile, the leadership from both parties in the Congress has ducked this issue. The Obama Administration has also not made this a priority until recently, when it announced its support for creating a National Infrastructure Bank, and “front-loading” \$50 billion for “roads, rails and runways” in a new multi-year transportation authorization. The Administration has not specified how it intends to capitalize an infrastructure bank, however, leaving this detail to the Congress. Which brings us back to square one: a transportation finance system that is broke.

So, how could the Federal transportation trust fund be reconstituted to meet the nation's current and future transportation needs? Can Federal transportation funds be redirected in a way that incentivizes state and local investments? This will be difficult to achieve at a time when states and cities across the country also face rising deficits. But here are some thoughts on ways that this goal could be achieved.

- ◁ **Create a bold vision** for the future of the transportation system, similar to the vision for the Interstate Highway System that built public and political support for creation of the Highway Trust Fund in the first place. This new vision could be built around targeted investments in high-speed rail, supporting transit investments and relieving highway bottlenecks and extremely congested links in the Interstate system. Clearly the public has not been inspired by bold visions from the transportation reform community built around “performance-based, outcome-driven” project selection. We've got to create a more inspiring vision which has the potential to improve people's lives and livelihoods.
- ◁ **Shift all Federal funds currently directed to earmarks to competitive, discretionary programs**, similar to TIGER grants or the U.S. Department of Education's “Race to the Top” program. This would clearly not be popular in the Congress, but it could eliminate some of the most wasteful and poorly targeted spending.
- ◁ **Reduce “red tape”** associated with Federal transportation grants, estimated to add years of delay and perhaps one-third or more to the cost of projects.
- ◁ **Level the Federal matching share for new capacity projects to 40-50 percent across modes**, to weed out poorly performing projects.
- ◁ **Create Federal programs that reward and incentivize local and regional revenues for transportation programs:** In dozens of cities and regions across the country, the public has supported new user fees directed towards local transportation priorities. Voters in many cities have passed referenda creating local or regional taxes and user fees for these projects. Incentive-based Federal grants can help leverage local funds and help build public support for these investments.
- ◁ **Levy and target user fees to support transportation capital programs.** Tolls or congestion fees can be used to build or maintain highways, or be used to cross-subsidize transit investments. Airports and seaports can use landing fees, departure taxes or container fees to finance the capital

needs. Transit is always tougher to finance, since these systems can seldom recover their initial capital investments.

- ◀ **Share transportation costs among those who benefit.** Broad-based income, sales or payroll tax revenues can also be used to build and operate transit systems or other investments. New York, for example has adopted a .002 percent Payroll Mobility Tax, a regional payroll tax to provide \$2 billion annually for the capital and operating needs of its Metropolitan Transportation Authority.
- ◀ **Use value capture to finance new transit and rail projects.** Various kinds of value recapture systems can be used to finance transit investments. Tax Increment Financing (TIF) districts, for example can pay for transit improvements, using projected increases in property tax revenues around station areas to finance these investments. Regional Plan Association has developed a regression model to estimate the increase in property values associated with transportation investments. New Jersey's ARC commuter rail tunnel to New York, for example, would add \$18 billion to home values around stations served by this facility, and double the number of households with commuter rail access to Manhattan.¹⁵

None of this will succeed, however, unless we can convince the American people that America's global competitiveness and their own economic wellbeing depends on making these investments. They also need to be convinced that Federal, state and local funds will be highly targeted and well spent. And they will need to feel that these investments will provide real benefits to their own region, community, and household measured in terms of reduced congestion and travel times, increased convenience, and better access to jobs and services. ▶



INVESTING IN TRANSPORTATION

- ◀ **David Thornburgh**, Executive Director, Fels Institute of Government, University of Pennsylvania

Sometimes I wonder why we need to keep proving to ourselves that investing in transportation makes economic sense and helps spur economic growth. In fact, investing in transportation has always been about investing in economic development, productivity, and connecting people and businesses to opportunities.

The Erie Canal? Opening up western goods to eastern markets. The transcontinental railroad? Same thing. The Interstate Highway system? While motivated by the mushroom cloud, it still has had an enormous impact on connecting products to market and, by making Americans more mobile, connecting them to unprecedented economic opportunity.

My own neighborhood in Philadelphia was built in the 1860s by speculative developers who understood the economic value of the new Reading Railroad that could whisk commuters from the leafy green suburb-in-the-city to downtown Philadelphia in under a half hour. Transit-oriented development, 19th century style (and one reason why today I can walk a block to hop the commuter train, connect with Amtrak at 30th Street Station and go from my kitchen table to my seat at this table in 2.5 hours, working all the while).

Here is another simple observation. Look at real estate listings if you need to be convinced that transportation investments have economic value. Ever seen a listing that said "walk to Metro" or "EZ access to turnpike" or "minutes to airport"? Why would the listing include those phrases if those transportation improvements didn't add to the value of the property?

If expert research contradicted this kind of common sense we would have to be worried. But it doesn't. Time and again after the smoke settles on the latest econometric analysis (analysis that only high

¹⁵ Regional Plan Association (2010). "The Arc Effect: How Better Transit Boosts Home Values and Local Economies." <http://www.rpa.org/pdf/RPA-The-ARC-Effect.pdf>

priests of the profession can understand and interpret) we see, in fact, that transportation pays off. You've heard that today and you'll hear it again.

I am not a transportation expert, though in a previous professional life I'll admit to having ventured into the thicket of transportation economics on projects close to my home in Philadelphia, like the I-95/PA Turnpike interchange (the biggest missing link in the Interstate Highway System) or the long-debated light rail proposal in the Schuylkill Valley corridor west of Philadelphia. Each foray reminds me, though, how important it is to make transportation policy and financing discussions about something other than *just* transportation. As someone who has spent most of his career thinking and doing something about regional competitiveness and regional growth issues, I'm firmly convinced that transportation has to be viewed as a means to that end. As I said, it's not a difficult conceptual point to make. An easier, better way to get from here to there makes both here and there more valuable. Faster, more efficient ways to get goods to market, or people to their work, lowers cost and increases productivity. You can do a lot of business in your car (not legally, of course, in many states) but you can do a lot more when you're actually in an office, or meeting with a client.

But transportation discussions are too important to leave to transportation experts. Unless we can bring today's discussions down to earth—to include, at a regional level, entrepreneurs and corporate CEOs and cultural leaders and labor leaders and soccer moms and hockey dads this discussion will continue to play like the transportation version of that classic movie *Groundhog Day*, where the same day repeats itself over and over and over and over again.

Two colleagues of mine at Penn, Richard Shell and Mario Moussa, have recently written a great book called the *Art of Woo: Using Strategic Persuasion to Sell Your Ideas*. One of their central points is that we all have different styles of persuasion, which can be delivered through several different channels to the intended audience. The problem comes when a message developed in one style is relayed over a channel that the listener isn't tuned to, that he or she literally doesn't get. Think of a mathematician explaining the theory of relativity to an artist by whipping out the formulas, charts and graphs. It's only when the message and channel connect with the audience, the authors suggest, that persuasion takes place.

There's a lesson for the transportation discussion we're having here, I'm convinced. We need to use the basic economic message of connectivity, mobility, and productivity, at a regional scale, delivered by the right messengers over the right channels, to the right audience. Only then will be able to tap the will—that I think is out there—to make the big investments we are discussing here today.

I would suggest we begin by looking at what's worked (what the author Chip Heath in his new book refers to as the "bright spots" approach to problem solving). In 2006 and 2007 I served as CEO of the Alliance for Regional Stewardship, a coalition of regional leadership organizations dedicated to building globally competitive sustainable regions in this country. (Bob Yaro was one of our Board members). In that tenure I had the chance to learn from and work with regional leaders from Silicon Valley to Austin to Milwaukee to my hometown of Pittsburgh. The ones who were successful in getting things done (the FasTracks project in Denver, light rail initiatives in Phoenix, Austin and Salt Lake City, regional cultural funds in Pittsburgh, Charlotte, and St. Louis, open space bond funding in Greater Philadelphia) saw these efforts as coordinated civic campaigns. These campaigns brought coalitions together—sometimes, I have to say, odd bedfellows—around a particular actionable, often audacious goal. They usually drew their leadership from respected long-time leaders in their community, men and women who were known, respected and trusted to "do the right thing" in the interest of the greater community. They stuck with it, did their homework, and persisted in the face of long odds. These campaigns can take time. It took 24 years from idea to reality for Philadelphia to build its world class convention center; and almost 50 years for voters of Louisville and Jefferson County, Kentucky to agree to consolidate their governments in the interest of regional efficiency and economic development.

In the transportation area, the FasTracks effort in Denver stands out—a voter-approved, \$4.7 billion, 12-year program to expand rail and bus service throughout the Regional Transportation District. Scheduled for completion in 2017, the RTD FasTracks program will add 119 miles of light rail and commuter rail by creating six new transit corridors and extending three existing corridors, add 21,000 new parking spaces, and expand bus service across the RTD District. My predecessor at ARS, John Parr, was deeply involved in organizing and executing the civic campaign necessary to make that happen. (Sadly, John and his wife and child were killed in a tragic car accident in December 2007). The campaign for FasTrack was built brick by brick with a shrewd blend of messengers, messengers and coalition-building that ultimately led to its approved by the voters in 2004. The goodwill endures, as evidenced by the FasTracks 2009 public opinion poll that reported that 83 percent of metro-area residents say that approving FasTracks funding in 2004 was a good decision.

I was struck by Denver Mayor John Hickenlooper’s comments at the time the FasTracks referendum passed. FasTracks he said “helps people have a shorter [commute] time so they spend more time with their families” and “It helps focus development in certain areas so that we keep more open space.” Hickenlooper, in his folksy brewpub owner style, was talking to people in terms they understood and cared about. He was interpreting the importance of this big transportation project through the lens of important values embraced by his constituents.

In closing, I’d simply suggest the semi-obvious truth that as we think creatively and deeply about the way we fund and finance transportation investments for the future we’ll get little traction unless we pay even more attention to tapping the will, the popular and political will necessary to get where we’re going. We have to assume the will is there, at least until proven otherwise. So our job is to unleash that will with the right message delivered by the right messengers over the right channels. Now, as we struggle to leave the Great Recession behind us, we have a powerful message to tell, in simple terms, about the economic value of transportation investments. But only with a well-crafted plan for persuasion, that learn from the bright spots around the country, can we find a way to get done what needs to be done. ▶



INNOVATIONS THAT WORK: FUNDING AND FINANCING TRANSPORTATION IN FLORIDA

◀ **Lowell Clary**, P3 Development Company; Former Assistant Secretary for Finance and Administration, Florida DOT

Background

The Federal Highway Trust Fund has been unable to support a continued level of funding for highway and transit since 2007. Congress has added general funds to supplement the funding for highway and transit since that time in growing amounts over time.

Almost all states and local governments have experienced budget shortfalls since 2008 and these are forecasted to continue for at least two or more years. In Florida the transportation program peaked at over \$7.5 billion in 2007 and has since dropped to just over \$5.7 billion in 2010. The estimates for future gas tax collections in Florida have dropped at every forecast update except one since 2006, with an overall reduction in the expected collections dropping about 18 percent from the 2006 forecast to the latest forecast in 2010.

At the same time local governments in Florida have faced dropping property taxes, gas taxes, and sales taxes, creating a major struggle to meet annual operating needs. This has created problems in funding infrastructure projects.

The factors are no doubt the result of the current economic conditions in the nation and specifically in the State of Florida where unemployment continues at approximately 11 percent.

To add insult to injury, the State of Florida has grown dramatically over the past 50 years from a population of 4.9 million in 1960 to 9.7 million in 1980 to 16 million in 2000 to over 19 million in 2010. Transportation facilities in Florida have been overwhelmed during this time period. As a result, every possible option to improve transportation facilities has been considered, and where feasible, implemented to add capacity to the transportation system.

Unmet needs have been a common theme in Florida when it comes to the transportation system. You can check web sites at the state and local levels and it is a recurring item.¹⁶

Innovations that Work

A series of options have been identified, developed and implemented in the State of Florida to help address pressing transportation needs. Some key options include:

Indexing the State Motor Fuel Tax. The State of Florida has indexed two statewide motor fuel taxes to the annual general Consumer Price Index. This has been in effect with some modifications since the early 1990s.

Tolling. A total of 765 centerline miles of expressways in Florida are supported by toll revenues. This forms almost 19 percent of Florida's roadway portion of the Strategic Intermodal System. Toll revenues in 2009 totaled \$1.05 billion, or the same as 11 cents of state gasoline tax in the State of Florida.¹⁷

Local Option Taxes. In the 1990s a series of optional local tax sources were provided to the 67 Florida counties to help address much needed transportation improvements. Every county in the State took advantage of these sources.

- ◁ *Local Option Motor Fuel Tax*—These taxes generated over \$750 million for transportation in Fiscal Year 2009–10.¹⁸
- ◁ *Local Option Sales Tax*—The taxes associated fully or in part with transportation totaled over \$800 million in Fiscal Year 2009–10.¹⁹

95 Express. The State of Florida converted a section of I-95 in Miami-Dade County from 5 lanes to 6 lanes, and making the new lane plus the prior High Occupancy Vehicle lane into High Occupancy Tolloed lanes. This was all done within the existing roadway footprint. This project has been well received and Southeast Florida is planning and implementing a series of Express Lanes to create a network in the highly populated area of Southeast Florida.

State Infrastructure Bank (SIB). The State of Florida has a very active SIB that has loaned over \$323 million supporting a total \$1.08 billion in projects from the Federal SIB account and over \$761 million supporting a total of over \$7.2 billion in projects from the State SIB account. The Florida SIB is the only transportation infrastructure bank in the nation to issue bonds backed by the loan portfolio to create funds to make additional loans.²⁰

Development Districts and Tax Increment Financing. Well over 200 development districts exist in Florida as well as many examples of tax increment financing. A portion of the proceeds have been spent or pledged to transportation improvements. It should be noted these type structures have struggled since the economic slowdown in 2008.

16 State of Florida DOT. (2009) "Current and Future Heavily Congested Corridors." http://www.dot.state.fl.us/planning/systems/fhrs/pdf/HeavilyCongestedCorridor_2010_4-8.pdf

17 Florida DOT, "How State Departments of Transportation can Partner with Toll Agencies to Build Toll Facilities." www.dot.state.fl.us/financialplanning/finance/tfrtf/FDOT_percent20Assisted_percent20Toll_percent20Facilities.pdf

18 "Florida's Transportation Tax Sources: A Primer" www.dot.state.fl.us/financialplanning/revenue/taxprimer/201001/Tax_percent20Primer_percent202010_percent20JAN_percent20.pdf

19 Florida Legislative Committee on Intergovernmental Relations. (2009) Issue Brief: Utilization of Local Option Sales Tax by Florida Counties in FY 2009-10. www.floridalcir.gov/UserContent/docs/File/reports/localoptsales09.pdf

20 Florida DOT, "State Infrastructure Bank Federal Funded Projects." www.dot.state.fl.us/financialplanning/finance/sib/SIB_Project_List.pdf

Public-Private Partnerships. Florida has implemented a number of P3s with some examples including:

- ◁ *Miami Intermodal Center* that merged funding sources from Federal, state, local, toll revenues, airlines, car rental users, and joint development together to deliver a new Intermodal Center in Miami that totals over \$1.6B and merges the mode of air, car (personal and rental), bus, commuter rail, Metrorail, and in the future high speed rail into one intermodal center. This utilized two TIFIA loans, the SIB, and other creative financing solutions.²¹
- ◁ *I-ROX.* One of the first uses of Design-Build-Finance (DBF) merged a series of improvements into one project that advances the delivery of these improvements by over 5 years and totaled over \$450 million.²² There has been a series of DBF projects since this project that total over \$2 billion of improvements.
- ◁ *Port of Miami Tunnel and I-595 Improvements.* These two projects were the first to utilize the availability payment approach in the United States. The availability payment approach typically combines payments during construction or at completion of construction; annual payments are then based on the “availability of the facility” to the public according to established operating standards. These two projects total over \$2 billion of improvements.²³

What do States and Locals Need from Congress?

Everyone under the sun has agreed that the big picture is the funding issue. My suggestions are that all options should be put on the table as the needs in one local area are very different than another area in the same state and this varies greatly from state to state. It is critical that all options are on the table. Some examples include:

- ◁ Tolling;
- ◁ Express/HOT lanes;
- ◁ Flexible procurement approaches like design-build-finance and P3s;
- ◁ Flexibility in combining different funding sources such as highways, transit, rail, etc.; and
- ◁ Focusing Federal program on strategic needs. **▶**



THE ACTA–USDOT LOAN EXPERIMENT

◁ **Jim Preusch**, Chief Financial Officer, Alameda Corridor, California

The Alameda Corridor is a 20-mile long multi-track rail cargo expressway, joining the Ports of Long Beach and Los Angeles to the main lines of the Union Pacific and Burlington Northern Santa Fe transcontinental rail network in downtown Los Angeles. Completed on time and under budget in 2002 at a cost of \$2.4 billion, the corridor eliminated at grade conflicts at more than 200 grade crossings, improved train speed, and provided many safety and environmental benefits.

Project financing involved contributions of about \$394 million from the Ports, a taxable and tax-exempt bond offering in 1999 totaling about \$1,170 million, Los Angeles Metropolitan Transportation Authority grant money of about \$347 million, a U.S. DOT loan of \$400 million, construction period interest earnings of about \$90 million, and \$27 million from several smaller sources. Key features of the USDOT loan were its scheduled, but flexible amortization and fixed rate (6.79 percent). The loan became the basis for the USDOT TIFIA program.

In 2004, the Alameda Corridor Transportation Authority (ACTA) refunded the USDOT loan with the proceeds of a subordinate taxable and tax-exempt financing. \$686 million in bond proceeds repaid \$573 million to the USDOT (\$400 million in principal and \$173 million of accrued interest), funded \$45

21 See: www.micdot.com

22 See: www.irox75.com

23 See: www.portofmiamitunnel.com and www.i-595.com

million for the cost of issuance, and created a \$69 million debt service reserve. While the interest rate was lower than the USDOT loan, the 2004 bonds provided far less flexibility going forward. Following strong historical cargo volume trends, the annual debt service payment schedule was also accelerated.

With the downturn in 2008 and 2009, Port cargo volume and ACTA revenue declined somewhat. While the TEU volume through the Ports is now growing again, and ACTA revenue is returning to healthier levels, the scheduled increases in ACTA's debt service will require some level of support over the next several years while the economy strengthens. Money advanced by the Ports for that purpose triggers a 5 percent increase in the ACTA fee and diverts funding from other much-needed projects resulting in the loss of thousands of construction and other jobs. A better option involves restructuring of ACTA's debt. The result—ACTA applied for a Federal Rail Administration Railroad Rehabilitation and Improvement Financing (RRIF) loan.

A RRIF loan may be used to acquire, improve, or rehabilitate intermodal or rail freight or passenger equipment or facilities, including track, components of track, bridges, yards, buildings, and shops. It may also be used to refinance outstanding debt incurred for these purposes. When evaluating RRIF applications, the FRA will give priority consideration to projects that enhance public safety, enhance the environment, promote economic development, and make U.S. businesses more competitive in international markets. The interest rate on RRIF loans is set at closing to the rate on Treasury securities of a similar term. ACTA meets the RRIF loan purposes and priority consideration criteria. In short, RRIF appears to be a viable, attractive option for ACTA. Further, the RRIF program may be a funding option for other rail or rail related transportation projects and agencies around the country.

The Ports of Long Beach and Los Angeles handle 40 percent of the nation's waterborne trade and 60 percent of Asian imports. Thirty-five percent of that cargo uses the Alameda Corridor. In 2008, container trade through the Ports was \$287 billion and generated 3.3 million jobs nationwide. Forty-four percent of the trade and 42 percent of the employment occurs in states on or east of the Mississippi River. A RRIF loan to ACTA would be beneficial to the country for maintaining cargo volume, protecting trade and employment, and avoiding an ACTA fee increase.

ACTA has applied for a \$553 million RRIF loan in order to restructure about a third of its debt. The intent of the restructuring is to reduce debt service during the next 10 years and move some debt service payments out to future years. The RRIF loan would eliminate the need for the Ports to advance money to ACTA for debt service. The restructuring would involve portions of the 1999 A and D, and 2004 A and B bonds. The structure proposed in the application includes refunding of two larger maturities which improves the economics of the transaction. While there are other financing options, and while not refunding these two maturities would reduce the loan proposal amount by almost half, doing so would raise the cost of the transaction and result in a less advantageous overall restructuring.

The FRA RRIF loan program appears to be very promising and we are encouraged by the opportunity the program offers. There are a few technical concerns with the program, and some enhancements would make the RRIF program more workable for borrowers. First, review and processing of our application has been time consuming. ACTA submitted its comprehensive application on March 2, 2010.

Second, the RRIF program requires the applicant to pay a credit risk premium. While the concept is reasonable, the model FRA has used for loan scoring and to determine the credit risk premium appears to favor applications that offer property and equipment as loan collateral. Most public agencies, including ACTA, are precluded by law from mortgaging property and/or equipment. Adjusting the FRA scoring model to account for structural differences between public agencies and private companies such as a regional railroad (which are able to mortgage property) would likely make scoring and the credit risk premium more accurately reflective of the risk involved in each loan.

Subordination of the RRIF loan is also important to ACTA. It is our understanding that both policy and regulations permit a subordinated RRIF loan. It is not clear that RRIF has completed and closed a subordinated RRIF loan before. This is another area of opportunity for RRIF program development.

The FRA RRIF program has money to loan. The FRA staff has been helpful and resourceful in promoting ACTA's application. We are excited about the opportunity and the potential to restructure its debt with a RRIF loan. Other transportation agencies and entities may also find RRIF to be a practical and cost effective source of project funding. »

AVAILABILITY PAYMENTS AND OTHER FORMS OF P3S FOR SURFACE TRANSPORTATION

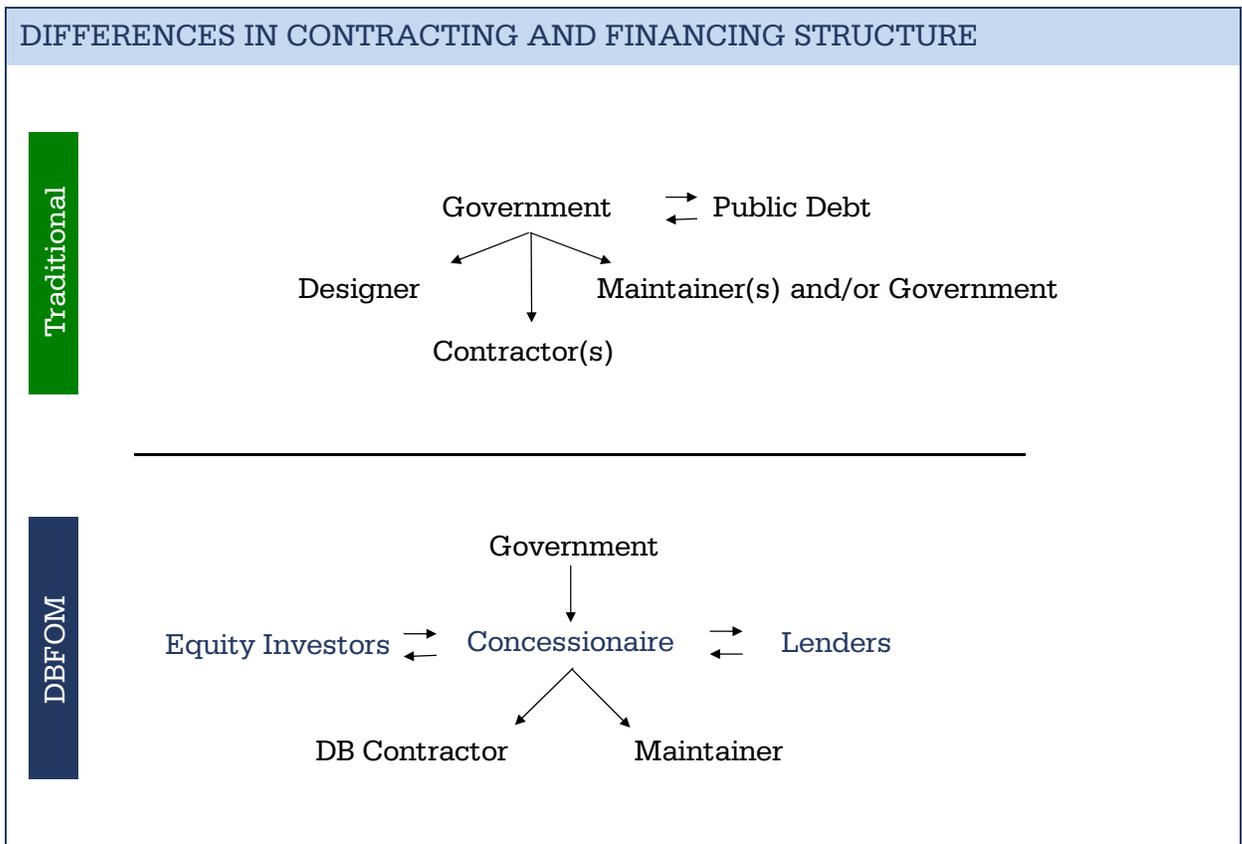
◀ Mike Parker, Managing Director, Jeffrey A. Parker and Associates

Introduction

There is no “one size fits all” solution to America’s surface transportation financing and project delivery needs. In this time of constrained and volatile markets, the tool kit for financing surface transportation should be diverse and flexible enough to allow states and localities to use the most efficient and appropriate forms of contracting for each given project.

Ongoing experimentation at the state level and lessons learned from abroad are leading to approaches that address many of the concerns raised by early public-private partnerships (“P3s”) transactions. For the right projects, P3s can provide the public sector with greater flexibility and efficiency in building, financing and managing infrastructure assets—provided that P3 contract structures and procurement processes are properly designed to ensure these goals are achieved.

Figure A1. Differences in Contracting and Financing Structure



Many public entities view P3 as a desirable option for transferring risk, gaining cost certainty for initial construction and over the project life cycle, matching cash outlays to available revenues, and assuring

high service quality. Achieving on-time, on-budget delivery and targeted performance and state-of-good repair levels for major infrastructure projects could also increase public confidence and long-term support for transportation funding.

Recent P3s in the United States already have yielded increased competition (particularly for technically challenging projects and those too large for conventional surety bonding), substantial financing, upgraded technology, thousands of jobs and the promise of higher service standards—all while meeting Federal mandates regarding labor practices, Buy America, civil rights and other social equity goals.

The term P3 is used here to refer to the implementation of projects using private capital that is directly at-risk for the cost, development and long-term performance of the project through a turn-key design-build-finance-operate-maintain contract (DBFOM). Current P3 practices build on international experience as well as earlier domestic successes with alternative project delivery and innovative finance, such as: Denver's T-REX and Utah's I-15 design-build projects; New Jersey's Hudson-Bergen light rail system and Minneapolis' Hiawatha Light Rail; the Miami International Airport's Intermodal Center; and Seattle's Union Station among many others.

Availability Payment-based P3s

While a number of recent domestic P3 transactions involve toll roads, the transfer of demand/revenue risk to a private concessionaire is not inherent to a P3. Many P3s involve projects that generate no revenues from users or inadequate revenues to cover their full cost of construction and ongoing operation. For example, in the I-595 Corridor Improvements and Express Lanes Project in South Florida, the facility will generate user fees, but those fees are not part of the P3 arrangement (the "concession"). Instead, Florida will set and retain all tolls, and will pay the private partner (the "concessionaire") an availability payment. The Port of Miami Tunnel, Presidio Parkway and Denver RTD Eagle P3s all also involve availability payments to some extent.

The availability payment model is appropriate for projects that do not involve user fees or are not feasible or not advisable to procure via a user-fee based concession for reasons related to policy, cost of capital, public perception, alignment of incentives and/or profitability.

In addition to highway facilities and transit systems, availability payment P3s can be used for self-contained components of larger systems (e.g. rolling stock, vertical circulation systems, or fare collection systems). In the United Kingdom, Canada, Scandinavia and Australia, among other countries, well over 500 projects have been initiated using availability payment frameworks, including P3s for roads, mass transit and street lighting, as well as school buildings, hospital buildings,²⁴ courthouses, water and other infrastructure.

P3s don't necessarily increase the participation of the private sector in design, construction, maintenance, or even financing—these activities are often already performed by private firms and investors. Rather P3s assign most of the responsibility and risks for integrating these diverse activities to a unified entity (see Figure A1) under a single contract focused on long-term performance.

This encourages otherwise unrelated private parties to work together more closely and places the project's financiers at risk for long-term results. Lenders and equity investors finance the construction of projects with availability payment revenue streams solely based on the expectation of earning the future payments. This aligns their incentives with the public sector performance goals for the facility—poor performance reduces the payment stream and places their expected returns at risk. For example, since payments begin when the construction phase is completed, a delay could reduce the number of availability payments received over the course of the concession period. Similarly, investors closely monitor performance during operations in order to avoid reductions in the availability payment for failures to adhere to agreed service levels.

²⁴ Under these international availability payment frameworks, the schools or hospital buildings are procured as P3s, while the teaching and medical services are provided by public servants.

The availability of a facility is generally defined in several ways. “Pure availability” requires the asset, or a section of the asset, to be open, functioning and unobstructed, permitting full use by the public. Measures of “constructive availability” go further, evaluating the extent to which the asset, or a section of the asset, is meeting key performance indicators including safety and quality criteria specified in the contract. For example, in the case of a tunnel, the tunnel must be open and the lanes must be passable (pure availability), but the facility must also be clean, safe, well-ventilated, properly lit, etc. (constructive availability).

If the concessionaire fails to meet the pure or constructive availability requirements, the payment for the given year is reduced by a pre-determined formula taking into account the duration, time-of-day, and severity of the failure. Persistent problems lead to contract termination. In many cases, this approach provides the public owner with stronger metrics and management tools to assure a high quality service than typically applied to services they self-perform.

Availability payment deal structures offer a number of other important benefits, including:

- ◁ The ability to implement a project today and only begin paying for it once it enters service;²⁵
- ◁ Guaranteed, long-term budget certainty for the public owner (payments will never exceed the maximum 100 percent availability level);
- ◁ A long-term, assured standard of service (with payments reduced when something goes wrong);
- ◁ Maintenance and future capital renewal and replacement that are fully funded, typically leading to lifecycle cost efficiency;
- ◁ The public partner maintains complete control over user fees, if any, and because the payments to the private partner are not subject to demand risk, there is:
 - Enhanced feasibility and a lower cost of capital;
 - Curtailed opportunity for an unexpected private sector windfall; and conversely
 - Less risk of bankruptcy (when demand is below expectation).

Reconsidering User Fee-based Concessions

Availability payments are not appropriate in all cases, particularly when the public sector counterpart cannot provide a strong, creditworthy commitment to make the future payments, or when demand for the project will be strongly linked to the concessionaire’s management decisions. In these cases, user fee concessions can be preferable. However, there has been strong public emotion about user fee-based (or “revenue risk”) concessions. Financial market risk aversion in recent years also has impaired the feasibility of concessions involving revenue risk transfer and resulted in higher and more costly levels of private equity investment.

Substantial public effort also has been invested in trying to find ways to determine the “fair” valuation of future toll revenue. To the extent making large investment choices contingent upon even “investment grade” traffic and revenue forecasts can be avoided, public confidence in decision-making will be enhanced. Events have shown that forecasts are rarely accurate and highly leveraged bets can go spectacularly right or wrong leading to windfalls and bankruptcies.

For several clients we are examining transaction structures involving variable length concessions that set firm targets for expected gross revenues through a competitive process. If traffic and revenue is more favorable than forecast, the concession terminates earlier and, if reality proves less favorable, the concession can be extended until the agreed targets are achieved. At the same time, if the public decides to terminate the concession for any reason, the compensation is simply the difference between the agreed targets and the amounts collected to date. We believe a “present value of revenue”

²⁵ Provided that the commitment of the procuring agency to pay the availability payments over the long term must be legally certain and sufficiently credit worthy for equity investors and their lenders to participate in the contract and provide attractively priced financing.

approach could yield a favorable cost of capital and greater transparency. These concepts have been proven in other countries and testing in the United States may be timely.

In addition, the most recent U.S. revenue-risk concessions include revenue sharing arrangements that will also help to mitigate many concerns. However, these arrangements must be set transparently in order to avoid “gaming” and to maintain public confidence.

However, communities also should not view revenue-based P3s as a way to finance or fund projects that fall outside of revenue forecasts—that somehow the private sector will invest the resources to allow marginal or otherwise uneconomic projects with strong political constituencies to advance.

Financing Tools and Opportunities

In this time of constrained and volatile markets, the tool kit for financing surface transportation should be diverse and flexible enough to allow states and localities to use the most efficient and appropriate forms of contracting for each given project.

The more financing tools and flexibility states and localities have available, the greater the opportunity to devise efficient finance and project delivery arrangements suited to the characteristics of individual projects.

From a Federal perspective, any project developed with the proceeds of tax-exempt, municipal debt or Build America Bonds enjoys a Federal subsidy, while P3s involving equity and private debt generate tax revenue for the Treasury at the expense of state and local governments and/or toll payers. Private Activity Bonds (PABs) and the TIFIA and RRIF credit programs help mitigate this distortion. However, limitations in these programs have reduced their utility relative to the demand (from both private and public sector borrowers) while new applications for them have arisen.

Federal Credit Programs. Of 39 projects submitting letters of interest for FY2010 TIFIA loans (not grants), only four were invited to apply; almost \$35 billion of projects we passed over. Amidst the current financial market turbulence many publically and privately-financed projects are challenged by reduced liquidity in conventional markets. TIFIA also proved to be a critical success factor in achieving financial close when the financial markets were disrupted in the aftermath of the Lehman bankruptcy.

As conditions in the capital markets hopefully continue to stabilize, TIFIA's role may become less important. Today, due to the global flight of investors to quality, the taxable TIFIA/RRIF interest rate is often lower than a tax-exempt AAA municipal borrowing rate. When this relationship reverses, demand for Federal credit programs may slacken. However, TIFIA, RRIF and other potential Federal lending programs will always remain critical counter-cyclical tools that should be adequately funded, and administered consistently and transparently.

Private Activity Bonds. By approving \$15 billion of transport Private Activity Bond (“PAB”) capacity and subsequently exempting these bonds from the Alternative Minimum Tax (AMT), Congress created an important new tool for transportation financing. Capital market disruption precluded the use of PABs to the extent hoped, but we have now seen issuances for several major projects. Going forward, expansion of the PABs capacity and continuation of the AMT exemption are important to meet the growing need.

Build America Bond PABs. The successful Build America Bond program should be expanded to PABs, creating a “BAB-PAB”. This type of credit instrument offers an opportunity for commercial banks, pension funds, foreign investors and the broader market for BABs to provide competitively priced debt for infrastructure projects. Many of these entities cannot benefit from and/or hold tax-exempt Private Activity Bonds, but possess considerable expertise in the realm of transportation infrastructure finance. The introduction of such an instrument would increase liquidity for infrastructure investment, bear little or no additional cost to the Treasury over “regular” tax-exempt Private Activity Bonds, and

could reduce the appetite for TIFIA and RRIF loans over the long-term by allowing private lenders to “compete” more effectively with the Federal credit programs.

These expert lenders are able to understand complex infrastructure transactions, not only providing liquidity but stronger diligence and oversight – functions that banks offer and were also previously performed by monoline bond insurers. They also can lend to projects on a draw-down schedule (like TIFIA and RRIF) that avoids the “negative carry” resulting from escrowing bond proceeds, which, in turn, reduces financing costs and the Federal subsidy. BAB-PABs would lower the cost of financing now indirectly borne by states such as Florida on projects like the Port of Miami Tunnel and I-595. A sample bank loan that today bears a seven percent interest rate would have an effective rate under five percent if it were executed through a BAB-PAB.

Tax Treatment of P3s. In the future, Congress also may wish to seek comment on and potentially clarify the tax treatment for equity returns from availability payment and other forms of P3s. As it stands, investors in concessions involving availability payments, variable length concessions or concessions with significant revenue sharing may face greater tax uncertainty and less favorable treatment than investors in pure, revenue risk arrangements.

Conclusion

Continuing and growing Federal appropriations that are matched at the state and local levels by appropriations and user fees will be needed to meet the transport infrastructure needs of the country. However, in many, but not all cases, P3s can help deliver, finance, operate and maintain large, essential projects in order to get more value for the money and higher levels of service for the public. Well-designed P3 contracts can improve project efficiency, provide financing flexibility, increase life cycle cost certainty, assure maintenance standards are met and improve schedule and budget adherence.²⁶

Various forms of P3s, and particularly availability payment based P3s, can play an increasingly valuable role in the delivery of major surface transportation projects. It is important to provide the tools needed to efficiently finance them – as well as to track and promulgate lessons learned from experimentation as the first generations of P3 projects advance through construction and into operation. »



THE ROLE OF SUSTAINABLE DEVELOPMENT IN SUSTAINING TRANSPORTATION

◀ **Scott Polikov**, Principal, Gateway Planning Group, Inc.

Modern transportation funding began with the Eisenhower Interstate System. Financing was intended to be based on tolling, but at the time, tolling technology required frequent stops. Instead, a national gas tax was imposed. This effectively de-linked price and cost: the price paid by drivers for specific facilities (roads) from the cost of building and maintaining those facilities.

The Interstate System provided the world unprecedented access to the American market, and likewise provided all Americans access to the world’s economies. Fiscally, the gas tax could sustain the interstate distribution system as long as three conditions were present: (1) periodically raising the gas tax to keep pace with inflation; (2) the total vehicle miles traveled by the public continually increased; and (3) fuel efficiency did not appreciably increase (thus lowering the amount paid by drivers per mile). By 2007, all three conditions had failed, hastening the collapse of the highway trust fund.

²⁶ A study on P3s in the UK found 22 percent of such projects had cost overruns vs. 73 percent of traditionally procured construction projects (National Audit Office, PFI: Construction Performance. London, UK: Stationary Office, 2003), with the P3 overruns primarily arising from owner changes. A similar study on P3 projects in Australia found P3s were completed 3.4 percent ahead of schedule on average, with no significant cost overruns as compared to traditional projects, which were completed 23.5 percent behind schedule on average and were AU\$673mil over budget for the AU\$4.9bil in traditional projects studied (The Allen Consulting Group, Performance of PPPs and Traditional Procurement in Australia, Melbourne, Australia: The University of Melbourne, 2007).

A far worse problem than fiscal unsustainability is the undermining of the interstate system's chief outcome, the efficient distribution of goods that has been the basis of our economy. Metropolitan commuter traffic congestion has slowed goods movement and is decreasing economic productivity—and doing so at just the moment in history when other economies are challenging America's lead in productivity. Interstate congestion is the direct result of Post-WWII development patterns: the unintended use of the U.S. Highway System as a means of intra-regional movement between single-use residential and commercial destinations. This was made possible by the de-linking of transportation planning and land development planning.

Transportation funds are appropriated based on need, which is putatively defined as relieving congestion. Congestion is often caused by inefficient development patterns. Thus, the more inefficient local development is, the more funds are allocated to that area—ironically reinforcing failure. In this context, the development of large-scale residential subdivisions, retail malls and employment centers—all disconnected from one another—would not have been possible if the interstate system had not provided a subsidized means of movement for individuals.²⁷

This subsidy is funded in large part by those who pay the gas tax while driving on city roads that currently do not receive Federal funding. Thus, the great irony: over a period of 50 years, city dwellers have literally paid for the road of exodus for people and wealth from our cities. And in the process, this dynamic has greatly suppressed the efficient movement of goods from city to city on the U.S. Highway System. For the United States to remain globally competitive, the efficient movement of goods is necessary. This is not possible under the current twin de-linking: (1) cost from price, and (2) transportation planning from development patterns.

Understandably, developers have profited by purchasing inexpensive land far away from city centers linked by roads subsidized by the American taxpayer. This particular development pattern—wherein highways are used for daily routines—quickly devours highway capacity and creates demand for continual lane-mile expansion that is not fiscally sustainable. Accordingly, development patterns must heretofore be disciplined by interconnected street networks with multimodal capacity (i.e., rail transit, bus, cycling, walking) in order to cease reinforcement of failure caused by the dendritically configured regional transportation design and the related single-use development patterns.

Interconnected transportation facilities—roads and rail—can generate profitable adjacent development, especially when coupled with town planning practices encouraging walkable urbanism and convenient access to transit. However, the land development wealth created by those facilities generally will not be used to help finance the facility, especially when those facilities are not designed in a manner to maximize and sustain long-term adjacent development patterns and resulting value. Combining transportation design and town planning, can serve to (1) finance funding gaps for specific transportation projects; (2) ensure that development patterns are sustainable; and (3) generate long-term revenue for local governments.

This Value Capture Approach is a type of public-private partnership. The public side is the transportation facility owner. It uses the public process to define the need for a given facility, and uses its powers to acquire the right-of-way. Its goal is to further the public's interest by maximizing all four attributes of transportation: connectivity, access, social good and economic vitality. Using its knowledge of markets, the private side designs the transportation facility and defines land development patterns in a manner that furthers the public purpose: neighborhood integrity and economic opportunity—all in a sustainable manner, economically and environmentally.

²⁷ In general, the cost of travel in suburban sprawl development patterns is roughly ten times the price individuals pay in gas taxes: drivers pay about 2 cents/mile on roads that cost 20 cents/mile to build and maintain. These average figures were determined by TxDOT analyzing the level of roadway subsidy per car per mile for a typical state highway in Texas in response to a request by Mike Krusee while he served as Chairman of the House Transportation Committee of the Texas Legislature.

For redevelopment, financing is needed for facility redesign. Roads built strictly for mobility—or those widened over time to accommodate increasing traffic without regard to adjacent context—can be redesigned to generate redevelopment opportunities for the adjacent private properties. Complemented with a form-based walkable context, the concomitant redesigns of road and property serve to catalyze one another. Thus, unrealized future revenue streams can be monetized to finance redesign and reconstruction, all while creating a sustainable pattern of development.

For Greenfield projects, the value capture approach is particularly beneficial when combined with a concession-based tolling model. Toll financing is based on traffic-and-revenue (T and R) studies; i.e., monetizing the future toll revenue paid by drivers. It does not, however, capture the surrounding increased property value made possible by the road itself. This approach seeks to partner with both local government jurisdictions and property developers to monetize unrealized revenue in tax streams and land development profits. This approach also increases the concession's value and provides the public with an income-producing asset rather than a future liability. It can also provide additional efficiencies to fund transportation across modes in a regional multimodal system.

In this context, Reauthorization could support a more sustainable funding environment by:

- ◁ Incentivizing DOTs and MPOs to allocate Federal funds to transportation facilities that support sustainable development patterns rather than simply “reducing” congestion
- ◁ Allowing for the flexing of Federal funds to support “off system” street networks that improve the efficiency of development patterns and, as a result, value capture for regional transportation
- ◁ Providing prioritized funding to Regions that facilitate investment linkages among interconnected streets, transit, housing and employment, and walkable mixed-use neighborhoods in both urban and suburban locations ▶



VALUE CAPTURE

- ◁ **David Levinson**, Associate Professor and RP Braun/CTS Chair of Transportation, University of Minnesota (based on work with Jerry Zhao, Adeel Lari, and Michael Iacono)

Large public investments in transportation infrastructure—such as a new freeway interchange or transit station—can increase the value of adjacent private land, sometimes substantially. Capturing the value of this benefit through various tools is gaining interest as a finance mechanism for infrastructure investments. But many questions remain: Does “value capture” promote or hinder economic development? How does it affect different segments of society? Is the revenue substantial, stable, or predictable? How feasible is adoption and implementation?

Transportation and Value Creation

Accessibility to desired destinations by customers and employees tends to play a major role in location decisions and, therefore, drives up the value of land in highly accessible locations. Convenient transportation facilities, depending on use, can come in the form of highway interchanges, public transportation lines or stations, and freight rail facilities.

Increases in the capacity of each transportation mode in response to rising demand lead to increases in land value, whereas allowing congestion to worsen leads to declining values.

From Value Creation to Value Capture

A general principle sometimes referred to as the “benefit principle,” holds that systems are more efficient if their costs and benefits are better related to each other. Given this principle, the long-used gas tax would seem like a reasonable funding source, given the assumption that transportation benefits are proportional to vehicle operations (and vehicle operations are proportional to gasoline consumption).

Beneficiaries

Transportation improvements create benefits for three groups of beneficiaries:

- ◁ The general public, which benefits from broad economic and social returns. Such benefits create a rationale for use of general fund financing. Because the growth of the general tax base occurs through the life cycle of a transportation facility, the corresponding general fund revenues are suitable for both initial capital costs and ongoing operations and maintenance (O&M) costs.
- ◁ Transportation users, who benefit from reduced travel times and enhanced safety. Such benefits create a rationale for the use of gas taxes, mileage charges, vehicle sales and property taxes, wheelage charges, tolls, and transit fares. Typically, users receive the bulk of the benefits through the use of facilities, indicating that these types of charges may be assigned to users to cover most (O&M) costs.
- ◁ Property owners and developers, who benefit from increased property values generated by transportation improvements. Such benefits create a rationale for the use of value capture policies such as land value taxes (LVT), tax increment financing (TIF), special assessments (SA), transportation utility fees (TUF), development impact fees (DIF), negotiated exactions, joint development (JD), and air rights. For these beneficiaries, value gains are mostly realized upon the completion of transportation projects; therefore, these strategies may be used more often for capital costs.

While multiple value capture policies can be applied simultaneously, the total level of value capture cannot exceed the total benefits derived from a transportation improvement. Otherwise, the financial instruments would negate the economic rationale for development.

However, in addition to creating benefits for travelers, transportation improvements also create value for owners and developers of nearby property in the form of higher land values and/or property prices, or enhanced development opportunities. In order to better conform to the benefit principle, a portion of these gains could be recovered to help fund transportation improvements. This is “value capture.”

Value Capture Policy Evaluation and Implementation Considerations

The paper considers each of eight value capture techniques in relation to economic efficiency, equity, sustainability, and feasibility.

Land Value Tax (LVT). Rather than being assigned to a specific project, land value taxes more generally capture the value created by the provision of public goods, including the accessibility afforded by transportation networks. A tax on land would be preferred to a tax on buildings, as the former would result in less economic distortion due to the fixed supply of land. A pure tax on land is possible, though rarely used. While land value taxes are desirable from the standpoint of economic efficiency and sustainability, they would most likely be slightly regressive in terms of ability-to-pay. Further, land value taxes may prove politically challenging due to high visibility and potential unpopularity.

Tax Increment Financing (TIF). Tax increment financing uses taxes levied on the increment in property value within a development to finance development-related costs. Tax increment financing is most commonly used by local governments to promote housing, economic development, and redevelopment in established neighborhoods. Tax increment financing has been used, however, in some instances to finance transportation projects. The paucity of evidence on the effectiveness of TIF districts for transportation purposes makes it difficult to evaluate the efficiency of this tool. Evidence from Chicago suggests that, in certain cases, the increment in property value that can be captured from a transportation improvement may be large, though this case involved some unique circumstances (e.g., a heavy rail system in a very dense, central city area). While TIF districts may promote benefit equity, they may raise some unique issues related to geographic equity, as some overlapping jurisdictions (e.g., school districts) often do not share in the benefit from a TIF district. TIF districts may be limited to specific

projects and one-time capital costs. TIF districts may be politically feasible, as they are perceived to promote projects that “pay their own way.”

Special Assessments (SA). Special assessments impose charges on property owners near a new or improved transportation facility based on geographic proximity or some other measure of special benefit. Various methods have been used to determine which properties receive special benefit and how to allocate charges among these beneficiaries. Some of these methods include measurement of distance from an improved facility, property frontage adjacent to an improved facility, and property acreage. Special assessments generally promote economic efficiency and equity along several dimensions. However, given the location-specific nature of the mechanism, the amount of revenue generated in each instance is relatively small and limited in use to initial capital costs. Political feasibility may be an issue with special assessments, as they are highly visible to affected property owners

Transportation Utility Fees (TUF). Transportation utility fees derive from the notion that transportation networks can be treated like a utility, similar to other local services such as water and wastewater treatment, which are financed primarily from user charges. Transportation utility fees are assessed on characteristics more closely related to transportation demand than property taxes, which currently account for a large share of local transportation revenues. Utility fees have the potential to improve efficiency by shifting the cost burden from residential to commercial and industrial properties, which tend to consume more transportation services than their relative tax contributions would imply. In principle, transportation utility fees could help promote equity, but only if a link can be established between the various characteristics that form the basis of utility fees and the value of the benefits received from consumption of transportation services, a link that in the past has not been strongly established. The revenue from transportation utility fees would be relatively stable, as the demand for travel is not terribly sensitive to cyclical economic trends. Transportation utility fees are politically feasible, as shifting the cost burden to non-residential properties would most likely be popular among existing residents of a jurisdiction. Enforcement of utility fees may prove difficult, as it would be hard to deny transportation services to a delinquent property owner.

Development Impact Fees (DIF). Development impact fees are one-time charges collected by local governments from developers for the purpose of financing new infrastructure and services associated with new development. They are similar to negotiated exactions in that they are charged primarily to new development to help recover growth-related, public service costs, but differ in that impact fees can be levied for off-site services, such as local roads, schools, or parks. The efficiency of impact fees can be established to the extent that they pass along the marginal costs of land development, including the provision of transportation infrastructure, to the primary beneficiaries. Impact fees promote benefit equity, but may have other undesirable equity effects if developers cannot recover the costs associated with impact fees and are forced to abandon low- and moderate-income segments of the housing market. Impact fees are not a primary source of revenue for transportation in most jurisdictions, but can help finance the share of transportation budgets attributable to new development. They are also aided by the fact that they are politically and administratively feasible.

Negotiated Exactions. Negotiated exactions are functionally similar to development impact fees, with the exceptions that they are not determined through a formal, formulaic process and are typically not applied to off-site infrastructure provision. Exactions can take the form of in-kind contributions to local road networks, parks, or other public goods as a condition of development approval, or can be requested in the form of in-lieu fees. Exactions generally promote economic efficiency and social equity. In most cases, negotiated exactions should be seen as a supplemental source of revenue, rather than a large-scale replacement for more traditional sources of revenue. Negotiated exactions are generally politically feasible, as they are seen as a way to make new residents “pay their own way.”

Joint Development (JD). Joint development, as typically applied in discussions of value capture, refers to the spatially coincidental development of a transportation facility (e.g., a public transit station) and adjacent private real estate development, where a private sector partner either provides the facility or

makes a financial contribution to offset its costs. The term “joint development” could also be used to refer to jointness in timing of development or ownership of transportation infrastructure, though for the purposes of this report, the above definition is used to refer to various forms of cost-sharing or revenue-sharing arrangements. JD arrangements generally promote efficiency, as the voluntary nature of the transaction ensures that the expected benefits of the private sector partner exceed the cost (or share of costs) of the transportation improvement that he or she anticipates. This characteristic also promotes benefit equity among participants. Since the nature of JD arrangements is often location-specific, the tax base is rather narrow and the amount of revenue generated is relatively small. Joint developments are often politically feasible, due to their narrow impact, but entail a higher degree of administrative complexity.

Air Rights. Air rights are a form of value capture that involves the establishment of development rights above (or in some cases below) a transportation facility that generates an increment in land value. Air rights agreements promote efficiency to the extent that the increment in land value generated by the facility exceeds the cost of its development. The sale of air rights may also promote benefit equity, since the costs of a transportation improvement can be allocated more proportionally among non-user beneficiaries. Similar to joint development, air rights agreements tend to provide a narrow tax base and a relatively small amount of revenue, though they can provide some or all of the initial capital costs of a specific project. The narrow scope of impact of air rights projects indicates that they should be politically feasible, though they share some of the administrative complexities associated with joint development arrangements. »



EXAMINING OPTIONS FOR IMPLEMENTING MILEAGE-BASED USER FEES

◀ Paul Sorenson, Operations Researcher, RAND Corporation

In recent decades, Federal and state excise motor fuel taxes have not been raised often enough or with sufficient magnitude to offset the combined effects of inflation and improved fuel economy, leading in turn to growing highway revenue shortfalls. Looking forward over the next several decades, the expected introduction of more efficient conventional vehicles along with alternative fuel vehicles dim the prospects for continued reliance on gasoline and diesel taxes to provide enough funding for constructing and maintaining the nation's highway system.

Against this backdrop, many have suggested shifting to a system of highway user fees based on vehicle miles of travel (VMT fees) rather than fuel consumption (see, for example, the National Surface Transportation Infrastructure Finance Commission report, *Paying Our Way*).²⁸ While VMT fees would still need to be indexed or periodically increased to account for inflation, they would be unaffected by fuel economy or fuel type and should thus provide a more sustainable source of highway revenue in the coming years. VMT fees might also be structured to vary with certain vehicle or travel attributes to help reduce traffic congestion, harmful emissions, and excessive road wear (e.g., by charging higher per-mile fees for peak-hour travel in congested corridors or lower per-mile fees for lower emissions vehicles). Additionally, a VMT-fee system might supply a rich source of (anonymously reported) travel data to support improved planning and operational management, and the in-vehicle metering equipment could accommodate many additional value-added services (e.g., pay-as-you-drive insurance, automated payment of parking fees, traveler safety alerts, routing assistance, and the like).

As explored in a recent NCHRP study, *Implementable Strategies for Shifting to Direct Usage-Based Charges for Transportation Funding*, a range of technical options for implementing VMT fees would be possible.²⁹ At the simple end of the spectrum, motorists might be required to submit to annual odom-

28 National Surface Transportation Infrastructure Finance Commission (2008). *Paying Our Way*. <http://financecommission.dot.gov/>

29 Sorenson et. al. (2009) “Implementable Strategies for Shifting to Direct Usage-Based Charges for Transportation Funding.” Contractor’s Final Task Report for NCHRP Project 20-24(69).

eter inspections as a basis for levying annual fees. At the opposite extreme, it would be possible to equip vehicles with sophisticated GPS-based metering devices capable of levying and apportioning fees based on the jurisdiction, route, and time of travel. There are also multiple options for collecting fees, preventing evasion, and protecting driver privacy. Broadly speaking, the alternative mechanisms for implementing VMT fees present tradeoffs in terms of metering capabilities (and in turn the ability to support policy goals beyond revenue collection), cost to implement and operate the system, administrative complexity, and public acceptability.

The results of recent mileage-based user fee pilot projects conducted by the Oregon Department of Transportation, the Puget Sound Regional Council, and the University of Iowa, along with similar operational deployments in several European nations and New Zealand, demonstrate the general feasibility of implementing VMT fees at the Federal or state level. Yet planning and executing a transition from fuel taxes to VMT fees would be extremely complex, involving numerous technical, financial, institutional, and political uncertainties. Examples include the types of fee structures that the system would be intended to support (e.g., flat per-mile fees vs. fees that vary by jurisdiction or by route and time of travel), the cost required to develop and operate the various possible implementation approaches at scale, appropriate roles for public and private sector participants in implementing and administering the system, and the prospects for building public support for a shift to VMT fees.

To further assess and prepare for a possible transition to VMT fees in the coming years—that is, to determine whether such a transition would be desirable, whether it would be acceptable to the public, and how to develop the system in the most cost-effective manner—it would be important to resolve such uncertainties. The aforementioned NCHRP report suggested five complementary activities that could be helpful in this regard: planning and policy guidance, analytic studies, targeted research and development support, expanded system trials, and education and outreach. In a follow-on NCHRP study currently in the final stages of review, the research team was asked to further elaborate on the types of system trials that would be helpful to conduct toward this end. In broad strokes, the approach in the follow-on study was to identify the range of issues that might be helpful to explore in trials and then solicit the perspectives of stakeholders and subject matter experts on how to design the trials to address the most critical uncertainties.

An overarching insight that emerged from the study is that the appropriate structure for the trials would depend in part on the envisioned pathway for the transition to VMT fees. Would, for example, VMT fees first be implemented by the Federal government or instead by individual (or groups of adjacent) states? And would the transition rely solely on a mandated adoption process (e.g., requiring the installation of VMT metering devices with new vehicle purchases) or instead include an initial period of incentivized voluntary adoption to build confidence in the system and foster a greater degree of public acceptance. Recognizing that such questions could influence the set of issues that would be helpful to examine in the trials, the research outlined three possible frameworks for organizing the trials to support different implementation pathways: (a) helping states develop their own VMT-fee systems; (b) examining the issues involved in developing a national system of VMT fees; and (c) fostering a market for in-vehicle metering devices that would support VMT fees along with a host of value-added services with the aim of providing functionality that would motivate voluntary adoption.

The research then addressed, in greater specificity, how the trials might be organized under these three alternate frameworks. For certain issues the details would vary from one framework to the next, but there would also be considerable commonality. Highlights of the options for designing and executing the trials that emerged from the research include:

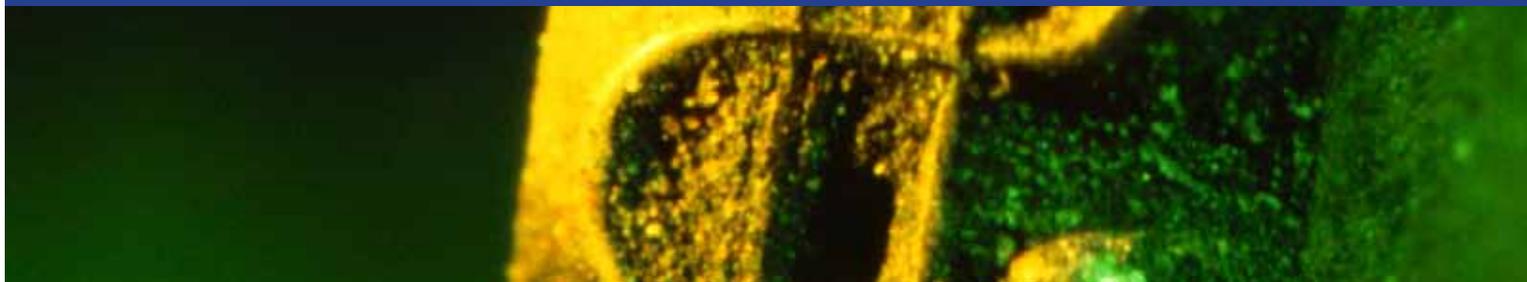
- ◁ Funding for participation in the trials would be awarded through a competitive process to a small number of perhaps four to six states.
- ◁ To examine the full range of functionality required to implement and operate a system of VMT fees (e.g., including the collection of actual revenue along with strategies to detect and prevent fee

evasion), the trials would last on the order of four to six years, including one to two years of planning and preparation, two to three years of active trials, and an addition year for post-trial evaluation.

- ◁ To evaluate the feasibility and cost of alternate implementation mechanisms at scale, the trials would include at least tens of thousands of participants (e.g., perhaps ten to twenty thousand per state, and fifty to a hundred thousand in total).
- ◁ The trials would likely cost on the order of \$2,000 to \$4,000 per participant. Assuming fifty to a hundred thousand participants in total, the cost over the duration of the trials might fall in the range of \$100 million to \$400 million. ▶



APPENDIX B—LIST OF ACRONYMS



- < **AASHTO.** American Association of State Highway and Transportation Officials
- < **ACTA.** Alameda Corridor Transportation Authority
- < **AMT.** Alternative Minimum Tax
- < **ARC.** Access to the Region's Core
- < **ARRA.** American Recovery and Reinvestment Act of 2009
- < **ARS.** Alliance for Regional Stewardship
- < **BAB.** Build America Bonds
- < **DBFOM.** Design-Build-Finance-Operate-Maintain
- < **DIF.** Development Impact Fee
- < **FHWA.** Federal Highway Administration
- < **FRA.** Federal Railroad Administration
- < **HOT.** High Occupancy Toll
- < **HTE.** Highway Trust Fund
- < **JD.** Joint Development
- < **LVT.** Land Value Tax
- < **NASA.** National Aeronautics and Space Administration
- < **NCHRP.** National Cooperative Highway Research Program
- < **NIB or iBank.** National Infrastructure Bank
- < **NSTIFC (Financing Commission).** National Surface Transportation Infrastructure Financing Commission

- < **PAB.** Private Activity Bonds
- < **PPP or P3.** Public-private Partnership
- < **O&M.** Operations and Maintenance
- < **OPEC.** Organization of Petroleum Exporting Countries
- < **OTCB.** Qualified Tax Credit Bonds
- < **RRIF.** Railroad Rehabilitation and Improvement Financing
- < **RTD.** Regional Transportation District (Denver, CO)
- < **SA.** Special Assessment
- < **SAFETEA-LU.** Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
- < **SIB.** State Infrastructure Bank
- < **STAA.** Surface Transportation Authorization Act of 2009
- < **TIF.** Tax Increment Financing
- < **TIFIA.** Transportation Infrastructure Financing and Innovation Act
- < **TUF.** Transportation Utility Fee
- < **USDOT.** United States Department of Transportation
- < **VMT.** Vehicle Miles Traveled



APPENDIX C—LIST OF PARTICIPANTS



- ◁ **Sirat Attapit**, Rep. Xavier Becerra
- ◁ **Sharon Barkeloo**, House Committee on Transportation & Infrastructure
- ◁ **Jack Basso**, AASHTO Center for Excellence in Project Finance
- ◁ **Ellen Beares**, Senate Appropriations Committee
- ◁ **Rep. Earl Blumenauer**, U.S. House of Representatives
- ◁ **Tom Boast**, FirstSouthwest
- ◁ **Deborah Brown-Davis**, Federal Highway Administration
- ◁ **Thomas Bulger**, Government Relations Inc.
- ◁ **David Burwell**, Carnegie Endowment
- ◁ **Homer Carlisle**, American Public Transportation Association
- ◁ **Strat Cavros**, American Association of State Highway and Transportation Officials
- ◁ **Winnie Chang**, Senate Budget Committee
- ◁ **Lowell Clary**, P3 Development Company
- ◁ **Gregory Cohen**, American Highway Users Alliance
- ◁ **Allison Dane Camden**, House Transportation and Infrastructure Subcommittee on Highways and Transit
- ◁ **Glenn Deitiker**, Telvent Caseta
- ◁ **Nicholas Devereux**, Sen. Mark Warner
- ◁ **Mort Downey**, PB Consult
- ◁ **Stephen Finnegan**, Auto Club / Mobility 21
- ◁ **John Fischer**, Congressional Research Service
- ◁ **Griffin Foster**, Rep. Judy Biggert
- ◁ **Wendy Franklin**, AASHTO Center for Excellence in Project Finance
- ◁ **Sue Gander**, National Governors Association
- ◁ **Laurie Garrow**, Georgia Institute of Technology
- ◁ **Jane Garvey**, Meridian Infrastructure
- ◁ **Yoav Hagler**, America 2050
- ◁ **Paul Hanley**, University of Iowa
- ◁ **Patrick Hatch**, House Appropriations Committee

- ◁ **JayEtta Hecker**, Bipartisan Policy Center
- ◁ **Alex Herrgott**, Senate Environment and Public Works Committee
- ◁ **John Horsley**, American Association of State Highway and Transportation Officials
- ◁ **Ryan Hosie**, Rep. Chris Lee
- ◁ **Susan Howard**, North Carolina Department of Transportation
- ◁ **Kylah Hynes**, New York State Washington Office of the Governor
- ◁ **Clint Jordan**, Mitsui & Co (USA), Inc.
- ◁ **Matthew Kelly**, Amtrak
- ◁ **Robert Kirk**, Congressional Research Service
- ◁ **Sarah Kline**, Reconnecting America
- ◁ **Todd Kohr**, House Transportation Committee
- ◁ **Joung Lee**, AASHTO Center for Excellence in Project Finance
- ◁ **David Levinson**, Department of Civil Engineering, University of Minnesota
- ◁ **Richard Little**, Keston Institute for Public Finance and Infrastructure Policy, University of Southern California
- ◁ **Deron Lovaas**, Natural Resources Defense Council
- ◁ **Caroline Macheska**, American Society of Civil Engineers
- ◁ **William Mallett**, Congressional Research Service
- ◁ **Bud McDonald**, AASHTO Center for Excellence in Project Finance
- ◁ **Ryan McGinness**, Nevada Washington Office
- ◁ **Rep. John Mica**, U.S. House of Representatives
- ◁ **Kevin Mills**, Rails to Trails Conservancy
- ◁ **Billy Moore**, Transportation Transformation Group
- ◁ **Edward Mortimer**, URS Corporation
- ◁ **Richard Mudge**, Delcan Corporation
- ◁ **Lee Munnich**, Humphrey Institute of Public Affairs, University of Minnesota
- ◁ **Nathan Musick**, Congressional Budget Office
- ◁ **Peter Nonis**, AAA
- ◁ **Kerry O'Hare**, Building America's Future
- ◁ **Ken Orski**, Innovation Briefs
- ◁ **Sean O'Shea**, Building America's Future
- ◁ **Mike Parker**, Jeff Parker and Associates
- ◁ **David Parkhurst**, National Governors Association
- ◁ **Laura Perrotta**, American Traffic Safety Services Association
- ◁ **Mark Pisano**, School of Policy, Planning, and Development, University of Southern California
- ◁ **Scott Polikov**, Gateway Planning Group
- ◁ **Jim Preusch**, Alameda Corridor Transportation Authority
- ◁ **Marnie Primmer**, Mobility 21
- ◁ **Sarah Puro**, Congressional Budget Office
- ◁ **Zachary Radford**, Sen. Jon Tester
- ◁ **Gov. Edward Rendell**, Commonwealth of Pennsylvania
- ◁ **Alex Renjel**, Senate Environment and Public Works Committee
- ◁ **Christine Riffle**, Rep. Lummis
- ◁ **Darrin Roth**, American Trucking Associations
- ◁ **Kathy Ruffalo**, Ruffalo and Associates, LLC
- ◁ **Phil Russell**, Lochner
- ◁ **Melissa Savage**, National Conference of State Legislatures
- ◁ **Joshua Schank**, Bipartisan Policy Center
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- ◁ **Lilly Shoup**, Transportation for America

- ◁ **Meredith Slesinger**, American Public Transportation Association
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- ◁ **David Thornburgh**, Fels Institute of Government, University of Pennsylvania
- ◁ **Darren Timothy**, Federal Highway Administration
- ◁ **Petra Todorovich**, America 2050
- ◁ **Kimberlee Trzeciak**, Rep. John Dingell
- ◁ **Shin-pei Tsay**, Carnegie Endowment for International Peace
- ◁ **Jim Tymon**, House Transportation Committee
- ◁ **Alan van der Hilst**, Congressional Budget Office
- ◁ **Mitch Warren**, Senate Banking Committee
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- ◁ **Anne Wingate**, The Brookings Institution
- ◁ **Sen. Ron Wyden**, U.S. Senate
- ◁ **Geoff Yarema**, Nossaman LLP
- ◁ **Robert Yaro**, Regional Plan Association
- ◁ **Shirley Ybarra**, Reason Foundation
- ◁ **Jessica Yearous**, Sen. John Thune
- ◁ **Erika Young**, National Association of Regional Councils
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