

TOLLWAYS

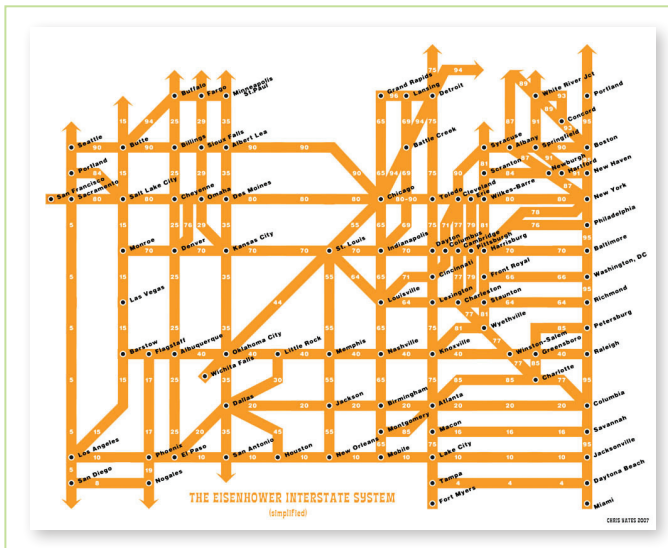
Making the Difference

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BUILDING THE CASE FOR TOLLING THE INTERSTATES

BY ED REGAN AND STEVEN BROWN

There is little debate about the importance of America's interstate highway system (IHS). Developing a nationwide system of limited access highways where it is possible to drive from New York to Los Angeles without stopping at a single traffic light probably has had a more positive economic impact than any other transportation policy decision in our country's history.



Many portions of the interstate system are now more than 50 years old. Because of the age of the system and the declining role of the federal government in continuing to pay for it, state departments of transportation will confront huge costs to rebuild the system. Yet, current federal law still imposes major restrictions on the use of tolling on existing interstate facilities.

The premise of this article is that we must change federal policy to give states maximum flexibility to use tolling to rebuild the interstate highway system.

A LITTLE HISTORY

We commonly associate the interstate system with President Dwight D. Eisenhower who signed into law the highway act that created the IHS in 1956. But the story may actually begin with President Franklin D. Roosevelt in 1937. ⁽¹⁾ Together with his Chief of the Bureau of Public Roads, Thomas McDonald, FDR reportedly drew on a map his vision for a cross-country high level road system.

Congress first mandated formal study of the Interstate System in the Federal Highway Act of 1938 which states:

The Chief of the Bureau of Public Roads is hereby directed to investigate and make a report of his findings and recommend feasibility of building, and cost of, super highways not exceeding three in number, running in a general direction from the eastern to the western portion of the United States, and not exceeding three in number, running from the northern to the southern portion of the United States, including the feasibility of a toll system on such roads." (2)

The original concept of the interstate was proposed to be "self liquidating" by charging tolls and through the sale of excess lands taken in condemnation. FDR reportedly proposed the taking of one mile of land on either side of the proposed highways, with the specific goal of capturing the increased land value that the interstate routes would provide.⁽³⁾ The "Toll Road and Free Road" report concluded, however, that only a portion of the planned limited access facilities would be financially feasible, heavy volume traffic corridors in the most high density portions of the U.S. But the interstate plan was a national system to be built in both high and low density sections of America, and the more rural states could not likely guarantee the traffic and revenue to repay the projected costs. Toll roads, of course, preceded the decision to

complete the full interstate system and accounted for almost 3200 miles of the system as shown in Table 1. ⁽⁴⁾

THE TURNPIKE ERA

By the time President Eisenhower signed the 1956 Highway Act into law, the president and Congress had decided to use the federal gas tax to fund 90 percent of the implementation cost of this great national system. Toll roads conceived prior to the interstate system were allowed to continue to use tolling even after being incorporated into the interstate system. These interstate system toll roads were initially required to remove tolls once the bonds were paid off. That federal requirement was lifted in the 1980s, but strong opposition to tolling interstate routes continued for many more years at the Federal Highway Administration (FHWA) and in Congress.

In the meantime, the concept of toll roads, which appeared to have seen its heyday in the 1940s and 1950s, began to see a strong resurgence in the 1980s, 1990s and first decade of the new millennium. States used tolls in rapidly growing urban areas usually on facilities that were not part of the interstate system. The growing interest in tolling and pricing has continued to accelerate as more and more states are desperate for new, sustainable sources of revenue. The emergence of fully automated tolling, both electronic tolling and video

The Dwight D. Eisenhower National System of Interstate and Defense Highways, commonly called the Interstate Highway System, is a network of limited-access roadways in the United States. Named for President Dwight D. Eisenhower who championed its formation, the interstate system is 47,016 miles long. It was constructed under the principles of the Federal-aid highway program, which was established in 1916. Although the Interstate System accounts for about 1.1 percent of the nation's total public road mileage, it carries 24 percent of all highway travel. The states built, own and operate the interstate highways. Even though federal law generally precludes the expenditure of federal funds on tolled facilities, the system includes 3,175 miles of toll facilities which were absorbed into the original system mileage.

TABLE 1: Toll Facilities on the Interstate System

TOLL FACILITY	MILES
Connecticut Turnpike	129
Dallas-Ft. Worth Turnpike	30
Delaware Turnpike	11
Illinois Tollway	305
Indiana Toll Road	157
JFK Highway (MD)	50
Kansas Turnpike	236
Kentucky Turnpike	45
Maine Turnpike	109
Massachusetts Turnpike	138
New Jersey Turnpike	122
New York Thruway	641
Ohio Turnpike	241
Oklahoma Turnpikes	280
Pennsylvania Turnpike	531
Richmond-Petersburg Turnpike	50
West Virginia Turnpike	100
TOTAL MILES	3175

imaging, fueled the rapid expansion of tolling. This has reduced the high cost and congestion problems associated with older, traditional methods of cash toll collection.

Over the last 10 years or so, toll roads have been used on about half of all new freeway center line miles built in the United States. While toll roads still represent a small proportion of interstate and other freeway routes, they are increasingly being considered as the only viable option for state and local governments in an era of declining revenue from traditional sources, most notably the gas tax. Many experts recognize that the motor fuel tax, at both the federal and state level, will not be sustainable over the long term because of increased fuel efficiency and the challenges of addressing energy independence and climate change.

Tolling and pricing have also emerged as a popular means to manage demand and reduce congestion on our freeways, particularly in urban areas. Managed lanes are now in operation in about a dozen locations with several more projects in the planning stages.

CHANGING FEDERAL PERSPECTIVE

Over the last two decades, we have seen a dramatic shift in federal policy related to the use of tolls. Beginning with the Surface Transportation Act of 1987, cracks began to appear in federal opposition to tolling. This trend continued in the landmark Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, which established the congestion pricing program and a requirement that states consider the use of tolls on all major bridge replacement projects.

Subsequent federal transportation bills have continued to whittle away at federal restrictions on tolling. This included establishment of several tolling pilot programs related to congestion pricing, express toll lanes, high occupancy toll (HOT) lanes, and the Interstate Reconstruction Program. This latter pilot would allow tolls to be established on existing toll-free highways reconstructed and expanded to meet future demand. The pilot program was limited to three special cases; while “slots” have been authorized under the program, it has not yet been used to add tolls to any existing toll-free interstate highway.

The last federal surface transportation law, SAFETEA-LU, expired in 2009. While there have been several short term extensions to SAFETEA-LU, the “great recession “ and other pressing issues have delayed enactment of a new surface transportation authorization.

The interstate highway system is the last and strongest bastion of federal resistance to the rapid

emergence and growing acceptability of tolling our transportation system. Why? Opposition to tolling the interstates tends to boil down to these three arguments:

1. Major trucking interests believe tolls would increase costs and place an additional burden on interstate commerce.
2. Safety advocates say that toll facilities — with their attendant toll booths and plazas — create congestion and increase the likelihood of accidents.
3. The biggest argument offered is that the roads “are already paid for.”

WE DO NOT HAVE A RELIABLE SOURCE OF FUNDS TO REBUILD THE INTERSTATE SYSTEM, A COST THAT WILL BE MANY TIMES THE INITIAL COST OF CONSTRUCTION.

All of these arguments fail when subjected to logical scrutiny.

1. Truckers do not offer a suitable alternative to cover the huge expense needed to rebuild the interstate highway system. Many states want to use tolls to rebuild the principal commercial arteries used by the trucking industry: interstate highways.
2. Regarding safety concerns, the use of electronic toll collection and free-flow tolling actually improve mobility and safety where it is employed.
3. And what about the “already paid for” argument? While we as a nation have paid for the initial construction of the interstate system with our fuel taxes, the system is crumbling and we do not have a reliable source of funds to rebuild the system, a cost that will be MANY TIMES the initial cost of construction.

CONNECTICUT TURNPIKE — A CASE STUDY

To demonstrate the fallacy of the argument that “they are already paid for,” let’s look at the Connecticut Turnpike. Originally built as a toll road and opened to traffic in 1958 at a cost of \$465 million, the road stretched 129 miles through southern and eastern Connecticut. Designated as part of I-95 after it was completed and opened to traffic, tolls were ultimately removed from the Turnpike in 1985.

The history of the Connecticut Turnpike provides some valuable lessons. The first of these was a bridge collapse. In the early morning hours of June 28, 1983, the Mianus River Bridge collapsed, hurling several vehicles 70 feet to the river below and resulting in several deaths. The collapse of a bridge that was only 35 years old triggered the establishment of a national bi-annual bridge inspection program. It also triggered a significant increase in Connecticut motor fuel taxes that were dedicated to the inspection and reconstruction of almost every bridge structure in the state. But more than anything else, the collapse proved that bridges and roads don’t last forever, even interstate roads.

In 1985, the Turnpike experienced a major accident at the Stratford toll plaza. The driver of a tractor semi-trailer fell asleep at the wheel and crashed into a line of vehicles stopped at a toll plaza, resulting in seven deaths. After the accident, political movements began almost immediately to remove tolls from the Turnpike and several other Connecticut facilities.

The Stratford truck crash was a huge tragedy. One could argue that this tragedy would have happened whether or not the Stratford toll plaza was there; a speeding 18-wheel truck was operating out of control by a “dozing” driver. The mere fact that the



crash happened at the toll plaza proved to be the beginning of the end of tolls in Connecticut. It was also a symbol for what many believed was wrong with tolling, namely the safety problems and overall inefficiency of traditional cash toll collection. It was a valuable lesson for the entire toll industry.

But today, with all-electronic toll collection and free-flow tolling, these safety and efficiency issues are no longer the norm. Today tolls could be added to existing Interstate highways in the form of “gantries” across the existing lanes without requiring traffic to stop or even slow down.

Now let’s turn our attention to a more recent I-95 reconstruction project in the vicinity of New Haven. That project includes 13 miles of roadway widening, interchange reconstruction, and the replacement of the major I-95 Quinnipiac River Bridge. The total length of the New Haven area project is 13 miles, roughly 10 percent of the entire length of the original Connecticut Turnpike. The cost of this reconstruction program is nearly five times the original cost of the entire Connecticut Turnpike, and it covers just 10 percent of its length.

Does this suggest that the cost of rebuilding the entire turnpike would be 50 times the original cost? Probably not; the New Haven area project has some unique major structure work. However, it is probably reasonable to assume that the cost to reconstruct the entire Connecticut Turnpike — or for that matter, the entire interstate highway system — could be 10 to 20 times the initial cost of the system.

The Mianus River Bridge collapse and the New Haven improvement project demonstrate that our interstate highways are certainly not “paid for.” Suggesting that a road, bridge, tunnel or any other project is “already paid for” is a disingenuous argument that must be openly and vigorously challenged.

WHY IS THIS IMPORTANT?

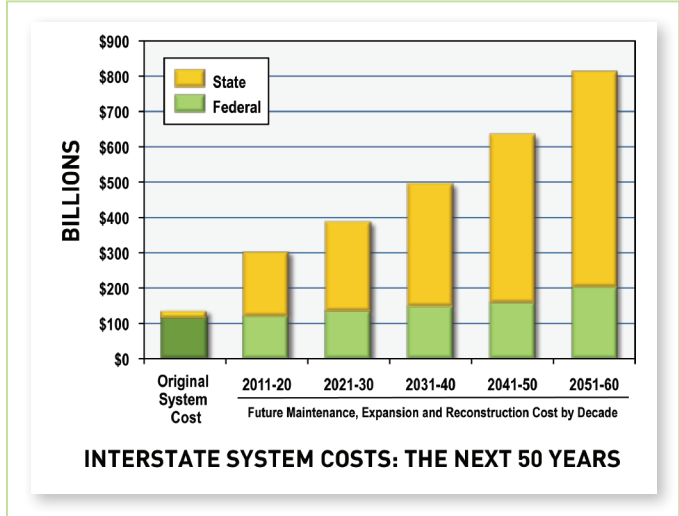
The interstate highways are, without question, the most important category of surface transportation facilities in America. They represent only about 1.1 percent of the nation’s total public road mileage and just 6 percent of all miles that come under state DOT jurisdiction. Yet they carry 24 percent of all vehicle miles of travel (VMT) throughout the

country, and that share has increased over the last two decades. In urban areas, interstate highways and other non-interstate freeways carry more than 35 percent of all VMT, yet the vast majority of this is not currently priced and is primarily dependent on state funding for maintenance, rehabilitation and ultimate reconstruction.^[5]

At latest count, the interstate system cost \$129 billion to complete over a period of about 30–35 years. Of this, \$114 billion came from the Federal Highway Trust Fund, largely funded through the federal motor fuel tax.

While the federal government paid 90 percent of the cost to build the interstate highways, today the average federal share of reconstruction and rehabilitation of interstates is about 45 percent. Our example project in Connecticut is being funded with about 80 percent federal dollars; however, that project will use about half of the entire federal annual allocation to the state of Connecticut for each of the next 10 years on a single 13-mile section of interstate funding reconstruction. The Connecticut DOT has a long list of other major reconstruction projects mostly on the interstate system that they have few options for funding. Just two of these projects on I-84, for example, will cost about \$4 billion. Every state has similar examples.

About 30 percent of total state DOT expenditures for highway capital, operations and maintenance are dedicated to the interstate system, yet interstate highways represent only 6 percent of the state-owned mileage. That’s about \$25 billion *per year*, of which about \$10 billion comes from federal sources.^[6] **At that pace, the states are already spending more on interstate maintenance and**



reconstruction every five years than the entire original cost to build the system! Every five years... and growing. So much for the argument that “they are already paid for.”

Facing the prospect of rebuilding the interstate system at several times its original construction cost, states increasingly realize they will not be able to turn to the federal government for a 90 percent share of the funds for rehabilitation. In fact, the federal role in transportation funding will likely decrease in the future and the states will need to look for their own new sources of transportation funding. Tolls will almost certainly play an increasing role in a number of states. But under current federal law, states will not be able to apply tolling — even all-electronic tolling — on existing, aging interstate highways that are not tolled today.

If it cost almost \$130 billion to construct the entire interstate highway system, what will it cost over the next 50 years to rebuild it? If we use a nominal “10–20 times” multiple, then the total price tag will be \$1.3–\$2.5 *trillion* over the next five decades. A very rough, crude estimate to be sure. But it is not

THE KEY TO OVERCOMING PUBLIC OPPOSITION TO TOLLING IS TO PRESENT A REALISTIC PICTURE OF WHAT THE FUTURE HOLDS.

unreasonable, recognizing that states are committing about \$25 billion per year to interstate highways already. At that pace, assuming a very nominal annual inflation rate of 2.5% per year, over the next 50 years (thru 2060) annual expenditures will total \$2.6 trillion. With the likely declining share of federal dollars, the states will be on the hook for more than \$1.8 trillion of that total. Where will it come from?

To say the least, this is a significant problem for the states... every state!!

STATES NEED NEW FUNDING OPTIONS AND FEWER FEDERAL RESTRICTIONS

As states become increasingly aware of the long-term unsustainability of their primary source of transportation funding, motor fuel taxes, they are desperately looking for new sustainable revenue options. In the future, America's interstate highways will likely demand a higher and higher proportion of state DOT dollars for maintenance, reconstruction and capital investment, given their prominence and age. It is also not simply a question of roads wearing out; capacity expansion will require enormous investment on our interstate routes, particularly in urban areas where congestion levels are rising.

Some states also have a problem with a large proportion of "through trips." Take, for example, I-10 in Mississippi. About 75 miles of I-10 pass through that state and a sizable portion of its traffic consists of pavement-damaging heavy trucks. A significant part of VMT on I-10 consists of through trips that pass entirely through the state. Of those through travelers, probably less than 25 percent stop to purchase motor fuel in the state of Mississippi.

Or consider I-95 in Rhode Island. Less than 50 miles of critical I-95 passes through the state; yet

with its location along the Boston-New York corridor, a very high proportion of traffic on I-95 passes entirely through the state, with probably less than one in five vehicles purchasing fuel within the state and contributing to Rhode Island fuel tax revenue. In recent months, Rhode Island transportation officials have made serious proposals about the need to toll its part of the interstate system.

If the portion of interstate reconstruction funding by the federal government continues to decline and more of the burden falls directly to the states, states like Mississippi and Rhode Island will have yet another reason to look for revenue sources other than fuel tax. They are not alone; the "through trip" problem is a major issue in smaller states throughout the country.

Federal restrictions on adding tolls to existing interstates should be eliminated. This is not to suggest that states should be "required" to add tolls; rather, they should simply be given the option. If the federal government will no longer be able to provide the lion's share of the cost to rebuild and expand our interstate highways (at a 10-20 times multiple of their original cost), then it should no longer take options off the table for the states. In other words, if the federal government won't help solve the problem, it should at least **"get out of the way."**

This is now a widely held view. A 2006 TRB special report titled "The Fuel Tax and Alternatives for Transportation Funding" said this:

Congress should liberalize the restriction in the federal highway program that now prevents states to use aid to build toll roads and instituting tolls on roads built with federal aid. In general, states should be allowed to impose tolls on existing roads that were built with federal aid, and they should be allowed flexibility in the design of toll systems.



The same report went on to say:

...existing roads require continuous funding for maintenance and periodic reconstruction. Moreover, congestion fees can greatly improve the efficiency with which capacity is used. Funding an expansion of capacity on a heavily traveled route with revenues generated by that route that are in excess of operating costs is a fair and reasonable means of accelerating improvements that directly benefit payers.”⁽⁷⁾

That landmark research report also called for the long-term development of a national mileage-based pricing system. Today, it is considered likely that the nation will ultimately move from a “per gallon” to a “per mile” basis of taxation, but this may well take 15 to 20 more years. The states simply do not have that much time to wait for the rebuilding and expansion of our interstate highways.

The National Surface Transportation Infrastructure Financing Commission also called for reducing restrictions on tolling of interstate highways in its report “Paying our Way” issued in 2009. One of the commission’s fundamental recommendations was to “expand the ability of states and localities to impose tolls on the Interstate System by allowing tolling of net new capacity.”⁽⁸⁾ The commission also recommended that states be allowed to toll existing interstate highways across all lanes to

fight congestion in major metropolitan areas of more than 1 million in population. The commission further recommended immediate research and planning for an ultimate national system of VMT pricing. This would effectively bring direct road user charging to all interstate routes.

Finally, the American Association of State Highway and Transportation Officials (AASHTO), the strongest national representative of state departments of transportation, has recently suggested the formation of a special task force to consider the increased use of tolling and, specifically, tolling of interstates. Among the goals for the proposed task force is “encouraging FHWA to expand tolling authority to include interstate applications with state flexibility in the use of any excess revenue.”⁽⁹⁾

DEALING WITH PUBLIC OPPOSITION

Perhaps the biggest hurdle to overcome before we will see widespread tolling of the interstates is public opposition. In recent years, much research has shown that public support for tolling has gradually increased, and opposition is not nearly as significant as elected officials fear. However, there remains strong aversion to tolling existing free roads, demonstrated time and again in public opinion polling. This opposition is real and needs to be taken seriously.

But the roots of this opposition lie in the public perception that these free roads, including free interstates, “are already paid for.” Our case study of the Connecticut Turnpike demonstrated that this is certainly not the case. The fact that more is spent on interstate system maintenance, expansion and reconstruction every five years than the amount spent to build the entire system is further indisputable evidence. The interstate system will need to be widened, maintained and substantially reconstructed over the next 50 years and to think

CONGRESS SHOULD QUICKLY ACT TO REDUCE OR ELIMINATE CURRENT FEDERAL RESTRICTIONS ON TOLLING OF EXISTING AND NEW INTERSTATE HIGHWAYS.

otherwise is tantamount to “putting our head in the sand.” We need the system for decades to come; we are kidding ourselves if we believe “it is already paid for.” The federal government conceived the system, paid 90 percent of its initial cost, but owns none of it. The states are left holding the bag; and they need to begin to stand up and demand less restrictions... and more options!

Unfortunately, it is easy to choose to forget or ignore the fact that we will need to reinvest in the next five decades. This challenge is compounded by the fact that elected officials, subject to the rigors of regular elections, also find it convenient to ignore costly long term problems until the next bridge collapses or congestion becomes so severe as to become a political liability.

The key to overcoming public opposition to tolling existing toll free roads is to present a realistic picture of what the future holds for the system. We must force opponents to confront these questions: How much will need to be spent over the next 25–50 years? What will happen if we do not reinvest in the system? What if the system becomes unusable or major links become so unsafe they must be closed?

There is a certain irony that Americans, including the trucking industry, place so much importance on the interstate system yet refuse to see that it has a finite life and needs to be kept available and expanded in the future. If this long term need is better quantified and the consequences of underinvestment are credibly computed and presented, public opposition to all-electronic tolling of existing free interstate routes will lessen.

Finally, public policy decisions on solving our long term problems with transportation finance cannot be based on public opinion alone. If polled, the public would not be in favor of taxes of any kind, but they are needed to finance badly needed public services. If based on public opinion alone, we might never have any form of taxation or finance. Everyone would like to have lower taxes, but not if it means closing schools or disbanding our national defense program. How would the public feel about the long term degrading of our critical interstate highway system?

Recent polling has shown growing support for increased use of direct user fees in lieu of tax increases. The idea of greater use of tolling, where motorists would pay only for the benefits they receive, might actually be a preferred method of establishing a new revenue stream dedicated to ensuring interstate mobility. But the key is demonstrating the long term need and the long term consequences of not solving the problem.

CONCLUSION

Tolls may well be an important “interim” step to fund the reconstruction, expansion, rehabilitation and maintenance of our critical interstate highway system. There are few options left to the states, which own the interstates and will be forced to find new sources of funding to pay this enormous cost. In the long term, a move to some form of national electronic pricing system, based on miles driven rather than gallons consumed, may help solve the problem. But the states are facing a major backlog of interstate reconstruction costs today and they need more immediate solutions.

Congress should quickly act to reduce or eliminate current federal restrictions on tolling of existing and new interstate highways. We are not suggesting that states must be required to add tolls; rather we should simply eliminate restrictions on their ability to do so if they so choose.

Tolling represents an ideal solution to this looming problem for a number of reasons:

- With all-electronic, non-stop toll collection, tolling can be easily added to interstate highways, at isolated locations or over long distances, with little or no traffic or safety impacts.
- Tolls can supply a sustainable, long-term revenue source, providing an opportunity to cover the long-term life cycle costs of our important interstate system.
- Adding tolls to long segments of interstate highways presents the opportunity to establish an ongoing source of revenue that can be dedicated to that particular section of roadway. This would open opportunities for long-term public private partnership agreements for both the reconstruction and ongoing maintenance and operation of our interstate highways: consistent with a new national emphasis on performance metrics and life cycle cost in future transportation policy.

The state departments of transportation see the potential benefits of tolling. They also see a declining federal role and increasing demand for investment in the rebuilding of our aging interstate system. It is time for the federal government, especially Congress, to begin listening. They may no longer be able to solve the financial problem; but they can choose to “get out of the way.”

- 1 NCHRP Project 20-24 (52), FY 2006. “Future Options for the National System of Interstate and Defense Highways,” Technical Memorandum No. 1, Page 17.
- 2 “Origins of the Interstate,” by Lee Mertz, US Department of Transportation.
- 3 New York Herald Tribune, February 16, 1936, taken from “origins of the Interstate.”
- 4 NCHRP Project 20-24 (52), FY 2006. “Future Options for the National System of Interstate and Defense Highways,” Technical Memorandum No. 1, Page 21.
- 5 “Highway Statistics 2008,” Federal Highway Administration, U.S., Department of Transportation. <http://www.fhwa.dot.gov/policyinformation/statistics/2008>, Table HM-10, Accessed September 14, 2010.
- 6 “Highway Statistics 2008,” Federal Highway Administration, U.S., Department of Transportation. <http://www.fhwa.dot.gov/policyinformation/statistics/2008>, Tables SF-12 and FA-4C, Accessed September 14, 2010.
- 7 TRB Special Report 285, “Fuel Tax and Alternatives for Transportation Funding,” Special Committee for the Long Term Viability of Fuel Taxes for Transportation Finance, 2006.
- 8 “Paying our Way,” (Executive Summary), Report of the National Surface Transportation Infrastructure Financing Commission, 2009.
- 9 “AASHTO Task Force on Tolling and Road Pricing,” October 28, 2010, Distributed at AASHTO Annual Meeting, Biloxi, MS, October 2010.

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