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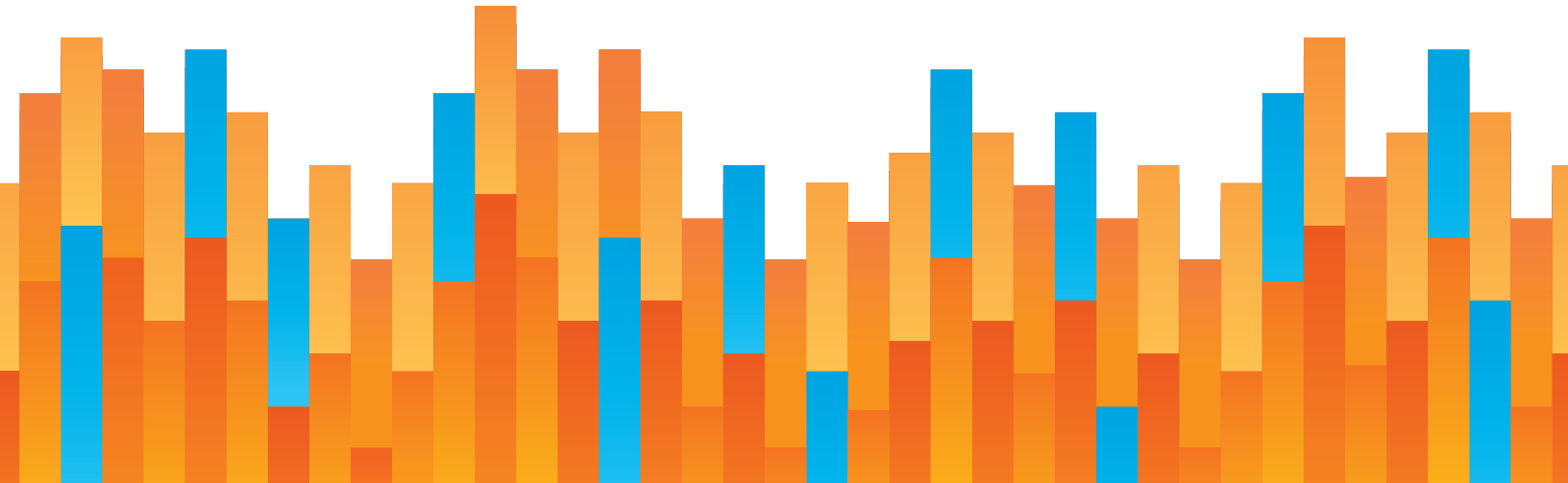
CAN INTERSTATE TOLLING BE POLITICALLY FEASIBLE? A CUSTOMER-FRIENDLY APPROACH

by Robert W. Poole, Jr.
March 2018



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PART 1

INTRODUCTION

A growing number of state departments of transportation have expressed interest in using toll revenue to finance the reconstruction and modernization of their aging Interstate highways. Their interest stems from the very large cost of such projects compared with projected federal and state fuel tax revenues. Feasibility studies have been carried out recently in a number of states, including Connecticut, Indiana, Minnesota, and Wisconsin.

Many legislators and some governors are hesitant to embrace this idea, based on concerns about the merits of taking this course and about potential public and political opposition. The concerns are real, but most or all of them can be addressed, if the program is designed to put the interest of highway users—motorists and truckers—first.

This policy brief suggests a politically feasible way forward.

PART 2

HIGHWAY USER AND TAXPAYER CONCERNS

The most common objections raised by various groups—primarily those representing highway users and those representing taxpayers—are the following five:

1. Toll booths and toll plazas are a source of congestion, accidents, and extra emissions; none of these are present with non-tolled highways *(toll booth congestion)*.
2. Tolling is an inefficient means of revenue collection, using up 20% to 30% of the revenue in collection costs, compared with 1% to 2% for fuel taxes *(high cost of toll collection)*.
3. Tolling would represent a large new source of revenue for spendthrift governments, that would likely divert portions of the new revenues to unrelated purposes *(toll roads as cash cows)*.
4. Since vehicles burn fuel while driving on toll roads, charging tolls on top of existing gasoline and diesel taxes would be unfair *(double taxation)*.
5. If a major highway is tolled, some motorists and truckers will avoid using it, congesting parallel roads *(traffic diversion)*.

Those are serious concerns, and there is some validity to each of them, as we can observe from 20th century toll roads. But this is a new century, with new technology and some new approaches to tolled facilities.

Concern #1, toll booth congestion, was valid for nearly all 20th century toll roads. But today's all-electronic tolling (AET) is in the process of eliminating toll booths and toll plazas across the country. AET relies primarily on pre-paid accounts and windshield-mounted transponders to collect tolls at highway speed. For those without a transponder, license-plate imaging records the vehicle's passage, and the tolling system generates an invoice. Some toll systems in California, Colorado, Florida, Massachusetts, Texas, and Virginia have already *eliminated all of their toll booths and plazas*, and this conversion to AET is underway in nearly all states with toll roads.

If a state decides to introduce toll-financing to rebuild and modernize its aging Interstate highways, there is no good reason to use toll booths or toll plazas, since AET is far less costly to implement and operate. It also avoids the congestion, accidents, and emissions that accompany toll booths and plazas.

AET uses two technologies to eliminate the need for cash payments: transponders and video cameras. The large majority of customers open a tolling account and make use of a windshield-mounted transponder. When the vehicle approaches an overhead gantry, a sensing device queries the transponder and obtains the customer's account number. That permits the toll to be charged to that account. Those without transponders (occasional or out-of-state users) have their license plate information read by a video camera, which enables them to be billed. (Cross-border electronic toll transactions are already addressed among the states in the Northeast and Midwest that are members of E-ZPass, and this kind of cooperation can readily be expanded.)

AET also addresses the high cost of toll collection. Studies of 20th-century cash tolling found collection costs often consumed 20% to 30% of the toll revenue. However, now that toll roads are in the process of converting from cash to AET, that percentage is coming way down. A 2016 study by the Congressional Research Service[1] reported an average cost of toll collection in the range of 8% to 11% of the revenues. And a peer-reviewed Reason Foundation study of three relatively new toll systems using AET and a streamlined business model found that transponder tolling cost ranged from 4% to 9% of revenues. The authors

[1] Kirk, Robert S. "Tolling U.S. Highways." Congressional Research Service. Aug. 26, 2016. Report R43575.

of that study estimated that, on a larger scale, AET toll systems with streamlined business models could achieve collection costs in the 5% range.[2]

That leaves three concerns: diversion of toll revenues (cash cows), double taxation, and diversion of traffic. Here is where state *policy decisions* can make a big difference. As a thought experiment, suppose Interstate tolling were limited *by law* to the following principles:

- Toll revenues could be used *only* for the capital and operating costs of the rebuilt-and-modernized Interstates on which the tolls are charged;
- Tolls for a rebuilt corridor would be charged *instead* of fuel taxes, not in addition to fuel taxes;
- Tolling would begin only *after* a corridor was rebuilt and modernized, similar to what occurs with a brand new toll bridge.

If those three policies were enacted into law, the first would address the *cash-cow* concern, since the tolls could not be used as a general transportation revenue source. The second would prevent *double taxation* by giving toll customers rebates on the fuel taxes they paid for the miles driven on the tolled replacement Interstates. The toll revenue would be the sole support for the tolled road, as is the usual practice for existing toll roads, which do not receive fuel tax funding. And the third policy would reassure highway users that they would only be paying tolls once they got a *much better highway* than they had before.

The concern about *traffic diversion* cannot be eliminated, but it can be *reduced*. Traffic engineers know that the higher the toll, the larger the fraction of vehicles that divert to parallel routes.[3] Toll roads that divert a lot of toll revenue to other uses (e.g., the Pennsylvania Turnpike) charge higher tolls than those that use the tolls solely for the toll road itself. So tolls based on the above principles would likely be lower than those of some toll roads today. In addition, if motorists and truckers also got rebates on the fuel taxes incurred while driving on the tolled corridor, their *net cost* would be less than the amount of the toll. That would further reduce traffic diversion.

[2] Fleming, Daryl S., et al. "Dispelling the Myths: Toll and Fuel Tax Collection Costs in the 21st Century." Policy Study 409. Reason Foundation. November 2012.

[3] Wilbur Smith Associates. "I-70 Dedicated Truck Lanes Feasibility Study, Attachment A, Sketch Level Traffic and Revenue Study." June 2010.

Some states (notably Texas) provide frontage roads alongside most or all toll roads. These give local motorists, who would use the toll road only for relatively short trips, a no-charge option in the same corridor. That is one way to address traffic diversion in urban and suburban areas. Another is to offer frequent-user discounts on toll rates.

PART 3

ARE THOSE CUSTOMER-FRIENDLY POLICIES REALISTIC?

The 2018 White House infrastructure proposal calls for removing the federal ban on Interstate tolling. Even if that provision does not gain congressional approval, toll-financed Interstate reconstruction is possible under a three-state pilot program enacted last decade by Congress. In addition, the Federal Highway Administration has approved Rhode Island making use of a provision of Sec. 129 (of Title 23, U.S. Code) that allows non-tolled bridges on Interstates to be replaced with toll bridges. In any case, a state would have to enact tolling provisions consistent with federal requirements. And in those states where tolling is not currently authorized by law, a tolling *statute* would have to be enacted to pursue toll-financed Interstate reconstruction and modernization.

An Interstate tolling statute could easily include the provision that the toll revenues be used solely for the capital and operating costs of the replacement Interstates, with another provision allowing tolls to be charged on an Interstate corridor only after that corridor is rebuilt and modernized (potentially with additional lanes). Those are policy choices that are clearly within the legislature's remit to enact, and would not conflict with any federal law.

The more difficult question concerns the proposal that highway users pay only tolls—and not fuel taxes—on the rebuilt Interstate corridors. This provision could only apply to *state* fuel taxes, since federal fuel taxes would continue unless Congress decided otherwise. Three relevant questions are the following:

1. Have any states enacted fuel tax rebates for toll road users?
2. Is there a simple and low-cost way to implement fuel tax rebates?
3. Would providing those rebates be a net loss for the state DOT's highway budget?

The answer to the first is yes. Both Massachusetts and New York State have long-standing fuel tax rebate programs, open to users of the Massachusetts Turnpike and the New York Thruway. Although Massachusetts has recently converted fully to AET for the Turnpike, its "Fuels Excise Refund Program" still operates in a paper-intensive mode.[4] Those seeking rebates must file a paper form and include paper copies of toll receipts (from a transponder account) and sales receipts for fuel used on the Turnpike. This cumbersome prospect likely limits rebate requests to trucking company fleets.

To answer the second question, a far simpler and more user-friendly approach is to include the rebate calculation in the tolling software (which is generally developed by a technology contractor). Via either the transponder account or the license plate number, the tolling system knows the vehicle owner and the vehicle type. It also knows the number of miles driven on the tolled Interstate, and uses these pieces of information to calculate the toll charged to the vehicle owner. In addition, since it knows the vehicle type, it can consult a table in the software to find the EPA rating of highway miles per gallon (mpg) to estimate the gallons of fuel used in driving those miles. That would approximate the state fuel tax incurred while driving those miles. The resulting fuel tax amount can be sent to the motor vehicles department as a monthly list of fuel-tax rebates owed to specific toll road customers. At least initially, it would be far simpler to limit the availability of fuel tax rebates to residents of the state, except probably for trucking companies, which already have to comply with the International Fuels Tax Agreement, which adjusts commercial fuel tax receipts among states.

What about the impact of fuel-tax rebates on the state DOT's budget? In fact, it is likely that the state DOT would come out ahead after granting rebates of state fuel taxes for

[4] "Massachusetts Turnpike Fuels Excise Refund Program." https://www.mass.gov/service-details/massachusetts-turnpike-fuels-excise-refund-program (accessed Feb. 23, 2018).

miles driven on the tolled Interstate. The reason for this is simple: the toll rate needed to pay for rebuilding, operating, and maintaining an Interstate is almost always going to be greater on a per-mile basis than the state fuel tax revenue generated per mile of travel. That's because *premium* highways such as the Interstates cost more to build, operate and maintain than the *average* highway. That is one important reason why states today cannot afford to rebuild and modernize most of their Interstates—fuel taxes don't generate enough revenue to do these very costly mega-projects.

In addition, introducing tolling on a state's Interstates will help to address the pending problem with the unsustainability of per-gallon fuel taxes. Increasing vehicle fuel efficiency means cars and trucks can go farther on a gallon of gas than in prior decades, and with electric vehicles also becoming more common, fuel tax revenues are likely to shrink, rather than grow. Per-mile tolls are a direct user fee that will apply regardless of future trends in vehicle propulsion, and toll revenues keep pace with the growth in vehicle travel, unlike fuel taxes.

From the state DOT's standpoint, having tolls pay for all the costs of its most expensive highways frees up its federal and state fuel tax revenue (minus the state fuel tax rebates to a fraction of its highway users) to sustain all the rest of its highway miles. That is clearly a positive result for the state DOT—a net improvement over the status quo.

PART 4

ADDITIONAL CONCERNS OF TRUCKING COMPANIES

During a Reason Foundation research project in 2015, senior trucking industry executives expressed additional concerns about expanded use of tolling. Those were as follows:

- Confidentiality of routing and billing information;
- A single monthly invoice, rather than multiple ones from various toll roads;
- Predictable toll rates;
- Different rates and transponders in every state;
- Higher cost compared with current fuel taxes; and,
- Being able to pass along toll charges to shippers.

On the other hand, of course, many trucking companies already use toll roads, where the time savings and reliability benefits make it worth their while to pay the tolls.

The Reason report responded to each of the above concerns.[5] During this research, we learned that two vendors approved by the American Trucking Associations—PrePass and Bestpass—already offer trucking companies a consolidated (and confidential) monthly toll

[5] Poole, Robert W., Jr. "Truck-Friendly Tolling for 21st Century Interstates." Policy Study No. 446. Los Angeles: Reason Foundation. July 2015.

bill for all their toll transactions anywhere in the United States. Those companies also maintain up-to-date databases of current toll rates. They also recently began to offer a universal transponder that is compatible with AET systems nationwide.

The itemized tolling invoice makes it *possible* for trucking companies to add toll charges to their conventional charges to shippers. During previous times of very high fuel prices, major trucking companies added fuel surcharges to their bills to shippers. Thus far, the industry has not taken advantage of the itemized toll bills provided by PrePass and Bestpass thanks to AET. However, this change will become increasingly feasible in coming years as existing toll roads complete their ongoing transitions to AET and states begin using toll financing to rebuild aging Interstates.

As for "higher cost compared with current fuel taxes," the best a state can do is to offer rebates on state fuel taxes, as noted above, for miles driven on the reconstructed tolled corridors. That means the cost to use a rebuilt Interstate financed by user-friendly tolls (with a state fuel tax rebate) would be less than the current cost to use legacy toll roads like the Pennsylvania Turnpike that charge high tolls partly due to diverting revenue elsewhere and don't offer rebates on state fuel taxes. That is not the trucking industry's ideal world, but its dream of a huge federal fuel tax increase dedicated to rebuilding and modernizing aging Interstates is highly unlikely. (If a significant increase in federal fuel tax rates should somehow be enacted, it would almost certainly be divided up among the more than 100 highway and transit programs currently funded via the Highway Trust Fund.)

In addition, states with Interstate corridors that are major truck routes would have the option of adding dedicated truck lanes in those corridors, financed by customer-friendly tolling. If the state also allowed longer combination vehicles (LCVs), dedicated truck lanes would offer significant productivity increases (more ton-miles per driver-mile) as well as environmental benefits (fewer emissions per ton-mile).[6] Four states traversed by truck-intensive I-70 took part in a federally funded Corridors of the Future study that recommended rebuilding that corridor—from Kansas City on the west to the eastern border of Ohio—with dedicated truck lanes open to LCVs, with the entire rebuilt corridor financed via toll revenues.[7]

[6] Samuel, Peter, Robert W. Poole, Jr. and Jose Holguin-Veras. "Toll Truckways: A New Path Toward Safer and More Efficient Freight Transportation." Policy Study No 294. Los Angeles: Reason Foundation. June 2002.

[7] HNTB and Wilbur Smith Associates. "I-70 Dedicated Truck Lanes Feasibility Study, Phase 2." 2011.

PART 5

CONCLUSIONS AND RECOMMENDATIONS

Any state DOT considering toll-financed Interstate highway reconstruction and modernization must address the political feasibility of gaining acceptance from the state's governor and legislators. This will require persuading the state's taxpayers and highway users that such a program is in their interests as motorists and trucking companies.

This policy brief has suggested several principles that could be incorporated into an Interstate highway finance and modernization bill. Such legislation could include:

1. Authorizing the governor or the state DOT to seek federal permission for toll-financed Interstate reconstruction and modernization;
2. Authorizing the state DOT to develop a several-decade plan for toll-financed reconstruction and as-needed widening, prioritizing corridors based on (a) age and condition, and (b) need for additional capacity;
3. Requiring that all toll collection on such corridors be carried out via all-electronic tolling (AET);
4. Requiring all toll revenues from toll-financed Interstate corridor modernization to be used only for the capital costs (including debt service) and operating and maintenance costs of the rebuilt corridors;

5. Requiring that customers of such corridors receive a rebate on their state fuel tax for tolled miles driven on the corridors; and,
6. Requiring that tolling on a rebuilt corridor begin only after each segment of the corridor is completed and ready for vehicle use.

In considering the gains in political feasibility that such a set of reforms could bring about, it is noteworthy that the national board of AAA—America's largest highway user organization—endorsed the core customer-friendly provisions (numbers 4, 5, and 6) at a meeting of its board in September 2015.[8] Thus, it is likely that the AAA affiliate in a given state will be supportive of policies listed above.

In sum, Congress appears unlikely to either fund a major program to reconstruct and modernize America's aging Interstate highways or to approve a large federal fuel tax increase dedicated to this purpose. Toll financing represents the best *available* way to pay for such a program, and the customer-friendly policies proposed in this policy brief should make such a program politically feasible.

[8] Poole, Robert W. Jr. "AAA Opens Up to MBUFs and Value-Added Tolling." *Surface Transportation Innovations.* No. 153. July 2016.

ABOUT THE AUTHOR

Robert W. Poole, Jr. is director of transportation policy and the Searle Freedom Trust Transportation Fellow at Reason Foundation, a national public policy think tank based in Los Angeles.

His 1988 policy paper proposing supplemental privately financed toll lanes as congestion relievers directly inspired California's landmark private tollway law (AB 680), which authorized four pilot projects including the highly successful 91 Express Lanes in Orange County. About two dozen other states have enacted similar public-private partnership legislation. In 1993 Poole oversaw a study that introduced the term HOT (high-occupancy/toll) Lane, a concept which has become widely accepted since then.

Poole has advised the Federal Highway Administration, the Federal Transit Administration, the White House Office of Policy Development and National Economic Council, the Government Accountability Office (GAO), and the California, Florida, Georgia, Indiana, Texas, Utah, Virginia, and Washington State Departments of Transportation. He served 18 months on the Caltrans Privatization Advisory Steering Committee, helping oversee the implementation of AB 680. He was appointed by Gov. Pete Wilson as a member of California's Commission on Transportation Investment in 1995-96. He has also served on transportation advisory bodies to the California Air Resources Board and the Southern California Association of Governments, including SCAG's REACH task force on highway pricing measures.

Poole is a member of the board of the Public-Private Partnerships (P3) division of ARTBA and a member of the Transportation Research Board's Managed Lanes Committee. From 2003 to 2005, he was a member of the TRB's special committee on the long-term viability of the fuel tax for highway funding. In 2008 he was a member of the Study Committee on Private Participation in Toll Roads, appointed by Texas Gov. Rick Perry. In 2010 he was a member of the Washington State DOT's Expert Review Panel on the proposed Eastside Managed Lanes Corridor. Also in 2010, he served as a transportation policy advisor on the transition team of Florida Gov. Rick Scott.

Poole is the author of dozens of policy studies and journal articles on transportation issues. His book, *Rethinking America's Highways*, will be published by the University of Chicago Press in spring 2018. Poole's popular writings have appeared in national newspapers, including *The New York Times* and *The Wall Street Journal*; he has also been a guest on such programs as "Crossfire," "Good Morning America," and "The O'Reilly Factor," as well as ABC, CBS and NBC News, NPR and PBS. He writes a monthly column on transportation policy issues for *Public Works Financing*, and produces the monthly e-newsletter, *Surface Transportation Innovations*. *The New York Times* has called him "the chief theorist for private solutions to gridlock."

Poole received his B.S. and M.S. in mechanical engineering at MIT and did graduate work in operations research at NYU.