

Who's Going to Pay for New Highways?

Our Interstates are wearing out. Here's what we need to do to fix them.

Robert Poole | Jan. 6, 2015 10:00 am

Most of us take Interstate highways for granted. If you're under 30, they have always simply been there: the long dull stretches of open road on family road trips, the clogged arteries of your daily commute. But prior to the 1960s, highways as we know them today didn't exist. There were hardly any long-distance freeways without cross traffic or with safe separation between opposing lanes. Most commuting was done on boulevards with stoplights every half mile or so. The Interstates brought faster, safer travel by car and truck to all of America. Today, these 47,000 miles of highway handle an amazing volume of traffic. A quarter of all vehicle-miles traveled take place on Interstates, even though they account for just 2.5 percent of all U.S. highway lane-miles.

Unfortunately, we can't assume the Interstates will always be there. Even well-designed and well-maintained highways eventually wear out and need to be rebuilt. The Interstates were conceived for a 50-year service life if properly maintained (and not all of them have been). Because nearly all were built between 1960 and 1990, much of the system will need rebuilding over the next few decades. What's more, many Interstate corridors, both rural and urban, are congested today and will be more congested in the future. Road pricing could help, but as the economy and population keep growing, our transportation infrastructure must grow along with it: We're going to need more lanes.

The huge problem that our politicians have not yet taken seriously is how to pay for what amounts to a second-generation Interstate system. Last year, on behalf of Reason Foundation—the nonprofit that publishes *reason*—I carried out a detailed study to estimate the cost of rebuilding and selectively widening the Interstate system. For each of the 50 states and the District of Columbia, I used the best available estimates of the cost per lane-mile to reconstruct existing Interstate lanes. These calculations took into account the different types of terrain in each state (flat, hilly, or mountainous) as well as construction cost differences among the states. Then I used conservative state-specific projections of the growth rates of car and truck travel to figure out which Interstates would need additional lanes, in which decade they would need them, and how many lanes they would need. This included adding truck-only lanes on selected Interstates with very high truck volumes over the next 40 years.

A project this massive turned out to cost \$983 billion. That figure is the net present value of all the construction projects that would need to occur between 2020 and 2040, in 2010 dollars. In round numbers, we're talking about a trillion dollars. How on Earth are we going to pay for that?

Those with long memories assume the feds will pay. After all, they paid the first time around, didn't they? But that's a pipe dream. The current debate in Washington, D.C., is over how to bail out the federal Highway Trust Fund, which is nearly out of money, not the best way to spend an additional trillion dollars. The Trust Fund until recently was supported solely by highway user taxes—primarily, federal taxes on each gallon of gasoline and diesel fuel sold. But even if Congress had the political will to enact a large increase in those fuel taxes, powerful interest groups would insist that any revenues be divided up among scores of existing federal highway and transit programs (which include bike paths, sidewalks, and recreational trails), leaving only a fraction for a trillion-dollar Interstate makeover. If we're ever going to rebuild and modernize the Interstates, we need to come up with a new way to pay for it.

How We Got Into This Mess

From the earliest years of the United States, the role of the federal government in building highways (and making other "internal improvements") was a subject of controversy. The Constitution called for a postal system and "post roads," but such early presidents as Thomas Jefferson, James Madison, and Andrew Jackson did not interpret this as giving Congress the power to build roads or canals and vetoed bills to do such things. The one exception was Jefferson's approval of a bill to fund a "national road" (as a post road) to open up the Northwest Territories. Aside from that exception, 19th century highways were largely developed by private businesses and paid for with toll revenues.

By the 1890s, bicyclists and farmers had started working together to call for paved roads linking the countryside to cities. The resulting Good Roads Movement found an ally in the Department of Agriculture, which got money from Congress in 1893 to create an Office of Road Inquiry to research the extent of paved roadways already in existence. In 1896, the Post Office launched a new service called Rural Free Delivery so that farmers wouldn't have to travel into town to pick up their mail at a post office. There were 383 such routes in operation by 1899. Soon, the Post Office became an advocate of federal money to pave these routes. A number of states began establishing highway departments, and the now-expanded Office of Public Roads provided technical advice to these new agencies on pavement and funding.

By 1915, a joint congressional committee on federal aid for



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post roads proposed a new federal program, which passed the following year. It provided modest sums for paving selected post roads, to be matched 100 percent by state highway departments. With that as a carrot, state legislatures began creating highway funding programs. Oregon was the first to implement a per-gallon tax on gasoline, as a kind of user fee to pay for road building, in 1919. All 48 states had enacted motor fuel taxes by 1929, nearly all of them dedicated to highways.

But as tax revenues shrank during the Great Depression, the U.S. Treasury Department was forced to scrounge for funds. The Treasury noticed that state gas tax revenues were holding up well and pointed this out. Congress responded by using the Revenue Act of 1932 to impose a 1-cent-per-gallon tax on motor fuel, but as a general federal revenue source not tied to road building. The Bureau of Public Roads (BPR) continued to make modest grants for post roads, but complaints that many states were diverting their gas tax revenues to non-highway uses led to a law requiring the BPR to withhold post road money from states that diverted highway user taxes. After World War II, Congress increased the federal gas tax to 2 cents per gallon to help pay for the Korean War.

During the 1920s and '30s, a number of toll bridges were financed and built around the country, mostly by newly created public authorities such as the Triborough Bridge & Tunnel Authority in New York City, although some were investor-owned projects (e.g., most of the toll bridges in the San Francisco Bay Area other than the Golden Gate Bridge). The first "superhighway" of the 20th century was developed by the newly created Pennsylvania Turnpike Authority. Unlike old-fashioned highways, the Turnpike was built to much higher standards. It featured two lanes in each direction separated by a wide median; it had shallower grades, many tunnels, and banked curves enabling higher speeds; and it required no stops anywhere along its route. The first 160-mile segment, connecting Pittsburgh and Harrisburg, opened in 1940 and was a huge success. People were amazed that the trip could now be made in just two and a half hours, compared with the six hours it took on two-lane U.S. 30.

After the war, superhighway turnpikes became all the rage, with similar tolled highways built in Connecticut, Massachusetts, Maine, New Hampshire, New York, New Jersey, Ohio, Florida, Oklahoma, Kansas, and elsewhere. Those turnpikes were either in operation or under construction by the time Congress started debating a new federal superhighway program. On taking office in 1953, President Eisenhower made this a top priority. He appointed the Clay

Committee, which called for a toll-financed system like the emerging state turnpikes, but the BPR and many in Congress strongly opposed tolls—partly on ideological grounds and partly because smaller populations in the South and West made them doubtful that toll revenues there would be sufficient.

The eventual result was the Federal Aid Highway Act of 1956. It authorized the creation of a 41,000-mile system funded by a 3-cent-per-gallon federal gas tax (and another on diesel fuel). The revenues would be deposited in a newly created Highway Trust Fund, to be used only for building the Interstates. For states to get the money, they would have to put up a 10 percent match from their highway budgets. The system was expected to be completed within 15 years, and the taxes would then end.

Once Congress got used to allocating large sums of dedicated revenues for state road building every year, however, the program morphed from temporary to permanent.

'Highway' Funds

It took a lot longer than expected to complete the planned Interstate system, partly because Congress had added urban Interstates to the 1956 bill to win the support of mayors and urban members of Congress. But those huge highways cutting through existing neighborhoods prompted freeway revolts in many cities, which led to some links not being constructed and much higher costs for the ones that did get built. Congress increased the federal gas tax to 4 cents per gallon in 1959 and has routinely authorized the tax's continuation each time it was set to expire.

At each reauthorization, Congress came up with additional uses for the money: state highways linked to the Interstates, maintenance as well as construction funds, and facilities to enable buses to use urban Interstates (bus lanes, park and ride lots, etc.). In 1973, Congress allowed states to veto urban Interstate projects and build mass transit systems instead, though they would have to use federal general funds (since the gas taxes were still restricted to highway use). In 1982, the floodgates opened for spending highway funds on public transit. Highway advocates and Transportation Secretary Drew Lewis wanted to double the gas tax, but President Ronald Reagan said he would veto such a bill. Once again, urban mayors came to the rescue, persuading their members to support the legislation if 20 percent of the 5-cent-per-gallon increase was dedicated to mass transit. The revised bill passed and Reagan signed it.

Each successive reauthorization of the program since 1982 has expanded it further, eviscerating the original users-pay/users-benefit principle by spending "highway user tax

revenue" on a large array of other purposes: transit capital and operating costs, sidewalks (Safe Routes to School), bike lanes (Complete Streets), recreational trails, landscaping, highway safety grants, environmental mitigation, historic preservation, etc. This all-things-to-all-people approach enables members of Congress to get credit for funding things that appeal to many constituent groups. But it is also very likely part of the reason voters overwhelmingly oppose any further increases to the federal gas tax, which has remained unchanged at 18.4 cents per gallon since the 1991 reauthorization act. Voters grumble about chronic congestion and potholed roads but have very little faith that giving the feds more money will do anything meaningful to improve their travel.

Back to Tolls?

Gridlock in Congress over the Highway Trust Fund and a gas tax increase makes it urgent to consider alternative approaches to pay for the trillion-dollar Interstate reconstruction and widening program. Topping the list is reviving a version of the original Pennsylvania Turnpike model: financing the program via toll revenues.

Here the word *financing* has a very particular meaning. Most highways today are "funded" out of annual tax revenues. That's different from just about all other major infrastructure, including airports, electric utilities, pipelines, railroads, and seaports. Projects like those are financed with long-term revenue bonds issued up front to cover a large majority of the capital costs of new or rebuilt facilities. That means the facilities are built when they are needed, instead of decades later, with users paying back the bonds over time as they use and benefit from the improved infrastructure. It's similar to financing the purchase of a new home by taking out a mortgage.

Would this idea work for Interstates? I assessed the financial feasibility of that strategy in my 2013 Reason Foundation study. Assuming a baseline toll rate of 3.5 cents per mile for cars and 14 cents per mile for heavy trucks, I used the same state-by-state traffic projections relied on for the widening analysis to estimate toll revenues over a 35-year period. To avoid repeating a mistake made with gas taxes, I assumed annual inflation adjustments based on the Consumer Price Index. The results were surprisingly positive. Those baseline toll rates would be enough to pay for the capital, operating, and maintenance costs of a modernized Interstate system in nearly two-thirds of the states. Somewhat higher rates would be needed in high-cost states like California and New York. In the end, only six states with high construction costs due to mountainous terrain and low revenue estimates due to lighter traffic were determined not to be toll feasible, including Alaska, Montana, and Vermont.

Given these results, why the decision to reject toll financing back in 1956? The answer is that

earlier studies happened before the huge population migrations to the South and West over the past 50 years. America's commercial and industrial focus is no longer just the Northeast and the Midwest. Sunbelt metro areas such as Atlanta, Dallas, Houston, Las Vegas, Los Angeles, Miami, Phoenix, San Diego, San Francisco/Silicon Valley, and Seattle are now major players, rivaling Boston, Chicago, Philadelphia, and New York. They are also where the larger share of growth is expected over the next 50 years. Those demographic and economic realities explain my much more optimistic assessment of Interstate toll feasibility. Toll financing requires heavy traffic to support it.

There is also an important political implication of these findings. All but six states could finance Interstate modernization on their own, without federal funding. Few people realize that although federal gas taxes paid for 90 percent of the initial construction costs, these highways are owned by the states and operated by state Transportation departments. Since Congress has no realistic strategy for coming up with the trillion dollars an Interstate modernization program would require, states are going to need to step up to the plate.

There's only one obstacle to states taking on this responsibility. The original 1956 legislation still prohibits tolls on "existing" highway lanes. But it's perfectly legal for states to (1) convert carpool lanes to express toll lanes, and (2) add tolled lanes to the existing free lanes on Interstates.

In 1998, Congress enacted a pilot program to test tolled Interstate reconstruction. The law permits three states to each rebuild one Interstate highway using toll financing. Missouri, North Carolina, and Virginia won the three slots, but none has been able to gather enough legislative or public support to implement its project. North Carolina, for example, decided that Interstate 95 was its most-urgent candidate for reconstruction and widening. But people who live near I-95 objected strenuously to being singled out to pay tolls when their fellow citizens in, say, Charlotte would be able to use Interstate 77 for free. Virginia, after a similar backlash, proposed charging tolls only at the border with North Carolina, which would exempt all local users of I-95 from paying tolls. However, this would reduce expected revenues to below the amount needed to reconstruct the highway.

The trucking industry has been the primary opponent of expanded use of tolling on Interstates. It has some valid reasons to be concerned. Several of the states that applied for slots in the pilot program were intending to charge tolls far in excess of what would be required to reconstruct the single Interstate authorized under the program. Pennsylvania was rejected twice because it was clear its proposed tolling of Interstate 80 was intended not just to refurbish that one highway but also to generate about half a billion dollars per year to bail

out transit systems across the state. Other highway user groups, such as AAA, have also mounted opposition to Interstate tolling. AAA's New York division has litigation in the works against the Port Authority of New York and New Jersey, for example, over the agency's use of toll revenues to rebuild the World Trade Center.

Better Tolls

Over the years, highway user groups have raised a number of objections to increased use of tolling. The trucking industry's Alliance for Toll-Free Interstates (ATFI) equates tolling with long lines at toll plazas, vehicle emissions, and accidents. But any new tolling launched today would use all-electronic tolling, which doesn't require booths or plazas. As with the growing number of cashless toll roads already in use today, all tolling would take place at highway speed via overhead gantries, with most paying via dashboard transponders (like E-ZPass) and the rest being billed based on a video image of their license plates. ATFI also claims toll collection costs would consume 20 percent to 30 percent of toll revenues, which was true of old-fashioned cash tolling. But electronic systems designed from scratch could bring costs down to about 5 percent of revenues.

Opponents do have four legitimate concerns, which any feasible Interstate tolling regime would have to address:

1. There would be no value added for users if tolls were simply imposed on existing, unimproved lanes.
2. States could divert toll revenue to other purposes.
3. People would have to pay fuel taxes and tolls for the same highway, which would in effect be double taxation.
4. Traffic would be diverted to parallel roadways.

To gain political support, a toll-financed Interstate reconstruction plan must deal with all four of these concerns.

First and foremost, it must deliver real value for the new toll dollars. That means tolling of an Interstate corridor would begin only after the corridor was rebuilt and widened (if needed). Second, toll rates would only be enough to cover the capital and operating costs of the new facility. There would be no "surplus revenue" to be diverted to other uses. Third, motorists and truckers would pay only the toll on the reconstructed corridors; they would get rebates

for the amount of fuel taxes they paid for any tolled miles driven. (That sounds complicated but is a rather simple software exercise for the tolling system.) And fourth, since we know that higher toll rates divert more traffic to alternative roadways, prohibiting revenue diversion would minimize traffic diversion, because the toll rates would be relatively low. I have dubbed this set of policies "Value Added Tolling."

A Step Toward Devolution

When the time comes to reauthorize the federal program next year, Congress should allow all 50 states to toll-finance the reconstruction and modernization of all their Interstates, subject to abiding by the Value Added Tolling policies. A bipartisan tolling flexibility measure along these lines (though with somewhat less stringent restrictions) nearly made it into the Senate reauthorization bill in 2012, and efforts are underway to craft a similar measure for 2015.

The initial reaction of congressional staffers is to question the need for such a measure, since none of the three states granted slots in the current pilot program has won legislative support to implement toll-financed reconstruction. But this illustrates two basic flaws with the pilot program. First, it only allows three states to try something that we all know is politically difficult. If all 50 states had this permission, the odds that one or two "pathfinder" states would put together majority support would be significantly greater. Second, it forces states to select a single Interstate for toll-financed reconstruction. A broader measure would instead encourage a responsible state department of transportation to come up with a 20-year plan to reconstruct and modernize all its Interstates, so everyone would know their turn would come—to pay tolls, but also to benefit from a greatly improved Interstate.

As of this writing, a number of forward-thinking state transportation departments are part of a coalition promoting this kind of toll flexibility, and various highway construction groups also support the idea. Informally, some AAA people have expressed interest in Value Added Tolling, though the organization has not yet taken a position on tolling flexibility.

Unfortunately, the trucking industry is still taking the anti-tolling position of its front group, ATFI, despite the fact that major trucking companies are regular users of tolled Interstate and non-Interstate highways, such as Florida's Turnpike. If AAA ends up supporting tolling flexibility (conditional on something like Value Added Tolling), the trucking coalition would no longer be able to talk as if it represented highway users across the board.

This would represent a substantial move back toward the original users-pay/users-benefit principle that has largely been discarded under the current federal highway and transit program. It's also the only game in town for ensuring that these critically important highways can be modernized to continue their vital function in the 21st century, notwithstanding the

liberal dream of shifting freight from truck to rail and people from cars to high-speed trains. What's more, shifting responsibility for Interstate modernization from the federal government to the states would represent a significant (and achievable) first step toward devolving the overgrown federal transportation program.

And since toll-financed Interstates are ideal projects for long-term public-private partnerships, this plan could be used to begin converting major highways from the state-socialist enterprises they are today into market-oriented utilities, like those that furnish us with everything from electricity to the Internet. For libertarians, what's not to like?