With the Interstate Highway System now almost complete, is it time for the federal government to remove itself from roadway funding?

A Road Policy for the Future

By Gabriel Roth

On February 5, 1926, Sir Edgar Harper, economist and Chief Valuer to the Inland Revenue (the U.K. tax authority), wrote in *The Times* of London about the "Road Fund" that had been set up in 1909 to provide money for improving Britain's road system. He explained that the Road Fund "is not fed by taxation in the strict sense. It provides machinery by which the owners of motor vehicles in combination and under State guidance are enabled to spend money on roads for their mutual benefit."

For Americans, Harper's words should raise a question: Does the U.S. system of highway funding enable the owners of motor vehicles "to spend money on roads for their mutual benefit"? Or, are there better ways of enabling road users to obtain the roads for which they are prepared to pay?

ROADS IN AMERICA

Road financing was not a high priority before the American Revolution. The main need was for labor to construct and clear rudimentary roads, and that was obtained (under the English Road Law of 1515) by requiring all eligible males to work on the roads for a specified number of days (typically five or six) each year. Even after the American Revolution, there was little support for changing that system because, for long-distance transportation, river navigation was given much higher priority by the leaders of the new nation. In addition, many believed that government control of transportation would lead to poor management and wasteful use of public funds.

In the absence of government funding, privately financed toll road companies took the lead in the development of intercity roads. They became known as "Turnpike" companies because they controlled access to the roads with long horizontal wooden shafts, or "pikes," that would be "turned" upwards to permit entry. A company chartered by Pennsylvania in 1792 financed the first U.S. turnpike road, connecting Philadelphia and Lancaster. Other roads quickly followed.

In 1800, 69 private road companies had been chartered in the eastern states. By 1845, that number had risen to 1,562 and the total length of their roads exceeded 10,000 miles. Relative to the size of the economy at that time, such investment in roads was substantial. In the United States, the comparative magnitude exceeded the public sector investment in the Interstate Highway System after World War II. However, the rise of the railroads in the mid-nineteenth century put most of the turnpike companies out of business.

But the need for improved roads resurfaced dramatically in the 1890s, fueled by the demands of farmers, bicyclists, and (at the turn of the century) users of the newly invented automobile. That coincided with an ideological and public policy shift toward centralized government planning, known at the time as "Progressivism." As a result, by 1910 nearly all roads were taken over by state or local government.

THE FEDERAL ROLE

Section 8 of Article I of the Constitution gives Congress explicit power "to establish post offices and post roads." In 1802, Congress authorized funds for the construction of the "National Road," which was completed in 1840 and linked Maryland to the Appalachian Mountains and eventually to Illinois. But there were doubts about the constitutionality of federal engagement in such projects because transportation was regarded as an "internal improvement" that the Constitution did not enumerate as a federal responsibility. In his message to Congress of December 2, 1806, Thomas Jefferson supported the application of federal

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funding "to the great purposes of the public education, roads, rivers, canals, and such other objects of public improvement as it may be thought proper to add to the constitutional enumeration of federal powers." To clarify his position, he added, "I suppose an amendment to the Constitution, by consent of the states, [is] necessary, because the objects now recommended are not among those enumerated in the Constitution, and to which it permits the public moneys to be applied."

According to ongoing research (sponsored by the Independence Institute) by Dennis Polhill and Dominique Tarpey, James Madison used Jefferson's acknowledgement of the unconstitutionality of federal roadway expenditures as a basis for his 1817 veto of a transportation bill. James Monroe also vetoed a transportation bill on constitutional grounds, as did Andrew Jackson (five bills), John Tyler (two), James Polk (two), Franklin Pierce (seven) and James Buchanan (one). Thus, eight of the 15 pre-1860 presidents, including Jefferson and Madison, considered the federal financing of roads to be unconstitutional.

A shift However, after 1860, Congress passed hundreds of laws providing federal funds for roads. The arrangements varied from case to case and did not conform to any system. The amounts spent were comparatively small, totaling $17 million by 1891. That spending did stop, for a moment, in 1914 following the adoption of a House rule stating, "It shall not be in order for any bill providing general legislation in relation to roads to contain any provision for any specific road." But that pause did not last long. Laws passed in 1916 and 1921 authorized the federal-aid highway program, established the federal Bureau of Public Roads (the predecessor of the Federal Highway Administration), and defined a cooperative relationship between the states and federal governments that remains in effect today. In a nutshell, that relationship entails that states bear the responsibility for their roads, but the financing power is shared with the federal government, which also has the responsibility to review and approve work done with the assistance of federal funds.

THE FEDERAL HIGHWAY TRUST FUND

That federal/state relationship was updated by the 1956 Federal-Aid Highway Act, which established the federal Highway Trust Fund (FHTF) to pay for the 90 percent federal share of the cost of the Federal-Aid Highway Program. That included the 41,000 miles then envisaged for the Dwight D. Eisenhower System of Interstate and National Defense Highways, popularly known as the Interstate Highway System. The inclusion of the word "Defense" in the formal title is significant; it was probably put there to strengthen the constitutional case for federal financing.

As originally proposed by President Eisenhower, the required funds were to be obtained by selling 30-year government bonds secured by revenues to be raised from gasoline taxes. However, Congress was reluctant to allow further federal borrowing, and opted for a "pay as you go" financing system with funds for the highway system disbursed from fuel tax revenues accumulated in the FHTF. Toll financing was considered but not recommended. Disbursements to the states are not proportional to income from them, but depend on a complicated formula that takes into account factors such as the length of the road network in the state and the number of motor vehicles.

Since the inception of the FHTF, the composition of the taxes dedicated to it has changed, but the main sources of funds — accounting for about 85 percent of receipts — are still the taxes on motor fuels. The federal gasoline tax was three cents a gallon in 1956 and four cents in 1959. It has since been raised to 18.4 cents a gallon (24.4 cents for diesel fuel), of which 2.86 cents are for the "Mass Transit Account."

Many believe that revenues accumulated in the FHTF go directly to the road agencies to be spent on roads of their choice. Not so. The only way that funds from the FHTF can be allocated to expenditure on roads is by going through the normal budgetary processes of the U.S. Congress. The FHTF was not formed to ensure that funds collected from road users were spent on roads; it was formed to ensure that, in the words of former Federal Highway Administrator Frank Turner, "no more than the yield of these taxes would go into the highway program. In other words, the FHTF was originally designed to be a ceiling, rather than a floor, for the size of the program."

Hence, the FHTF was never a trust fund in any meaningful sense, and its custodians are under no obligation to spend its revenues for the benefit of road users. Legally, the FHTF is a separate account (with the name 'Highway Trust Fund') maintained in the U.S. Treasury, from which the FHWA can draw amounts determined annually by Congress. The FHWA uses those revenues to reimburse state governments for the federal share of expenditures previously made by the states.

Congress is free to attach any conditions it wishes to the appropriation of FHTF revenues, and also is free to decline to appropriate them so that they can accumulate to reduce the overall budget deficit. Currently, all balances in excess of $8 billion are transferred to the General Fund, which also receives the interest earned on unspent balances held in the FHTF.

The main achievement of the FHTF was a dramatic improvement of the U.S. highway system at a low fiscal cost to highway users. Despite its reliance on comparatively low user fees, it succeeded in financing over 46,000 miles of the Interstate Highway System that, although comprising only one percent of total U.S. road mileage, carries 24 percent of all vehicle-miles.

Questionable spending However, now that the Interstate Highway System is virtually complete, its success cannot justify the indefinite continuation of the federal funding of U.S. roads. The main fiscal problem is that, as federal funds meet up to 90 percent of the costs of the projects they support, they result in inflated demands for expensive facilities. A prime example is Boston's Central Artery/Tunnel project (popularly knows as "The Big Dig"), which was initially estimated to cost $3.3 billion. Now-deceased House Speaker Thomas P. "Tip" O'Neill (who represented a Boston district) was one of the project's chief proponents, and the cost is now estimated to exceed $14.3 billion.

The tendency of government officials to support expensive projects is not new. As Adam Smith noted in *The Wealth of Nations,*

> The proud minister of an ostentatious court may frequently take pleasure in executing a work of splendour and magnifi-

> cence, such as a great highway, which is frequently seen by the principal nobility, whose applause not only flatter his vanity, but even contribute to support his interest at court.

The main administrative problem is that accountability for projects is weakened. Although states are nominally responsible for highway investments, they face widespread demand for highways and find it difficult to resist the lure of 90 percent federal financing. And "the federal role… to review and approve work done with the assistance of federal funds" is rarely exercised; for both political and social reasons, federal officials bend over backwards to maintain good relations with state officials.

A major inequity is that some states persistently get more from the federal fund than they pay into it. The data for fiscal year 2000 confirm Heritage Foundation transportation researcher Ron Utt's observation that there is a tendency for the southern states to subsidize those in the Northeast. Since 1982, that has been exacerbated by the diversion of payments by road users to transit programs, most of which are also in the Northeast.

Other problems with the FHTF include:

- Congress can divert highway funds to the General Fund.
- Congress can withhold highway funds to enforce burdensome regulations (including those from 70 different environmental laws), such as EPA car-pooling and vehicle-testing requirements, that Congress is unable or unwilling to legislate directly.
- The FHTF encourages expenditures on new roads rather than the maintenance of existing ones.
- Rules on the use of FHTF funding require states to adopt regulations, such as the Davis-Bacon and "Buy American" provisions, that can raise highway costs by 20 percent or more.
- The provision of FHTF money hampers innovation and flexibility in the financing and operation of roads.
- FHTF rules rarely support toll roads and privately provided roads.

Demonstration projects Another problem with the FHTF system is the proliferation of dubious "demonstration projects," also known as "congressionally mandated special projects." The 1914 House rule of no appropriations for specific roads was broken in 1982 when 10 specific "demonstration projects," costing $362 million, were funded. In 1987, 152 projects were funded, costing $1.4 billion; in 1991, 538 projects costing $6.23 billion; and in 1998 over $9 billion were allocated to enable members of congressional committees to reward their potential voters at public expense.

Many of the demonstration projects, though helpful in members' districts, ranked poorly in state highway programs. Yet they had better chances of being developed when compared to other federally financed roads. A 1991 General Accounting Office review reported,

> Generally, demonstration projects we reviewed were not considered by state and regional transportation officials as critical to their transportation needs. In slightly over half the cases, the projects were not included in regional and state plans.

To give a specific example of the misuse of federal funds: Former congressman E.G. "Bud" Shuster, when chairman of the House Committee on Transportation and Infrastructure, arranged for the abolition of toll payments for those who traveled on the Pennsylvania Turnpike between exits 11 and 12, which happened to be in his district. When the turnpike company complained, Congress appropriated $11 million to compensate it for the revenue loss.

A tax cartel? Some may wonder why state officials agree to federal highway funding and do not lobby for the return to them of the powers and the tax revenues needed to fund roads. The explanation might be that life is easier for state officials if the power of taxation and allocation is moved up to the federal level. That reduces the differences between tax levels in different states — differences that could signal inefficiencies and even (heaven forbid) cause resources to move from high-tax to low-tax jurisdictions. As University of Georgia economist Dwight Lee has observed,

> In effect, increasing the power of the central government to tax is a way of forming and enforcing a tax cartel allowing government in aggregate to extract more money from the public. Having extracted more revenue, the government can reallocate the additional money through revenue-sharing arrangements so that all governments secure more of the taxpayers' money.... With local politicians able to provide projects for constituents who can vote them out of office [and] projects paid for largely by taxpayers in other jurisdictions who can't, a constant demand for excessive and inefficient government spending (all of which enhances the power of central authorities) is assured.

ISTEA

The highway financing system introduced by the 1956 act supported and thus strengthened the concept of the dedicated road fund, which was pioneered in the United States by Oregon's 1919 adoption of a one-cent-per-gallon surcharge to fund road improvement. In America, there was – rightly or wrongly – a broad understanding that the proceeds of gasoline taxes should be thus dedicated. Indeed, the 1934 Haydon-Cartwright Act required Congress to deny federal highway funding to any state that diverted its own highway revenues to non-highway uses.

That understanding was broken in 1982 when one-fifth of the proceeds of a gasoline tax increase was dedicated to transit and placed in a new "Mass Transit Account" in the Highway Trust Fund. The 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) substituted "flexibility" and "intermodalism" for the "dedication" to highway funding of revenues raised from road users. The change from "highway" to "transportation" indicated that, from then on, any political group could lay claim to federal highway money for any purpose related to transportation.

Then-senator Daniel Patrick Moynihan, who in previous incarnations had been a Fulbright scholar at the London School

of Economics and director of the Harvard-MIT Joint Center for Urban Affairs, spearheaded the push to broaden FHTF use from "highway" projects to other forms of transportation. He received support in that effort from the Surface Transportation Policy Project, an umbrella coalition formed in 1990 by groups representing transit advocates, environmentalists, and planners. The coalition's declared objective was "to ensure that federal support for transportation promotes clear national mandates for environmental quality, a strong economy, energy and resource conservation, and enhances the quality of life in neighborhoods and communities."

The practical effect of ISTEA was to phase out the construction of the Interstate Highway System, which was to continue to 1996 (primarily to complete the Big Dig). It defined a 155,000-mile "National Highway System" on which $21 billion could be spent over six years; a $23.9 billion "Surface Transportation Program" that could be used to finance mass transit, rail, and magnetic levitation systems, as well as carpool projects and safety improvements; and a $6 billion "Congestion Mitigation and Air Quality program." Happily for transportation economists, ISTEA also authorized the establishment of a "Congestion Pricing Pilot Program" to initiate new payment systems, i.e., to give road users the option of avoiding congestion by paying additional charges, levied electronically, without vehicles having to stop.

TEA-21

The 1998 Transportation Equity Act (TEA-21), now in force, governs federal expenditure on roads until September 30, 2003. It therefore has to be renewed — "reauthorized" — before that date if federal spending is to continue without interruption.

To meet complaints that monies in the Highway Trust Fund were allowed to accumulate unspent, TEA-21 incorporated "guarantees" to ensure that each state's share of apportionments for specified programs was at least 90.5 percent of its share of its contribution to the Highway Account. However, interest on balances in the Highway Account was, after September 30, 1998, no longer credited to the Highway Trust Fund, and accumulated balances in excess of $8 billion were to be routinely transferred to the General Fund. Thus, the connection between payments by road users and expenditures on roads was further weakened.

Those benefiting from the program are currently lobbying to ensure that they will receive as much as possible under the expected reauthorization in 2003. In the absence of market pricing and market investment criteria, their claims are based on "needs." The American Association of State Highway and Transportation Officials has, for example, estimated that an annual expenditure of $92 billion is needed to maintain the physical condition of highways and bridges, while $125.6 billion is "needed" to improve them. It is difficult to take those estimates at face value because, when governments are asked to pay, all concerned have strong incentives to exaggerate "needs" — highway departments that do not profess "needs" risk having their budgets cut. One of the "needs" is reduction of traffic congestion, which is estimated to cost Americans over $67 billion a year. But there is no way to relate expenditures from the Highway Trust Fund to appropriate congestion-reducing measures in specific localities, even if one buys the idea that farmers in Iowa should pay to reduce traffic congestion in Los Angeles.

Those seeking highway monies are too nice to fight one another for shares of a fixed-size cake. Instead, they prefer to concentrate on demanding an increase in the size of the cake, which could mean more for all. Thus, the U.S. Department for Transportation issued a report that claimed that a federal program of $50 billion a year was necessary just to maintain current conditions. But they were outbid by the American Road and Transportation Builders Association, which would like annual federal expenditures to rise from $36 billion to $60 billion. The ARTBA went so far as to push the slogan "Two cents makes sense," advocating an annual increase in federal motor fuels tax rates of just over two cents per gallon per year for six years to provide for the expenditures.

Life may be easier for state officials because the power of highway taxation and allocation has moved to the federal level.

CHARGING FOR ROAD USE

Before considering the merits of reauthorization and alternatives to it, it may be useful to ask why roads are financed by taxes on products (such as fuel and tires) associated with road use, while other public services (water, electricity, telecommunications) are financed by user payments made in response to direct billing by service providers.

The answer is, of course, that direct billing of road users was, until the 1980s, generally considered to be impracticable without requiring vehicles to stop for tolls to be assessed and paid. William Vickrey, in his 1959 statement to the Congressional Joint Committee on Metropolitan Washington Problems, made the first proposal for charges to be assessed on moving vehicles using electronic identifiers. Such systems were not developed commercially until the 1980s, and surcharges on fuel continue to be the preferred charging method for road users and for road providers alike.

However, by the end of the twentieth century, charges were routinely being directly assessed on moving vehicles in the

United States, Europe, and Singapore. In the United States and Europe, non-stop toll collection uses a technology similar to that employed by scanners in retail stores. Vehicle owners have to open accounts with the road operators and equip their vehicles with electronic devices that emit unique identification signals so that accounts can be identified and debited. Accounts have to be kept in credit. When balances become low, they can generally be replenished automatically from users' credit card accounts. Collection and enforcement are carried out electronically. Those without proper accounts get their vehicle registration numbers automatically photographed and are liable to be fined if they do not pay the assessed charges.

The system used in Singapore does not require vehicle owners to open accounts with the road authority. It works by the interaction of CashCards, in-vehicle units, and overhead electronic gantries. The CashCards are inserted into the in-vehicle units in the manner of inserting prepaid telephone cards in payphones. Road charges are then debited from the CashCards as cars pass under the overhead gantries. The use of disposable CashCards, which have to be recharged or replaced when exhausted, protects the privacy of road users.

It is thus evident that the technology now exists to charge moving vehicles for road use, and to vary the charges according to the type of vehicle, road location, and time of day. A system near San Diego even varies the road charges in response to actual congestion, to keep traffic flowing freely at all times.

While the new charging methods are developed, road charges based on fuel consumption are becoming less satisfactory. There are several reasons for this:

- They are not responsive to costs imposed on the road system; diesel-powered vehicles typically use half the fuel consumed by gasoline-powered ones, but can inflict the same or greater costs on roads.
- As vehicles become more fuel-efficient, revenues proportional to fuel consumption decline in value and cannot keep up with the costs of providing roads.
- The costs imposed by road users on one another under conditions of congestion — costs that should be charged to users if road systems are to perform efficiently — are not adequately reflected in increased fuel consumption.

It is thus likely that methods of charging for road use will have to be replaced, probably within the next decade or two. The U.K. highway authorities have already announced their intention to charge heavy vehicles on the basis of axle weight and distance traveled, with distance traveled being tracked with the aid of the Global Positioning System. Oregon — again the pioneer — is studying the possibilities of using GPS to levy a charge of 1.3 cents a mile to finance its roads, to replace the existing gasoline tax.

ALTERNATIVES TO REAUTHORIZING TEA-21

The idea that 535 people in the capital city can, or should, determine expenditures on major roads in their country might have been acceptable in the Soviet Union, but it makes no sense in the United States where investment in other infrastructure services depends on consumer demand. There may have been good reasons to choose such a system to finance the Interstate Highway System in 1956, but the system is now almost complete. What was established as a "trust" fund to enable road users "to spend money on roads for their mutual benefit" has now become a mechanism for the exercise of federal power and a cash cow for all groups interested in promoting, or demoting, travel by motorized vehicles. Thus, it seems obvious that Congress should not reauthorize TEA-21, but instead should abolish the federal Highway Trust Fund, eliminate the federal taxes dedicated to it, and restore highway-financing powers to the states.

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But the immediate abolition of the FHTF is not possible, and might not even be desirable. For one thing, federal funding will still be needed for projects already authorized but not yet implemented. For another, some of the programs financed by the current system — e.g., those relating to research, standardization, or innovation — might be worth keeping. For example, the development of national standards for electronic road pricing might be an appropriate federal activity.

Thus, it may be preferable that, for 2003, lawmakers focus on phasing out the financing of projects and instead review and amend the other program elements, reducing federal taxation accordingly. Senate Bill 2861, the "Transportation Empowerment Act", introduced by Sen. James Inhofe (R-Okla.) in July 2002, includes a proposal to do just that. If adopted, it would "return to the individual states maximum discretionary authority and fiscal responsibility for all elements of the national surface transportation systems that are not within the direct purview of the federal government." Sen. Inhofe now chairs the Senate's subcommittee on Transportation, Infrastructure, and Nuclear Safety. He supported a similar proposal, sponsored by then-senator Connie Mack and then-congressman John Kasich, that was submitted before the authorization of TEA-21.

Although President Reagan supported a similar "turn back" in 1982, the proposal drew negligible support in Congress. Elected representatives are not over-keen to give up their powers.

Implications of devolution If federal funding of roads, and the relevant federal taxes, were abolished, each state could finance its roads in accordance with the wishes of its people. Some states might wish to retain their roads in political hands; others might prefer to commercialize them or even privatize some of them.

New approaches to highway concessions could be tested. (See "A New Approach to Private Roads," Fall 2002.) States fully responsible for their own roads would have much stronger incentives to ensure that funds paid by road users were spent efficiently. For example, in the absence of "free" federal construction funds, some states may prefer to maintain more of their existing roads rather than build new ones. Others might find ways to encourage the private sector to assume more of the burden of road provision. Some states might stop discriminating against privately provided roads that currently are ineligible to receive funding from the federal Highway Trust Fund, although their users pay the required federal taxes.

States could also involve road users formally in the establishment and management of dedicated highway trust funds. Instead of increasing "taxes" on road users, states might choose to put their dedicated road funds under the control of those who pay into them — the road users. Instead of going into state treasuries, road fund monies could go into bank accounts controlled by trustees responsible to road users' representatives, such as the American Automobile Association and the American Trucking Associations. It would also be desirable that road users, through their representatives, should control the levels of charges. That mechanism could be like the payment of club dues rather than the payment of taxes, with major roles for club officials who represent the motorized mobility as well as cyclists, pedestrians, and landowners. For example, in Sweden most rural roads are owned and managed by landowners' associations.

Some states might also experiment with new methods of charging, to remove financing from dependence on fuel surcharges. Electronic road pricing technology would enable road providers, whether in the public or private sector, to get their roads paid for directly by road users without the need to levy fuel surcharges or annual license fees. The use of electronic devices enables payment for road use without manual toll collection to be as easy as payment for telephone service without coin-operated call boxes.

Alternative recommendation for reauthorization If devolution of highway financing to the states fails to draw support in Congress, consideration could be given to a politically attractive alternative: Restore the "trust" to the Highway Trust Fund by ending the diversion of its monies to transit, ethanol subsidies, "deficit reduction," and other causes that should be paid for by those who want them. According to a national poll conducted in 2002 by Andrews McKenna Research, 89 percent of Americans believe it important that fuel taxes and other highway fees should go to highway improvement. There is no question that governments have the right to tax the use of roads for general purposes in the same way that they tax the use of electricity and telephones. But such taxes should be explicitly levied for general purposes and separated from monies dedicated to roads. Most of us do not object to a tax being added to our electricity bill, but would take umbrage if the government helped itself to monies we paid to the electricity provider.

Another excellent reform of a reauthorized federal highway "trust" fund would be the elimination of federal conditions attached to appropriations. Those conditions — especially the ones relating to environmental regulations — often oppose the interests of road users by delaying the implementation of highway projects and increasing their costs. Such conditions should not be part of a mechanism designed to enable road users "to spend money on roads for their mutual benefit."

WILL THE ROAD-FINANCING WHEEL TURN FULL-CIRCLE?

It seems, then, that both technological and political factors in the twenty-first century open the possibility that road finance will become once again a function of local and private suppliers. The federal role, in turn, would be confined to setting maintenance and safety standards, research, and other functions appropriate for the federal level. That would enable road financing to reflect more closely the wishes of road users and allow them, with the aid of appropriate technology, and even without "state guidance," to obtain the road services for which they are prepared to pay. R

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