

Rethinking Federal Policy on Transportation Infrastructure

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My name is Robert Poole, Director of Transportation Policy at the Reason Foundation. For more than three decades I have been researching privatization and public-private partnerships at local, state, and federal levels of government. My book, *Cutting Back City Hall* (1980), was the first book-length treatment of this subject at the city and county government level. For the last 15 years or so, my full-time focus has been on transportation infrastructure policy, both aviation and surface transportation. I am a member of two standing committees of the Transportation Research Board and am a member of the Government Accountability Office's National Aviation Studies Advisory panel. I am a member of the Air Traffic Control Association and serve on the board of the Public Private Partnership division of the American Road & Transportation Builders Association. I have advised the FAA, the FHWA, the FTA, and the Office of the Secretary of Transportation, as well as the White House Office of Policy Development and National Economic Council. I have also advised or consulted for half a dozen state DOTs.

The United States Lags in Using Public-Private Partnerships in Infrastructure

We Americans pride ourselves as having an economy that is largely market-based with investor ownership of the means of production. Yet when it comes to infrastructure, and transportation infrastructure in particular, the United States is an outlier compared with our OECD allies. A major trend in recent decades-- first in Europe, then Australia and New Zealand, and more recently Latin America—has been to privatize state-owned enterprises that provide major transportation infrastructure. By contrast, most U.S. transportation infrastructure continues to be state-owned enterprises of various kinds, with many of the limitations and disadvantages that we see in state-owned enterprises in China, developing countries, and parts of Europe that have not yet reformed such infrastructure.

In most developed countries, the primary model is the long-term franchise (usually termed a “concession” overseas), similar to U.S. practice for investor-owned electric utilities. A smaller number of airports, toll road systems, and seaports have been sold outright to investors. In either case, the transformation from government ownership and operation to investor ownership or concession operation brings a transition to direct charges (pricing) of the infrastructure, creating bondable revenue streams that facilitate long-term financing of long-lived capital investments. Revenue bond financing also ensures that the capital markets scrutinize the soundness of the investment, which tends to weed out poorly justified projects.

This model may sound familiar, because it is how U.S. toll roads and our larger airports are financed, despite being owned by government entities. But it is far removed from the way other US transportation infrastructure is financed and managed. What follows is a brief overview contrasting the provision of five types of transportation infrastructure in the United States versus other developed countries.

Airports: Airports Council International recently reported that 450 commercial airports worldwide have some degree of private-sector participation in their management or

ownership. In Europe alone, ACI-Europe reports that 48% of all passengers are handled at airports with either full or partial investor ownership as of 2010. There are 25 airport companies listed on stock exchanges, including two in Southeast Asia, three in Mexico, five in China, and the rest in Europe and Australasia. The United States has just one commercial airport that has been long-term leased under the FAA Airport Privatization Pilot Program (San Juan International), with a second one pending (Chicago Midway).

Air Traffic Control: Over 50 countries have corporatized their ATC providers since 1987. This means separating the ATC provider from the government's aviation safety regulator and from the government's budget, making it self-supporting from fees paid to it by airspace users. Most of these air navigation service providers (ANSPs) are government corporations, but as self-supporting entities, they can issue revenue bonds to finance capital modernization programs, unlike the unreformed FAA in this country. The larger ANSPs all have investment-grade bond ratings. Two of the ANSPs can be considered partially privatized: NATS in the UK, which is 49% owned by the government with the balance owned by aviation stakeholders (including employees) and Nav Canada, which is a not-for-profit company with a stakeholder governing board.

Highways and Bridges: In the 1960s when European countries began building national motorway systems, three of them—France, Italy, and Spain—chose to finance these new highways via toll revenues, and used a mix of state-owned and investor-owned companies to finance, build, own, and operate the new toll roads. Portugal later adopted a similar system. In the late 1990s and early 2000s, all four countries privatized their state-owned toll road companies, shifting them to long-term concession agreements. This long-term concession model was adopted by Australia in the 1980s to build tolled urban expressways in Sydney, Melbourne, and Brisbane. The model had spread to Latin America by the 1990s, with long-term toll concessions awarded in Argentina, Brazil, Chile, Colombia, Mexico, and Peru. It has also been used in China, Malaysia, the Philippines, and elsewhere in Asia. The United States is a late adopter of the concession model, with a handful of projects opened in the 1990s and a small but growing number in the 2000s, mostly in California, Florida, Texas, and Virginia.

Seaports: A global wave of port privatization began with the sale in 1983 of 19 UK ports of the British Transport Docks Board as Associated British Ports. Other UK ports were sold in subsequent years. By 1997 a World Bank report found that a large majority of the 50 largest ports worldwide had either mixed or private (investor) ownership, with mixed ownership generally referring to the landlord port model in which the government owns the land and retains regulatory control while various private operators own and operate individual terminals. The United States has mostly landlord ports, with only a few totally state-owned and operated. Major US seaports are largely self-supporting, but pay a Harbor Maintenance tax whose proceeds are used for Army Corps of Engineers harbor dredging projects.

Waterways: Most commercial waterways worldwide are government-owned and operated, but some of the largest are operated on a corporatized basis, including the Panama Canal and the Suez Canal. Both charge tolls for passage, and in the case of the

current Panama Canal widening and modernization, this \$5 billion project is being financed via revenue bonds based on the toll revenue. France is exploring the development of new inland canals and the refurbishment of existing ones as long-term PPPs. In the United States, the entire inland waterways system is managed by the Army Corps of Engineers. Less than 10% of the cost of operating, maintaining, and improving the inland waterways system is paid for by commercial users, via a tax on diesel fuel; the rest is paid for by general federal revenues (i.e., all taxpayers). Waterways thus represent the most highly subsidized of all modes of goods-movement infrastructure in the United States.

Global Companies: Another difference between the United States and other OECD countries is a dearth of US companies experienced not just in building but in owning, operating, and maintaining major transportation infrastructure such as airports, toll roads, and seaports. Of the world's 100 largest airport operators (as compiled by *Airline Business*), 36 are either fully or partially investor-owned—but not a single one is based in the United States. And in *Public Works Financing*'s annual listing of the world's 35 largest surface transportation infrastructure providers, only one (Fluor) is a U.S. company. Of the top five, three are from Spain, one from Australia, and one from France. Investor-owned transportation infrastructure is a large and growing global industry, but thus far US companies are at best bit players.

Investment Capital: According to the 2012 tabulation by *Infrastructure Investor*, over the last five years the 30 largest global infrastructure equity funds have raised nearly \$172 billion to invest in privatized and PPP infrastructure. Over the decade ending in 2012, all such funds have raised an estimated \$291 billion. When leveraged with debt in a typical project financing structure, this amount of equity could support nearly \$1.2 trillion worth of infrastructure projects. That investment will go where it is welcome, and thus far the United States is seen as a difficult, emerging market. At least in this segment of infrastructure, US funds are playing a significant role, representing 37% of the infrastructure investment firms and about 30% of the capital raised. But since there are few opportunities so far to invest such funds productively here in the USA, much of their investment is overseas.

Why Does It Matter That the United States Lags So Far Behind?

High quality infrastructure is essential for a healthy and productive economy. In the decades after World War II, when the United States was the only developed country not devastated by wartime destruction, this country had the world's best infrastructure. Our electricity, gas, telecommunications, pipelines, and water utilities were mostly investor-owned. Our original superhighways were toll financed turnpikes in the Northeast and Midwest, soon followed by the nationwide Interstate highway system. Our airports developed revenue bond financing and became major facilities. Our investor-owned freight railroads struggled until deregulation in 1980 enabled them to begin to make a realistic return on their investments, and they invested their way to becoming the best in the world. Our seaports did reasonably well, with revenue-bond financing much like that of airports.

Today, in the second decade of the 21st century, U.S. infrastructure no longer compares so well. Many of our largest airports suffer from chronic congestion and some still lack world-class passenger amenities. Our air traffic control system no longer sets the pace for advanced technology and streamlined procedures—and is struggling to fund what it now estimates as a \$42 billion NextGen modernization program. Our Interstate highway system is nearing the end of its original design life and lacks capacity in numerous key trucking corridors, while urban expressways suffer chronic congestion in the larger metro areas. Ports compete for limited—and agonizingly slow to be approved—federal dredging projects in hopes of remaining competitive after the Panama Canal expansion. And our inland waterways are plagued by aging and undersized locks that constrain the flow of bulk shipping.

One key benefit from a more robust embrace of PPP approaches would be *increased investment* in upgrading existing transportation infrastructure and adding needed capacity in strategic locations. But as I see it, an even more important benefit of greater use of the market mechanisms that are part of the PPP approach is *more-productive* infrastructure investments. I distrust huge totals of alleged infrastructure needs that are compiled by organizations whose members hope to design and build more projects. For the most part, those totals do not necessarily represent projects that meet a genuine market test—such as having a positive return on the investment it would take to build them. A project finance approach subjects proposed projects to a critically important test: will the project generate enough revenues to pay for itself, making it worthwhile for infrastructure funds to invest equity and for bond buyers to purchase the revenue bonds?

Another benefit of the PPP approach—and I’m speaking here about long-term concessions to either rebuild and modernize an facility or to build an entirely new one—is to minimize the risk to taxpayers. Risk transfer is one of the major benefits of the PPP approach to transportation megaprojects. Megaprojects such as Boston’s Big Dig or the Los Angeles Red Line Subway have a terrible track record of cost overruns, late completion, and significant traffic and revenue shortfalls. A global database of 258 highway and rail megaprojects in 20 countries found that 90% experienced cost overruns, with rail projects on average costing 45% more than estimated and highways costing 20% more. Most rail projects also had ridership shortfalls, averaging 39%. A properly structured long-term concession transfers cost-overrun risk, late-completion risk, and traffic and revenue risk from the government (i.e., the taxpayers) to the concession company, which has strong incentives to build the project within the budget, get it completed on time, and properly maintain it so it will attract and keep customers. Modernizing US transportation infrastructure will involve a very large number of megaprojects, costing upwards of several trillion dollars over the next several decades. So it is critically important to do this in ways that minimize risks to taxpayers.

An additional benefit of the long-term PPP approach is *guaranteed maintenance*. Deferred maintenance is a significant problem in much of our transportation infrastructure—bridges, some highways, and especially waterways. Our institutions seem to be more focused on building new things than on properly maintaining what we have

already built. But the long-term PPP concession creates a quasi-owner of the facility for the duration of the concession agreement, and that entity has every incentive to keep the facility well-maintained so that it continues to attract paying customers. Moreover, maintenance standards are generally included in the long-term agreement, and can be enforced via financial penalties. So you can think of an infrastructure facility that has been modernized via a long-term concession as having the equivalent of a maintenance endowment built in.

Underlying Problems with the U.S. Infrastructure Funding Model

The federal government's 20th-century model of funding transportation infrastructure relied on a combination of user taxes and general revenues, with the user taxes accounted for in four trust funds: Airports & Airways, Highways, Harbor Maintenance, and Inland Waterways. But that system is breaking down, for several reasons.

First, the user taxes are widely portrayed and perceived as just "taxes," and any increase is criticized as a "tax increase." By contrast, when electric bills go up to pay for increased energy costs or a new power plant, people may grumble but they understand that the electric company has to pay the costs of producing and delivering the electricity they want, need, and use.

Second, each of the above trust fund programs builds in significant redistribution from one user group to another and from one region to another, which is not only economically inefficient but also generates political disaffection (and resistance to user tax increases).

Third, over time Congress has added numerous unfunded mandates (such as Buy America and Davis-Bacon) to federal transportation dollars, which increases the cost of building things with federal money and leads to further disaffection with the program.

Fourth, since most federal grant money is for new capacity, the lure of that money (despite its added cost) tends to bias state and local spending decisions toward new construction at the expense, in some cases, of maintenance.

The fifth and most important drawback of the current federal approach, in my view, is that by making annual capital spending money available, it encourages state and local governments to fund large capital projects out of annual appropriations *rather than financing* such long-lived assets. A basic principle of public finance is that long-lived assets should be financed, so that their benefits become available in the near term and are paid for by their users over the useful life of the asset, while the users enjoy the benefits of the improved facility. This is, of course, how the majority of people pay for their housing. But it is also how electric, gas, and water utilities pay for their capital projects, as well as railroads, toll roads, air traffic control providers overseas, and, to a considerable extent, U.S. airports and seaports (despite their also receiving some federal support from their respective trust funds).

With the ongoing federal government fiscal crisis, general fund money to supplement and subsidize the transportation trust funds will become an undependable and unsustainable funding source for transportation infrastructure. So it is time to fundamentally rethink how we fund and manage U.S. transportation infrastructure.

Rethinking Infrastructure, Sector by Sector

Retooling the federal government's role in transportation infrastructure should begin with the principles of federalism. One major reason why federal transportation funds don't go far enough is that they are spread too thin, trying to do too many things. This is especially the case for the Highway Trust Fund, which originated as the means to pay for creating a nationwide superhighway network and has gradually evolved into an all-purpose transportation public works program. So the first principle should be: figure out what is truly federal and devolve state-level concerns to the states and urban/regional concerns to cities and counties.

The second principle is to shift as much as possible from funding to *financing*. That means two related things. First, shift from federal grants to federal *loans*. And shift from user *taxes* paid to the US Treasury to user *fees* paid to the actual infrastructure provider.

And the third principle is to give states and local governments tools to do more, such as reducing unfunded mandates and removing federal obstacles to increased use of long-term PPPs. One way to do that would be to remove entirely any difference in the tax treatment of bonds, whether for government infrastructure or PPP infrastructure.

In a January 2013 Reason Foundation policy brief, I sketched out how these principles might apply to the major categories of federally supported transportation infrastructure. A brief summary is as follows.

Airports: U.S. commercial airports are already largely user-funded, with revenues from airlines (landing charges and space rentals), passengers (passenger facility charges), and service providers (car rental firms, parking, shops and restaurants) paying for operating costs and debt service on airport bonds. Federal Airport Improvement Program (AIP) grants are a relatively small portion of airport budgets at large and medium hubs. As far back as 1987, a US DOT study demonstrated that large, medium, small, and non-hub commercial airports could replace their AIP funds with PFCs, and that could be done today. Self-supporting airports need not be privatized, but those seeking better management and lower-risk megaproject improvements should have the freedom to opt for privatization, as their counterparts in the rest of the developed world already do.

A separate question is whether there should be a continued federal role in funding non-commercial airports. Small towns that have a general aviation airport have some degree of competitive advantage as a place to live and do business compared with those that don't. That argument would support local funding as a choice to be made by such communities. The politics of this question at the federal level may be daunting, but this is exactly the kind of issue the entire federal budget needs to confront in rethinking what

functions are truly federal and which are more appropriately left to state and local levels of government.

Air traffic control: Nearly all developed countries have de-politicized their ATC providers by converting them into self-supporting air navigation service providers, regulated at arm's length by the national aviation safety regulator. This course has been recommended repeatedly by think tanks, the US DOT in 1994, and the Mineta Commission in 1997. This kind of reform is now being talked about by aviation stakeholders concerned over the FAA's poor track record in modernizing the system and the uncertain future of federal aviation funding. Creating a U.S. equivalent of the nonprofit, user-governed Nav Canada would be a good solution, and is likely to be the best way to ensure that the portions of the NextGen modernization that actually provide user benefits exceeding their costs get implemented. With its own revenue stream paid by aircraft operators, the corporation could issue investment-grade revenue bonds to fund modernization investments, and the governing board of aviation stakeholders would vet the plans to be sure their user benefits exceeded their cost.

Highways and Bridges: Sorting out responsibilities among levels of government would have the federal government responsible for a national network of limited-access superhighways (the 21st century version of the Interstates), states responsible for most other highways, and metro areas responsible for their streets and roads. With fuel taxes as a declining revenue source over the coming decades, states (as the largest owner of highways) would take the lead in phasing in mileage-based user fees for state and local roads to replace fuel taxes. For the limited access system, tolling and PPPs would facilitate reconstruction and modernization of the existing Interstates, urban expressways, and portions of the National Highway System that should be upgraded to Interstate status. Given the likely ability of toll finance to handle most of the cost of Interstate reconstruction and modernization, the federal government's funding role would likely shift from grants to loans, primarily for states where traffic volume was insufficient to generate enough toll revenue. The federal role would also be important for ensuring nationwide inter-operability of all-electronic tolling on the limited-access system and mileage-based user fees on state and local roads.

Urban transit is an inherently local function of government, despite its being included in the Highway Trust Fund since the early 1980s. This issue is analogous to small general aviation airports—obviously good things for communities to have, but not obviously federal in nature. The politics of devolving this are also analogous to those of small airports, but are again part of the overall challenge of rethinking the role of the federal government in our multi-tiered governmental structure.

Seaports: Like airports, seaports are largely user-funded and bond-financed today. The Harbor Maintenance Tax is unnecessary, and instead of being reformed so that all the dollars collected each year are spent on port projects, it should be abolished, for several reasons. First, all ports are inherently in competition with other ports, so there are *local* benefits but not national benefits from the improvements funded by this trust fund. Second, the Corps of Engineers' feasibility studies can take over a decade, which

generally delays needed projects which could proceed much sooner if judged bondable by the capital markets. Third, there is a long history of critical assessment of the objectivity of Corps feasibility studies, which provide a much less reliable guide to sound investment than the capital markets. Fourth, the tax is based on a percentage of the value of the cargo, not the draft of the ship (which is the relevant measure for assessing benefits of the dredging projects the tax ends up funding). This tax and trust fund are counterproductive to a sound US ports industry, overcharging some ships and undercharging others, cross-subsidizing ports that need dredging with money taken from ports that don't, and favoring some ports at the expense of their competitors. No national interest is served by continuing this program.

Waterways: Unlike ports, waterways are inherently interstate in nature, so it is not surprising that federal jurisdiction over inland waterways was established in the 19th century, based on the interstate commerce clause of the Constitution. However, because the federal government has responsibility does not mean that the current federal funding system makes sense or is sustainable. That system requires commercial users to pay just 8% of the annual cost of operating, maintaining, and improving the inland waterways system. The token tax on diesel fuel paid by those carriers is almost insignificant, and the heavily subsidized barge industry's reform proposals, though calling for an increase in that user tax, would put an even larger share of waterways costs on the general taxpayer. This is not merely unsustainable going forward; it is also grossly unfair to other modes that compete with barge lines, primarily railroads and, to a limited extent, trucks. Railroads pay 100% of the capital and operating cost of their infrastructure, while heavy trucks pay a large fraction of theirs, according to DOT cost responsibility studies.

In the last year or so, a few shipper groups and the Army Corps' own Institute for Water Resources have begun to discuss ways of tapping the capital markets to finance replacement of obsolete and undersized locks and dams. PPP concessions, of course, would require a bondable revenue stream, such as tolls to use modernized/replaced locks, as on the Panama Canal. In addition, repealing the Jones Act would permit barge operators to buy less-costly vessels, thereby offsetting part of the cost of increased user fees. In addition, since the inland waterways system is so extensive and the need to replace obsolete facilities is so large, consideration should be given to using long-term PPP concessions to modernize individual waterway segments, as France is beginning to do. Several Senators introduced legislation in March of this year to create a pilot program along these lines.

Needed Policy Changes

What I have laid out in this testimony is an overview of how the federal role in transportation infrastructure could be rethought to better fit with the fiscal realities confronting the federal government in the decades ahead. Business as usual is simply not a sustainable option. This agenda could not be implemented overnight, but unless these ideas begin to be discussed seriously, our vitally important transportation infrastructure will continue to be short of investment capital, make sub-optimal investments with the capital it has, and create artificial winners and losers via cross-subsidies.

The key reform principles are (1) to sort out what functions are properly federal, state and local, (2) switch from funding to financing large capital improvements in infrastructure, (3) shift from user taxes paid to government to user fees paid directly to infrastructure providers, (4) empower all levels of government to make use of long-term PPP concessions, and (5) remove federal regulatory and tax obstacles to states and local governments taking on more infrastructure responsibilities.

Near-term federal regulatory and tax changes should include the following:

- Remove the federal cap on airport passenger facility charges (PFCs) and phase out AIP grants for commercial airports, reducing aviation excise tax rates accordingly.
- Remove the 10-airport limit on participating in the FAA's Airport Privatization Pilot Program.
- Remove the \$15 billion cap on tax-exempt Private Activity Bonds for surface transportation PPP projects.
- Authorize states to implement all-electronic tolling on Interstate highways for the specific purpose of reconstructing and modernizing those highways.
- Return the maximum size of TIFIA loans to 33% of project budgets (rather than MAP-21's 49%), consistent with TIFIA's role as provider of gap, rather than primary, financing.
- Add TIFIA-like taxpayer protections to all other federal infrastructure credit programs, such as the Railroad Rehabilitation and Improvement Financing (RRIF) program to (a) limit loan amounts to 33% of total project cost, (b) require a dedicated revenue source for such projects, and (c) require an investment-grade rating on the project's primary financing.
- Eliminate the alternative minimum tax (AMT) on all PABs used for transportation infrastructure.
- Exempt harbor and waterway dredging projects from the Jones Act.
- Exempt highway and transit projects from the Davis-Bacon Act and Buy America Act.

Medium-term changes are mostly structural and organizational in nature, and should include the following:

- Separate the Air Traffic Organization (ATO) from the FAA, corporatize the ATO, and enable it to create its own bondable revenue stream from fees paid by aircraft operators; reduce aviation excise taxes accordingly.
- Eliminate the Harbor Maintenance Tax and wind down the Harbor Maintenance Trust Fund, allowing ports to be self-supporting.
- Refocus the Highway Trust Fund on interstate commerce, devolving its other responsibilities to state and local governments.
- Significantly increase user tax on diesel fuel on commercial inland waterway operators, as a step toward making the federal waterways program self-supporting.

- Authorize the Army Corps of Engineers to enter into long-term PPP agreements to rehabilitate and replace lock and dam facilities, financed by tolls on the new and refurbished facilities.

This is an ambitious agenda, affecting just a small part of the federal government's operations. But the status-quo federal role in transportation infrastructure is unsustainable. As part of putting the federal government's fiscal house in order, while ensuring robust and productive transportation infrastructure, rethinking the federal role along these lines is essential.

This concludes my testimony. I would be happy to answer questions or provide further details on any of the points I have made here.