



## HOW THE PRIVATE SECTOR CAN IMPROVE PUBLIC TRANSPORTATION INFRASTRUCTURE

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As growing demands on roads, bridges, and airports increase congestion and delays, policymakers are struggling to finance needed improvements to the nation's infrastructure. The federal government's longtime strategy of trying to build its way out of congestion is unlikely to be a financially sustainable means of addressing the problem. But what better options exist?

In a new study published by the Mercatus Center at George Mason University, [Clifford Winston](#) weighs the pros and cons of three approaches that private-sector firms could take to improve infrastructure:

- 1) privatization that converts provision of roads and airports from public authorities to private firms
- 2) government implementation of technological innovations developed by private-sector firms to improve the public sector's provision of roads and airports
- 3) prompt application by the private sector of existing or emerging technologies to the vehicles and aircraft that use public infrastructure

The study concludes that the third option has the most potential for significant improvements in infrastructure performance in the near future—provided it is not impeded by the government.

Below is a brief summary. Please see "[How the Private Sector Can Improve Public Transportation Infrastructure](#)" to read the study in its entirety and learn more about the author.

### AN OVERVIEW OF PUBLIC INFRASTRUCTURE INEFFICIENCIES

Originally, the private sector developed and operated most infrastructure in America, but various financial crises led to the government owning and operating many of the nation's roads, bridges, canals, railroads, and airports. Now, public highway and airport infrastructure is characterized by persistent funding shortfalls, travel delays, and physical deterioration.

- Today, as much as one-third of the nation's highways may be in poor or mediocre condition, and one-quarter of the nation's bridges may be functionally obsolete or structurally deficient. Greater demands on airports and airspace have steadily increased congestion and

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travel times since airlines were deregulated in 1978. Meanwhile, both the highway and airport trust funds have begun running persistent deficits, and Congress has responded by using general tax revenues to fill the gaps.

- The funding shortfalls result mainly from the lack of basic economic principles to guide the provision of public highway and aviation infrastructure. Prices are not aligned with users' contributions to congestion and delays, investments are not based on benefit-cost analyses, and regulation inflates operating costs.
- Those problems persist because of the limitations of government agencies and regulatory constraints, as well as political forces. Among the latter, the American Trucking Association has long opposed axle-weight charges for the pavement damage caused by trucks, and labor unions have blocked the repeal of Davis-Bacon rules that raise the costs of road building and repair by requiring federal construction projects to pay "prevailing" (i.e., union-level) wages.

## PRIVATIZATION

A transparent, well-structured agreement in which the government sells assets to private firms could improve infrastructure performance and financing, but the available evidence of its potential economic benefits is mixed.

- Privatization of airports has improved efficiency in Australia and the United Kingdom and has sped the advance of air traffic control technology in Canada. It could increase or decrease runway charges.
- Highway privatization has been explored in developed and developing countries, with varying results and no consensus about its effects.
- In the United Kingdom, unbundling train operations and track maintenance led to disagreements between the government and private-sector participants about the design and cost of expanding track capacity. Congestion made maintenance more difficult and contributed to the ultimate bankruptcy of the private infrastructure company.
- Meanwhile, significant questions about privatizing transportation infrastructure remain, such as how to efficiently transfer public infrastructure to private firms, how to set prices for those assets, and how large a role, if any, the government should have.

## PRIVATE-SECTOR INNOVATIONS THAT COULD IMPROVE PUBLIC INFRASTRUCTURE

Even without privatization, policymakers have options for improving public infrastructure performance by swiftly implementing technologies developed by private-sector firms.

- GPS devices, Bluetooth signals, and mobile software applications could provide motorists with real-time information about traffic speeds and volumes and conditions on alternate routes, allowing drivers to adjust their route choices.
- Weigh-in-motion capabilities, which provide real-time information about truck weight and axle configurations, could be employed to set pavement-wear charges. Those charges could encourage truckers to shift to vehicles with more axles that do less damage to road pavements.

- Governments also could apply adjustable lane technologies and variable speed limits, which are better aligned for driving conditions than fixed limits, to adapt to traffic flows and to set tolls. Such measures could encourage drivers to use less-traveled routes or lanes.
- Efficiency in air travel could be enhanced through technologies such as heated runways, which would reduce delays caused by time-consuming manual snowplowing; advanced screening technologies, such as full-body scanners and biometrics, to speed security measures; and the adoption of a next-generation satellite-based air traffic control system known as NextGen.

The failure of the public sector to implement such beneficial technologies has often been the result of agency limitations, regulatory constraints, and political forces. These create a status quo bias in the government and impede progress in adopting innovative strategies.

#### PRIVATE-SECTOR INNOVATIONS IN TRANSPORTATION MODES

Considering the limitations noted above, improvements in vehicle technology developed and implemented by the private sector offer the best avenue for improving transportation efficiency and safety in the near future.

- The private sector has improved transportation performance and automobile safety through a broad range of technological advances, including electronic stability control, warning and emergency braking systems, speed alerts, and mirrors with blind spot warnings. Airlines have installed more powerful and efficient jet engines and are planning to incorporate improved wing designs to reduce fuel consumption.
- Major innovations and advances in the modes are underway. Driverless cars and trucks can be operated effectively, gathering and reacting to real-time information about traffic conditions and eliminating human failings, such as distracted or impaired driving.
- Technologies such as digital communications and GPS could be used to automate many routine air traffic control measures, such as separating aircraft, permitting greater use of airspace than defined by ground-based navigation. Unmanned aircraft (drones) could be used for commercial purposes—if the FAA would lift its ban on their use.

Innovations in transportation modes could significantly improve the efficiency and safety of current infrastructure. Those modal advances could also spur improvements in infrastructure and ultimately lead to a new era in highway and air transportation.