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A secure funding future in mileage-based charging

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Our transportation infrastructure is neglected—often marginalized—yet it remains a critical engine of our economy. Without sustainable funding, our roads and bridges face an uncertain future and the impact on society will be far-reaching.

Thus, there is an imperative for state and federal agencies and lawmakers to innovate and bring alternative funding, financial and technology-based tools to the table to advance infrastructure development.

In this white paper:

- Why the gasoline tax is no longer sufficient to fund America's long-term needs
- Mileage-based user fees as a viable alternative to the gasoline tax
- Aligning infrastructure funding options with changing social trends and attitudes

New and viable funding options are available

While there are multiple factors contributing to our neglected transportation infrastructure, among the most significant is the diminishing effectiveness of the gasoline tax, which hasn't increased since 1993. Economic and behavioral trends force us to seek a better solution, the most compelling of which is mileage-based pricing. Collecting a user fee to fund improvements is a logical next step, a 2.0 version of pricing as congestion management, which has proven effective in Los Angeles, Atlanta, southeast Florida, northern Virginia, Minneapolis-St. Paul, Seattle and Houston.

Mileage-based pricing is a sustainable model because of the direct correlation between the mechanism and the outcome: fees generate revenue to pay for maintenance. This also reduces capital costs by maximizing use of the existing infrastructure, which lessens demand for more pavement.

The American Society of Civil Engineers gives the nation's roads a grade of 'D' and the economic impact is staggering. It's estimated that substandard infrastructure will cost the economy $210 billion by 2020 and $520 billion by 2040. On a personal level, for example, Californians pay on average $762 a year in vehicle repairs and operating costs due to poorly maintained roads.

The Congressional Budget Office says public transportation spending has declined as a proportion of GDP since 1959. When infrastructure is neglected, the impact is felt in a myriad of ways— such as increased vehicle damage, higher operating costs and longer travel times. In addition, the cost of repairing deteriorating facilities is higher than maintaining them.

Dump the pump?

The federal gas tax has had a checkered history. Enacted in 1932, it didn't actually fund road construction until 1956 with the onset of the interstate highway system. Much of the revenue today is diverted to unrelated government programs and debt servicing.

A University of Minnesota study concludes the gas tax is deficient for several reasons, including:

- not accounting for inflation or rising fuel efficiency,
- not paying the full cost of building and maintaining local roads, and
- failing to address congestion.

Less tax is being collected with more fuel-efficient and electric vehicles on the road, and critics say the tax is unfair to owners of older, less fuel-efficient vehicles and lower income drivers. Complaints have also been raised about the inequity of using general revenue sources that spread the cost of maintaining roads across non-users as well as users.

Trial and acceptance

Mileage-based pricing is a viable, long-term solution. Several states are conducting pilot programs and the federal government offered grants to more states to run their own tests. The Surface Transportation System Funding Alternatives program, part of the Fixing America's Surface Transportation Act, has allocated grants totaling $95 million in 50/50 federal matching funds over five years to states wishing to participate.

Several states, including Oregon, California, Washington and Colorado, have considered, planned or piloted mileage-based pricing programs. This is a logical response by states where a big uptick in hybrid and electric vehicles has resulted in shrinking gas tax revenue.

These test cases will yield data and important learnings for policymakers because there's no consensus as to the right way. For example, the University of Minnesota Center for Transportation Studies has floated a two-pronged approach of "a mileage-based user fee to recover the fixed costs of transportation services and time-based user fee to pay for the additional capacity needed in peak times."

Nationwide mileage-based pricing must emerge from a groundswell of local successes. The federal government will monitor state pilot programs and should do what it can to help them flourish and spread, ideally resulting in a single, national funding mechanism—or at least a multi-state mechanism to replace the gas tax and maintain the long-term solvency of the Highway Trust Fund.

Addressing the critics

As with any sweeping policy change, there will be trade-offs, which need to be managed deftly. The University of Minnesota estimates if user fees were to pay the full social cost of travel, drivers would see a four-fold increase in the direct user-paid costs of roads. However, much of that increase could be offset by lower taxes as well as reduced healthcare and insurance costs and time lost due to congestion. Further impacts include reduced demand for travel, increased off-peak demand, shorter trips, denser development, more delivery shopping and telecommuting, and more widespread use of alternative modes such as biking, walking and public transit.

Ample evidence already exists that supports the collection of fees from drivers who want faster travel. In fact, a recent HNTB America THINKS survey, *Paying for Infrastructure – 2017*, revealed almost six in 10 Americans would pay a toll, even when a free alternative is available, to avoid congestion and save time.

However, it takes political will and sponsorship, consistent communication and public acceptance for priced managed lanes to succeed. For one, addressing the concern that it's unfair to lower-income drivers—particularly those in more rural areas who travel longer distances.

There's also the argument that eliminating the gas tax reduces the incentive to buy fuel-efficient cars and there are privacy concerns when it comes to data collection. California addressed the privacy issue in its pilot program by offering participants a choice of how they report mileage—from paper diaries to connected vehicle technology.

Future generations

The infrastructure funding issue is as much behavioral as it is economic, if not more. Investing in and maintaining the nation's highways and bridges in a sustainable way must be aligned with rapidly changing social trends and opinion.

One opinion that has continued to strengthen is the importance of avoiding congestion. Anyone who gets to a meeting on time or makes their flight thanks to a priced managed lane is more amenable to mileage-based pricing. The same America THINKS survey found the conversion of general purpose interstate lanes to priced managed lanes is supported by 77 percent of Americans. Among this group, 50 percent believe reducing congestion is the most important reason for this conversion, an increase from 43 percent from the same question asked a year earlier.

Millennials are not as romantic about transportation as other generations. They don't have a history with the interstate highway system and an expectation of free roads like Baby Boomers. For them, technology is transportation; the smartphone gets them to their destination, whether it's summoning an Uber or purchasing a train fare.

The case for mileage-based pricing is further validated by the inception of connected and automated vehicle technology. The car of the future will operate itself while generating data on miles traveled, making it easy and seamless to monitor usage and collect the fee. Connected and automated vehicles also will help solve the ever-growing congestion problem in urban areas. Infrastructure will be able to accommodate more vehicles, thereby reducing or eliminating the need to add lanes to existing roadways.

Projects to date have provided these lessons and guiding principles for transportation officials, policymakers and engineers:

- Understand the community, project history, context and purpose
- Define success broadly: it's a program, not just a project
- Don't under or overestimate the project benefits
- Focus on operations and consider the entire corridor
- The public's willingness to pay may come as a surprise

As the search for sustainable funding continues, mileage-based pricing is not the "silver bullet" that will solve all our nation's funding needs. Rather, it is a crucial tool among many methods that, when used effectively, can provide our nation with a sustainable transportation funding stream.

It is important to mention traditional interstate tolling as another potential part of the funding mix. The Trump Administration has become the second White House to call for easing the ban on interstate tolling and giving states maximum flexibility, and HNTB's 2017 survey found 8 in 10 Americans support adding tolls to existing highways and interstates. That said, interstate tolling is ultimately a local decision, and is not the solution in all cases.

Implementing solutions for infrastructure funding starts with strategic visioning and leadership, followed by stakeholder engagement, advocacy and careful economic calculation. The seeds are only now being planted and it may take years to achieve a nationwide system of mileage-based pricing and other sustainable funding vehicles, but any historic pursuit of sweeping proportions is worth the time and effort.

Additional resources

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