

# Strategies for funding transportation in the 21st century

Advances in technology and legislation offer new ways to finance and build infrastructure.

In 1919, Oregon became the first state to impose a gasoline tax. The federal government followed suit in 1932. Fuel taxes have provided the main share of funding for our surface transportation infrastructure ever since.

But inflation, changing driving habits and more fuel-efficient vehicles have eroded the gas tax's funding power. Projections now show it will generate \$35 billion for transportation investments in fiscal year 2010—34 percent less than the previous year. The Urban Land Institute estimates a \$1.6 trillion gap between the cost of identified infrastructure improvements and projected available funding over the next five years.

## ALTERNATIVES TO CONSIDER

A host of transportation funding alternatives available today may help states break their dependency on the gas tax. Public-private partnerships, for example, also known as P3s, allow private companies to finance, design, build, lease, manage and/or operate transportation facilities. According to the Federal Highway Administration, 23 states have passed legislation granting legal authority for private-sector participation to varying degrees.

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In Delaware, Ohio, Oklahoma and Florida, private companies have purchased the right to operate toll road service plazas. In return, the public agencies, which receive up front payments and a percentage of gross proceeds, typically save money by outsourcing labor costs. The newfound revenue can be used for facility upgrades or local road improvements. In some cases, such as Florida's Turnpike Enterprise, the arrangement includes service plaza upgrades.

The Safe, Accountable, Flexible Transportation Equity Act: A Legacy for Users significantly expanded states' authority to advance toll and value pricing projects. Consequently, many states and local authorities are considering tolling options for capacity expansion, and some are evaluating the conversion of existing non-toll facilities to toll.

According to a recent America THINKS survey conducted by HNTB Corporation, 52 percent of Americans would be willing to pay higher tolls to maintain the nation's roads and bridges properly.

Another increasingly popular funding strategy is all-electronic tolling, which eliminates cash collection from the roadway. Most agencies use overhead gantries to receive information from transponders in passing vehicles to log charges to drivers' accounts. Still a work in progress, AET holds great potential for revenue and efficiency enhancements because it:

- Allows agencies to charge higher rates during peak periods, which translates to higher revenues and greater efficiency.
- Eliminates the need for a toll collector, the costliest item on a tolling agency's balance sheet. A tolling facility that can reduce its labor costs will gain the biggest overall operating cost savings and, ultimately, higher net revenue.
- Saves the cost of building, maintaining and staffing traditional toll plaza structures.

"In addition to augmenting traffic flow, improving air quality, reducing travel time and enhancing safety, the move to all-electronic toll collection will provide a significant savings in the North Texas Tollway Authority's operating and capital costs," the agency reported in its 2008 Annual Summary Report.

Congestion pricing, another revenue-generating method, varies the toll rates by the time of day or by traffic congestion levels to improve traffic flow and safety. During select periods, tolls are imposed or increased to encourage travel at off peak hours and discourage peak hour use.

Another way to raise revenue is by selling unused capacity of high-occupancy toll lanes. These lanes charge single-occupant vehicles to use new or existing high occupancy (carpool) lanes. SAFETEA-LU permitted HOT lanes to be built for this specific purpose. It also allows existing high occupancy vehicle or general-purpose lanes to be converted into HOT lanes.

Free to carpools, vanpools, transit and emergency vehicles, HOT lanes are tolled according to market economics (the value of drive time as perceived by the individual user) to regulate the number of single-occupant vehicles in the lane, thereby maintaining a high level of traffic flow, even when regular lanes are congested.



**Jack Finn, PE**  
National Director of Toll Services  
HNTB Corporation

When the Orange County Transportation Authority first opened its HOT lanes, the 91 Express Lanes, the maximum toll was approximately \$4 to drive the 10-mile facility. Today, during super-peak periods, eastbound motorists pay as much as \$9.90, almost a dollar a mile, for a fast, safe and reliable commute.

Some predict a fee for vehicle miles traveled will eventually replace the gas tax as transportation's primary revenue source. In this case, smart odometers would calculate the number of miles a vehicle travels between visits to the gas pump. Instead of applying a gas tax when refueling, the pump adds a fee based on the distance traveled. Oregon is the first state to complete a testing system for mileage fees.

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Another concept, still relatively new to the United States, is cordon pricing. It charges motorists a fee to drive within a congested area, usually a city center. In 2003, congestion was so bad in London that Mayor Ken Livingstone instituted cordon pricing into and out of a 16-square-mile section of downtown during business hours. Initial results in the cordoned zone were extraordinary:

- Congestion decreased by 21 percent
- Traffic speed increased by 25 percent
- Traffic delays went down
- Bus ridership increased by 6 percent during charging hours

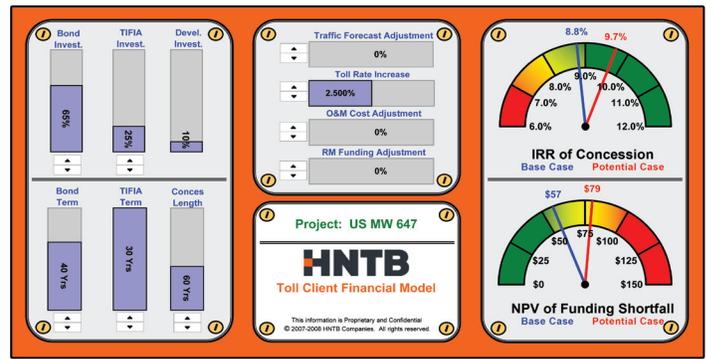
By law, all net revenue raised from London's cordon pricing goes toward improving the city's transportation. For fiscal year 2007–2008, the program generated the U.S. equivalent of nearly \$224 million in net profits.

A number of U.S. cities are now exploring cordon pricing, including:

- Miami's State Route 836
- Houston's Westpark
- Dallas' President George Bush Turnpike, State Highway 121 and the Lewisville Lake Toll Bridge
- Denver's E-470

### FINANCIAL ANALYSIS IN REAL TIME

To advance the discussion on transportation funding, HNTB has held online discussions on the topic and developed a new software modeling tool that allows clients to replicate the financing, construction and long-term operations of a project or program. By working through several “what-if” scenarios, the model provides the data needed to make informed decisions. The high-level findings our model produces save clients time and money by uncovering the most promising policy scenarios to pursue in detail with their financial advisers.



HNTB's toll client financial modeling tool

Preprogrammed with hundreds of thousands of infrastructure investment and revenue policy permutations, HNTB's modeling software can provide—in seconds—the capital cost, gross revenues and net present values of a given HOT lane scenario, for example, and then translate those values into public subsidies and modern debt instruments.

The client sees the information depicted on screen in meaningful gauges and charts. Change the amount of one funding source and, in seconds, the graphs and gauges respond, rendering a new scenario.

### BUCKING THE STATUS QUO

We must venture down new funding options, and the good news is those pathways exist. We have seen the impact of the economic stimulus, the decrease in fuel tax revenues, bonding, tolling and other alternative funding sources shaping how infrastructure will be paid for in the future. ■

#### ABOUT THE AUTHOR

Jack Finn, PE, is national director of toll services for HNTB. He and his team of experts work with turnpike and toll authorities across the country. With more than 30 years of experience, along with numerous leadership roles within professional organizations, he is recognized nationally for his work on the latest transportation financing options. Contact him at (407) 805-0355 or jgfinn@hntb.com.