



Transportation Pricing

Policy Note prepared by Matt Brill

ISSUES

At present, most of the funds for building, operating, and maintaining America's transportation infrastructure come from gasoline taxes. However, the increased use of electric vehicles combined with improved fuel efficiency has marginalized the impact of gasoline taxes on driving behavior. It is also eroding gas-tax revenues, which have not kept up with inflation in much of the U.S.

Pricing roadways or parking can help solve many of today's most vexing transportation problems, including traffic congestion. Pricing can take many forms (see Figure 1).

Express lane tolls and bridge tolls are two common examples. Zone pricing and distance pricing, which are less frequently used, can more strongly influence travel demand and revenue income.

Establishing a connection between the use of roadways and the price motorists pay is important to cover the costs of road congestion, pollution near residential areas, and wear and tear on roadways. Failure to pass on such hidden costs to motorists results in over-consumption of roads, reflected by severe levels of traffic congestion, dirty air, and rutted road surfaces.

FINDINGS FROM THE PANEL

The Oregon Department of Transportation (ODOT) experience with distance pricing, imposing vehicle-mile traveled (VMT) charges, was presented by James M. Whitty, of ODOT. It is one of the few examples of a VMT pricing pilot that experienced some degree of success. The 12-month pilot, which ended in 2006, achieved its policy objective of generating new revenues from Oregon's road users. However, the "pay at the pump" technology was complex, required a costly bureaucracy, was a closed proprietary system, and raised privacy concerns. ODOT plans to introduce an open system that allows a variety of private firms and technologies to provide VMT collection and reporting. It will also allow motorists to choose from several collection methods and technologies:

- wireless transfer of mileage data from an odometer-based unit,
- wireless transfer of mileage data from an on-board unit with vehicle location capability,
- a flat annual tax for unlimited mileage, or
- self-reporting—periodic reporting of mileage via on-line form.

ODOT intends to evaluate the different approaches if they are adopted, to see how they affect travel behavior, revenue generation, and ease and accuracy of data collection.

Another notable experiment is SFPark, a parking pricing program in downtown San Francisco, which was described by Dan Chatman, of UC Berkeley. SFPark employs advanced technologies to adjust curbside meter parking rates based on observed demand, using magnetic sensors to wirelessly transmit the presence of a

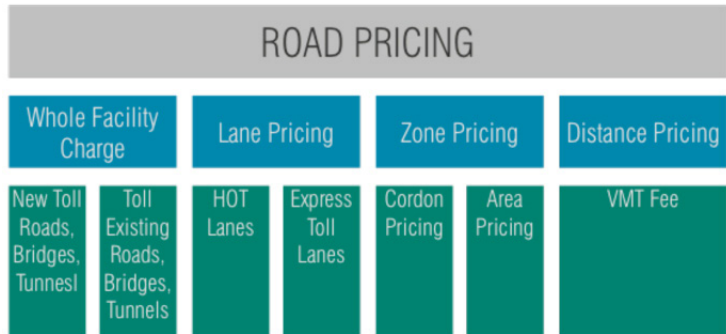


Figure 1. Different types of road pricing systems

vehicle in a parking spot to a central server (Figure 2). The data are compiled and processed to create an online display showing free and occupied spaces. In theory, this information should allow motorists to more easily get to the nearest available space, reducing the time spent cruising for parking. Prices can be adjusted based on usage in order to keep between 15-35 percent of spaces open, so that there are always one or two parking spaces available on any given block. Initial analysis from a study of .50 blocks before and after price changes, during the first six months of the project, revealed increased turnover at some times of day and decreased turnover at others, as well as a significant percentage of spaces being taken up by vehicles exempt from payment, primarily from disabled placards.

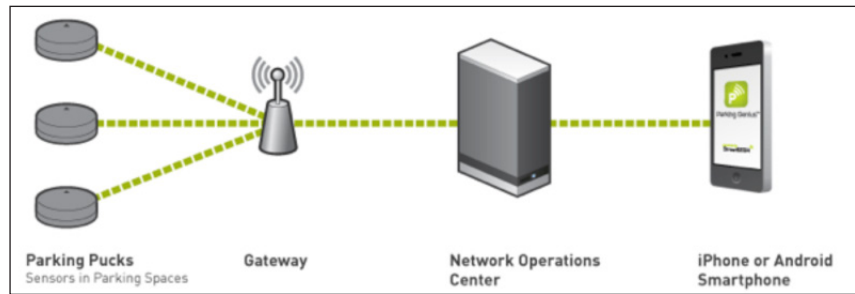


Figure 2. SFPark's technology platform. Source: StreetSmart

RECOMMENDATIONS

Well-designed and targeted pilot demonstrations are needed to further test the waters on pricing innovations. So far, only London, Singapore, and Stockholm have implemented road user-pricing schemes on a significant scale. Pricing auto use in America's more car-dependent cities may require modifying and customizing approaches applied in these three cities to achieve the same degree of success.

Continued and expanded support of statewide pilot studies is particularly needed. These might be financed through FHWA's Pricing Demonstration Program or other federal initiatives. State pilots of schemes like VMT pricing could demonstrate that economic policies and advanced technologies can be successfully blended at a statewide scale. A proven system or pricing methodology could then be tailored and adapted to other states, which is not as easy to do with the smaller scale, city-based pilots that have been tested to date.

It might be easier to introduce VMT charging of truck-based goods movement as a first step, rather than passenger travel. There are far fewer trucks and trucking companies than private cars. Trucks also impose far greater environmental and physical damage on a per-vehicle basis. Successful trial tests of VMT pricing might, over time, open the door for mileage and congestion charges to be imposed on personal vehicles as well.

PARTICIPANTS

Presenters

James M. Whitty, Oregon Department of Transportation
 Axel Reissnecker, Siemens Industry, Inc.
 Dan Chatman, UC Berkeley

Discussant

Robert Arnold, Federal Highway Administration

Moderator

Karen Trapenberg Frick, UCTC and UC Berkeley

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