Vehicle Miles Traveled (VMT) Fees

Ginger Goodin
Senior Research Engineer
Texas Transportation Institute, Texas A&M University System

Thank you for allowing me this opportunity to share some of the knowledge we have gained through our research on the topic of vehicle mileage fees (also called mileage-based, Vehicle Miles Travelled (VMT), and use-based fees). I will begin my testimony with some background material to illustrate long-term concerns over the sustainability of the fuel tax as a funding source, and then provide an overview of one option under discussion in the U.S. and abroad: a road usage fee based on vehicle miles traveled. You have already received a primer on vehicle mileage fees that TTI developed for the Texas Department of Transportation (TxDOT) to answer some of the basic questions about this topic. I will highlight the information in that document as well as offer some new information.

The Future of the Fuel Tax

Transportation agencies across the country are beginning to recognize the inadequacy of the fuel tax to provide long-term funding for transportation programs. Various market pressures and governmental regulations are driving up average vehicular fuel efficiency, meaning the average driver will pay less fuel tax in the future to use the state’s surface transportation system. Consider the following:

- The average amount that a Texas passenger car driver pays annually in state fuel taxes is $114, or $9.50 per month, based on a Texas average vehicle fuel efficiency of 21 miles per gallon (mpg) and 12,000 miles driven per year.

- The amount an individual driver pays in fuel taxes depends to a large extent on the fuel efficiency of the driver’s vehicle. For instance, a vehicle driven 12,000 miles per year and getting 25 mpg (such as a Nissan Altima) pays $8.00 in state fuel taxes per month. A vehicle driving the same 12,000 miles per year but getting 15 mpg (such as a Chevy Silverado) pays about $13.33 in state fuel taxes per month.

- Using conservative projections, average vehicle fuel efficiency is expected to increase from 21 mpg in 2010 to 28 mpg by 2020, dropping the average amount of fuel taxes collected per driver by 22%. The graphs below illustrate the expected increase in fuel

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1 The Corporate Average Fuel Economy (CAFE) standards announced April 2010 will apply to passenger cars and light trucks manufactured in model years 2012 through 2016. They will require these vehicles to meet an estimated combined average mile per gallon (mpg) level of 34.1 by model year 2016.
efficiency over the next 25 years and the drop in per-person fuel tax collection over time.

Figure 1. Projected Increase in Average Vehicle Fuel Efficiency

Figure 2. Estimated State Fuel Tax Collected per Driver through 2035
Concerns over the long-term sustainability of the fuel tax have been well-documented at the national level. Four national reports\(^2\)\(^3\)\(^4\)\(^5\) identify a use-based fee system as a promising alternative to the fuel tax and recommend its further evaluation. In Texas, the Legislative Budget Board addressed the long-term sustainability of the fuel tax in a 2009 study that described vehicle-miles traveled fees as an alternative to the fuel tax.\(^6\) The report recommended support of a feasibility study to evaluate public acceptance, business impacts, and possible collection methods.

The fuel tax has been a reasonable proxy for road usage since its inception, but over time two primary concerns have surfaced, exposing flaws in its stability over the long term: (1) revenue-per-mile driven will decline as vehicles become more fuel efficient, and (2) emerging disparities in the proportion of tax paid according to individual vehicle fuel efficiency, including alternative fuels.

**Usage-Based Systems**

A logical use-based fee system charges drivers for the number of miles driven. The “mileage fee” approach eliminates fuel consumption, type of fuel, and vehicle fuel efficiency from the transportation revenue equation. Other arguments for per-mile usage fees include the following:

- Depending on system design, a mileage fee collection system may manage congestion through variable pricing. This means that in congested urban areas, rates can be set to send price signals to drivers that provide incentives to shift peak period trips to off-peak times or to different modes.
- A vehicle mileage fee system could better allocate resources. Unlike the fuel tax, direct use of the system at the roadway level could be determined. This could provide a means to target funding based on actual usage.


Vehicle Mileage Fee Pilots and Implementations

Thus far, vehicle mileage fee demonstrations and applications have been limited. Oregon conducted the first demonstration of the concept in 2006 with 299 volunteer drivers. Using on-board units connected to the odometer, mileage was recorded and then reconciled with fuel purchases during refueling at the service station. At refueling, the total miles driven were downloaded from the unit using wireless technology. A fee of around 1.2¢ per-mile was then added to the gas bill and the state fuel tax was deducted. A GPS feature was incorporated into the unit to detect when the vehicle left the state, at which point mileage counting would be suspended.

The University of Iowa has recently concluded a two-year national evaluation of the mileage fee concept. The study was conducted in six U.S. locations and there are plans to conduct an additional evaluation in six more locations nationwide. In their demonstration, Iowa researchers utilized cellular technology to transmit mileage data from the vehicle to a central location, which then generated a bill that was then sent to the driver. This technology model is similar to that used for a 2008 pilot project in Seattle and that which is now in use in Germany to charge large commercial vehicles on major national highways.

Across the U.S., other agencies such as the Minnesota Department of Transportation, Nevada Department of Transportation and the I-95 Corridor Coalition, are actively studying and/or testing mileage fees.

Technological Options

These pilot projects represent just some, but not all, possible technological approaches to vehicle mileage fee collection. Technology options can range from low-tech solutions, such as annual odometer readings at vehicle inspection, to sophisticated cellular or GPS-based systems that can limit charges to miles driven within the state and even allow charging at the roadway level. Among the bigger implementation questions yet to be resolved include responsibility for administration and compliance of this system, the development of a rate structure to achieve policy objectives, the strategy for transition from the fuel tax, and the role of the private sector.

Public acceptance is undoubtedly the greatest challenge to transitioning to a vehicle mileage fee system. Based on previous TTI research findings that are consistent with similar research findings elsewhere, public concerns about the collection and processing of vehicle mileage fees include privacy, cost of administration, enforcement, and fairness.

Texas Exploratory Study

TTI is currently conducting an exploratory study for TxDOT to collect public perception data on alternative mileage fee technology and potential deployment approaches. The study is underway and TTI expects its release in fall 2010.

7 Texas Transportation Institute, UTCM. Feasibility of Mileage-Based User Fees: Application in Rural/Small Urban Areas. 2008 http://utcm.tamu.edu/publications/final_reports/Goodin_08-11-06.pdf