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# Vehicle Mileage Fee an Overview

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**U.S. Department  
of Transportation  
Federal Highway  
Administration**

## Vehicle Mileage Fee

### Disclaimer

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This presentation is for informational purposes only. The United States Department of Transportation and the Federal Highway Administration is presently not promoting any particular implementation or method.

## Vehicle Mileage Fee

### Overview

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- Issues with current fuel taxation methods
- Proposals and implementation methods
- Implementation Issues

## Vehicle Mileage Fee

### Background

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- Currently, the US Federal Government, and the 50 states and the District of Columbia have a liquid fuel tax.
- The Internal Revenue Service (IRS) administers the fuel tax at the Federal level.
- The IRS and States have differing definitions for fuel types and in some cases may not charge a fuel tax on fuels that are taxed in the other jurisdictions

## Vehicle Mileage Fee

### Background

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- The federal fuel tax on gasoline is 18.4¢ per gallon (special fuels is 24.4¢). As of July 1, 2009, state rates vary from zero in Alaska to 46.1¢ in California.
- The federal rate can only be changed through legislation. The state rates are either changed through legislation OR may be indexed to some rate such as an inflation rate or wholesale price of fuel.

## Vehicle Mileage Fee

### Background

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- In addition to the fuel tax, revenue into the federal Highway Trust Fund comes from several other sources:
  - Heavy Highway Vehicle Fuel Tax
  - Truck Tax
  - Tire Fee
- States may also include other taxes on the sale of fuel such as sales taxes and these funds may be used for purposes other than the state's transportation trust fund.

## Vehicle Mileage Fee

### Revenue Issues

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- The Federal Fuel Taxes have not changed since 1993. Using rates of inflation\* the effective rate of the current 18.4¢ tax per gallon on gasoline is about 12.4¢.
- Many states have also not adjusted their fuel taxes in a number of years
- Revenue was able to maintain a certain level of growth based on the increase in miles traveled despite the decline in the relative value of the fuel tax rate

□ \* Source: InflationData.com

## Vehicle Mileage Fee

### Revenue Issues

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- In 2005 a new trend began where the annual growth in miles traveled began to decrease.
- In September 2007 the amount of miles traveled began to decrease when compared to the same month in the previous year.
- In 2006 there also began a trend where the fuel economy began to increase.
- At the Federal level in 2008, due to the economic conditions there was a large decrease in the amount of truck sales and a corresponding decrease in that revenue into the Highway Trust Fund

## Vehicle Mileage Fee

### Congressional Commissions

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- As a part of SAFETEA-LU, two commissions were formed to study the future of transportation funding.
  - [National Surface Transportation Policy and Revenue Study Commission](#)
  - [National Surface Transportation Infrastructure Financing Commission](#)
- Each Commission issued a report that included, among other options, recommendations that future revenue options should include some sort of program that assessed a fee based on the number of miles traveled by each vehicle.

## Vehicle Mileage Fee

### Pilot Studies, US

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- Puget Sound Traffic Choices Study, Washington State (launched July 2005)
- Oregon Road User Fee Study (launched spring 2006)
- University of Iowa Road User Study (in progress)

## Vehicle Mileage Fee

Pilot Studies, US

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### Puget Sound, Washington State

- Involved 275 vehicles
  - Project observed driving patterns before and after hypothetical tolls were charged
  - The study was designed to monitor and explain the travel choices of drivers as they faced road tolls
  - Participants were given a particular budget that they could use
  - Tolls varied by time and location

## Vehicle Mileage Fee

Pilot Studies, US

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### Oregon Road Use Study (March 2006 – February 2007)

- 260 participants
- Limited study. Cars were equipped with GPS units that would record the amount of miles traveled by jurisdiction.
- Cars would then download data when they were refueling at certain locations. The reader would then compute the tax based on the distance traveled and credit the tax that would have normally been charged on the fuel purchased.

## Vehicle Mileage Fee

Pilot Studies, US

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### University of Iowa Study (in progress)

- Study was funded through a grant from the FHWA
- The study involves volunteers in 12 areas across the US, based on certain parameters such as toll usage, congestion, and traffic volume. 6 areas were in each of two years.
- Participants have on-board computer temporarily installed in their vehicles.
- Computer will store a record of charges due from road use. This record will be uploaded to a data processing center. If the system were to be put into practice, the center would then bill the vehicle owner. For study, however, no money is collected.

## Vehicle Mileage Fee

Pilot Studies U.S.

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### University of Iowa Study

The study has two primary goals:

- To make sure that the system is reliable, secure, flexible, user-friendly and cost-effective
- To find out why vehicle operators accept or reject the system, what they like and what they don't

## Vehicle Mileage Fee

### Worldwide Applications

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There are a number of programs in place around the world where fees are collected based on the amount of travel by a vehicle or by the location of that travel

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|--|--|
| <ul style="list-style-type: none"> <li>• <b>Fees Based On Distance</b></li> <li>• Germany Toll Collect</li> <li>• Singapore Electronic Road Pricing</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Fees Based On Location</b></li> <li>• London Congestion Charge</li> <li>• Stockholm Congestion Charge</li> </ul> |
|--|--|

## Vehicle Mileage Fee

### Worldwide Applications

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#### Germany Toll Collect

- Trucks are identified by emission class which is based on the year of manufacture based on European standards.
- Fee tables are based on the emission class
- Fees are only assessed on major highways
- Data is collected by GPS unit and transmitted through cellular technology to satellites.
- Bills are sent to vehicle owners

# Vehicle Mileage Fee

## Worldwide Applications

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### Singapore Electronic Road Pricing

- Begun as a traffic management system
- Gantries are placed throughout enforcement zones. (Cars are equipped with in-vehicle units (IU) that are prepaid and when they pass the gantry, the amount is reduced from the balance.
- Presently, the fees are fixed based on time, but there is consideration for variable pricing based on traffic volume

# Vehicle Mileage Fee

## Resources

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## Vehicle Mileage Fee

Worldwide Applications

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### London Congestion Charge

- Charging zone in London subject to charge at certain times
- Cameras are used to image license plates and vehicles are checked in database to see if charges were paid
- If not paid by the end of the next day, a fine is mailed to the owner of the vehicle

## Vehicle Mileage Fee

Worldwide Applications

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### Stockholm Congestion Charge

- Cameras similar to London system, but charges are not prepaid, the users are billed later.
- Charges are based on time and are for a specific congestion zone. There is a maximum charge per day

## Vehicle Mileage Fee

### System Example

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- The following system represents one configuration of the technology. There may be many variables such as using an on-board, engine-contained module for computing distances or a pre-paid transponder that would allow travel on a certain road or in a certain region.
- Again, the USDOT is not promoting one system or technology, but rather this is to illustrate how the technology might work

## Vehicle Mileage Fee

### Tax/Fee Comparison

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#### Tax vs. User Fee – What is the difference?

- Tax – A levy designed to 1) raise general revenue, 2) the amount of which is not proportionate to the cost of services received and 3) the payment of which is not voluntary.
- User Fee – A levy designed to 1) defray the costs of a government service, 2) the amount of which is proportionate to the cost of the service received and 3) the consumption of the service for which payment is required is voluntary.
- Definitions are from Michigan State Supreme Court ruling 1998.

## Vehicle Mileage Fee

### Tax/Fee Comparison

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#### The Fuel Tax – Not Quite a User Fee

- Defrays the costs of a government service
- Consumption of the service for which payment is required is voluntary.
- BUT – The amount of the payment is not proportional to the cost of the service received – some users overpay and some underpay depending on fuel efficiency and vehicle weight. VERY few pay according to actual use.

## Vehicle Mileage Fee

### Research Studies and Reports

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- National Surface Transportation Policy and Revenue Study Commission (December 2007)
- National Surface Transportation Infrastructure Financing Commission (Interim report; February 2008)
- AASHTO Long Term Financing Needs for Surface Transportation (September 2007)

## Vehicle Mileage Fee

### Research Studies and Reports

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- Future Financing Options to Meet Highway and Transit Needs, NCHRP Rpt. 20-24(49) (December 2006)
- 2010 and Beyond Policy Recommendations – Hudson Report (9/04)
- Chamber of Commerce – Future Highway and Public Transportation Financing (November 2005)

## Vehicle Mileage Fee

### Research Studies and Reports

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- National Conference of State Legislatures - Surface Transportation Funding: Options for States (May 2006)
- Transportation Transformation Group (June 2008)
- AASHTO Future Needs (2007)

## Summary of Reviewed Studies

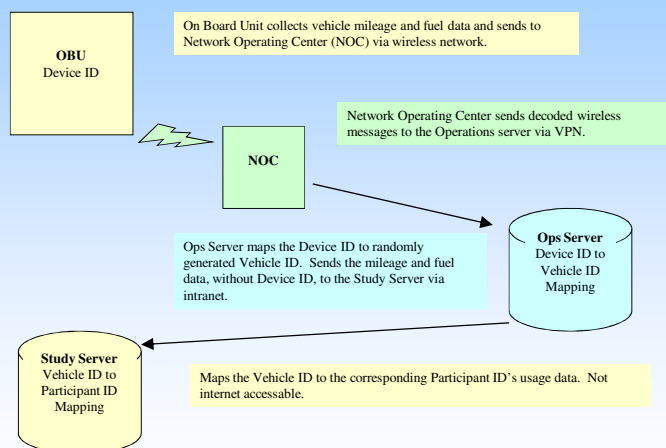
|  | Recommended Study of a Mileage Based User Fee | Can Apply Variable Rates | Study Should Be Done on a National Level | Further Study of Privacy Issues | Continue With Fuel Tax in the Short Term | Study Various Forms of Direct User Charges | Suggested Method and Timeframe |
|--|---|--------------------------|--|---------------------------------|--|--|--------------------------------|
| National Surface Transportation Policy and Revenue Study Commission                  | ✓   | ✓                        | ✓  | ✓                               | ✓  | ✓  | ✓                              |
| National Surface Transportation Infrastructure Financing Commission (Interim report) | ✓   |                          | ✓  |                                 | ✓  | ✓  |                                |
| AASHTO Long Term Financing Needs for Surface Transportation                          | ✓   |                          |  |                                 | ✓  |  |                                |
| NCHRP Report   | ✓   | ✓                        |  | ✓                               |  | ✓  | ✓                              |
| 2010 and Beyond Policy Recommendations – Hudson Report                               | ✓   |                          |  |                                 |  |  | ✓                              |
| Chamber of Commerce – Future Highway and Public Transportation Financing             | ✓   | ✓                        |  | ✓                               | ✓  | ✓  |                                |

## Vehicle Mileage Fee

### System Example

- In one system that is often used as an example a GPS unit is placed (or installed during manufacture of the vehicle) in the vehicle to determine where the vehicle is traveling and to accumulate some amount of data
- After a pre-determined time (example: one month) the data on the vehicle is transmitted
- The system for collection may use satellites, cellular technology, or land-based readers.

## Privacy Protection – Personally Identifying Info Separated From Operating Data



## Vehicle Mileage Fee

### System Example

- The collection may be through a pre-paid or billed method
- Bills may be mailed to the vehicle owners on a variable basis such as weekly, monthly, or quarterly
- The Oregon Road User Fee Study assessed a mileage fee and gave credit for the fuel tax that would have been due, but the other proposals have not been clear on whether there would be an allowance for any taxes paid on the fuel.

## Vehicle Mileage Fee

### Obstacles

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- While all the technology is operable and has been demonstrated that it can work together in a closed system, there are still a number of issues that have to be addressed
- Install GPS units in new vehicles only, or do you retrofit older vehicles?
- How will the units be installed to present the smallest opportunity for tampering?
- Who will pay the cost of the equipment?

## Vehicle Mileage Fee

### Obstacles

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- An argument can be made that it would be easiest to implement all of the levels of taxation in one system so there are no issues with technology conflicts, but would such a system have Federal oversight? Would all fees be collected by one entity?
- If it is implemented on a state by state basis what issues will occur with out of state vehicles?
- Building and marketing a system that will assure privacy of the information.

## Vehicle Mileage Fee

### Pros

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- Fees would true user fees based on the volume of use of the system
- Can be used to receive revenue from non-liquid fuel vehicles (LPG, EV)
- Single point of revenue collection
- Fees can be structured to assess based on vehicle weight, emission class of vehicle or other variable
- Variable rates can be used to alleviate congestion issues

## Vehicle Mileage Fee

### Cons

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- Seeming loss of privacy
- Unless rates are adjusted, the same fee may be charged for a small fuel-efficient vehicle as a larger gas guzzler.
- What happens if states and or localities decide to implement on a single basis?
- Implementation period
- Collections. What happens if fees are billed and owner does not pay? The number of taxpayers would rise dramatically
- What happens if system stops working?
- If technology is not compatible what happens when owner travels in (or moves to) another state

## Vehicle Mileage Fee

### Frequent Criticisms

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- “Big Brother”; lack of privacy
  - No system has been suggested yet so it is not clear how a final data consolidation would work, but the systems would most likely report the distance traveled in each jurisdiction (state, city, etc) so the appropriate fee could be charged. This would not necessarily store information about where the vehicle drove (individual locations) but could still accumulate the distance.

## Vehicle Mileage Fee

### Frequent Criticisms

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- Disincentive for purchasing fuel efficient vehicles.
  - People will say “the government forces us to buy more fuel-efficient vehicles and when we do, we pay less tax, but now we are paying the same as less-efficient vehicles”.
  - This has some validity IF the same rates are used for all vehicles rather than having different rates.

## Vehicle Mileage Fee

### Frequent Criticisms

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## Vehicle Mileage Fee

### What's Next

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- Results from Iowa Road User Fee Study
- Transportation Authorization
  - HR 3311
  - Proposal from US House of Representatives Transportation and Infrastructure Committee
  - The Surface Transportation Authorization Act of 2009  
"A Blueprint for Investment and Reform"

## Vehicle Mileage Fee

### Resources

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The following list includes documents or studies referred to in the presentation or additional materials on the topic

- Study Commission Reports
  - National Surface Transportation Policy and Revenue Study Commission
    - <http://transportationfortomorrow.org/>
  - National Surface Transportation Infrastructure Financing Commission
    - <http://financecommission.dot.gov/>

## Vehicle Mileage Fee

### Resources

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#### Studies/Active Programs United States

- Puget Sound Traffic Choices Study
  - [http://csiss.ncgia.ucsb.edu/events/meetings/time-geography/docs/TCS\\_GPS%20Blain.pdf](http://csiss.ncgia.ucsb.edu/events/meetings/time-geography/docs/TCS_GPS%20Blain.pdf)
- Oregon Road User Fee Study
  - [http://www.oregon.gov/ODOT/HWY/RUFPP/docs/RUFPP\\_finalreport.pdf](http://www.oregon.gov/ODOT/HWY/RUFPP/docs/RUFPP_finalreport.pdf)
- University of Iowa Road User Study
  - <http://www.roaduserstudy.org/Default.aspx>

## Vehicle Mileage Fee

### Resources

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- Studies/Active Programs International
- Germany Toll Collect
  - <http://www.toll-collect.de/frontend/HomepageVP.do;jsessionid=BF12BFDB5C271DF0A992E4CF72A73402>
- Singapore
  - [http://www.onemotoring.com.sg/publish/onemotoring/en/on\\_the\\_roads/ERP\\_Rates.html](http://www.onemotoring.com.sg/publish/onemotoring/en/on_the_roads/ERP_Rates.html)
- London
  - <http://www.tfl.gov.uk/roadusers/congestioncharging/6710.aspx>
- Stockholm
  - <http://www.roadtraffic-technology.com/projects/stockholm-congestion/>

## Vehicle Mileage Fee

### Resources

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These states have proposed implementing or studying some form of a vehicle mileage fee (23)

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|-----------------|----------------------------|
| • California    | • New Hampshire            |
| • Colorado      | • New York                 |
| • Florida       | • North Carolina           |
| • Georgia       | • Ohio                     |
| • Hawaii        | • Oregon                   |
| • Idaho         | • Pennsylvania             |
| • Iowa          | • Rhode Island             |
| • Maine         | • Tennessee                |
| • Massachusetts | • Texas                    |
| • Minnesota     | • Vermont                  |
| • Nevada        | • Virginia                 |
|                 | • Washington (Puget Sound) |

## Vehicle Mileage Fee

### Resources

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These websites have additional information about mileage fees and other alternative forms of revenue

- Texas Transportation Institute
  - Symposium on Mileage-Based User Fees
  - April 2009
    - [http://utcm.tamu.edu/mbuf/proceedings/documents/mbuf09\\_proceedings.pdf](http://utcm.tamu.edu/mbuf/proceedings/documents/mbuf09_proceedings.pdf)
- Innovative Financing Sources for State Highways: Alabama Revenue from a Vehicle Mileage Road User Fee
  - <http://pressamp.trb.org/papersforreview/compendium2009/7E768BF4545F.pdf>

## Vehicle Mileage Fee

### Resources

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These websites have additional information about mileage fees and other alternative forms of revenue

- Minnesota Department of Transportation
  - Mileage-Based User Fee Public Opinion Study
    - <http://www.dot.state.mn.us/funding/mileage-based-user-fee/opinionstudyreport.pdf>
  - Pay As You Drive Demonstration Project
    - <http://www.lrrb.org/pdf/200639A.pdf>
- Feasibility of Mileage-Based User Fees
  - [http://utcm.tamu.edu/publications/final\\_reports/Goodin\\_08-11-06.pdf](http://utcm.tamu.edu/publications/final_reports/Goodin_08-11-06.pdf)

## Contact Information

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