



VMT FEE BASICS AND THE OREGON PILOT PROGRAM

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James Whitty, Manager Office of Innovative Partnerships and Alternative Funding







Road User Fee Task Force



Legislative Mandate

"To develop a design for revenue collection for Oregon's roads and highways that will replace the current system for revenue collection."





Task Force Selection



A Vehicle Miles Traveled Fee



Fundamentals of Mileage Charging

- Six Things A Mileage Charging System Must Do
- 1. Calculate miles driven
- 2. Access mileage data
- 3. Apply mileage charging rates
- 4. Provide a billing
- 5. Collect payment
- 6. Enforce payment



[300 miles x 1.2 cents = \$3.60]







Essential Precept

"Technology should *not* drive system design. *Public policy* should determine the nature of any mileage charging system."



Structuring VMT Fees To Address Policy Goals

- Sustainable funding for roads
- Congestion management
- Greenhouse gas reduction
- Energy independence
- Responsible cost allocation





Policy Issues for Mileage Based Fees

- Purpose of the system
- Nature of payer and charge
- Cover all motorists
- Cover all roads
- Cover all mileage
- Protect motorist privacy
- Local option & geographic zones
- Congestion pricing
- Rate structure
- Public vs. private operations





Structural Issues for Mileage Based Fees

- Ease of motorist use
- Extent of private sector burden
- Administration
- Integration with other systems
- Crediting gas tax
- Reliability and back up system
- Managing nonpayment and fraud
- Operating cost/revenue ratio
- Capital costs
- Transition management
- Overall system risk





Technology Issues for Mileage Based Fees

- Specificity of travel: Identification of geographic zones or specific travel routes via GIS map?
- Central server/computer connected with databases
- Implement a closed system or an open system
 - Technology platform: Proprietary vs. available standards
 - Operating system: Proprietary or available?
 - Data transfer: Single manner vs. options
 - Invoicing and payment: One way or multiple ways?
 - On-vehicle device: One pre-market device or post market options?
- Enforcement
 - > At fuel pump vs. electronic surveillance, or combination
- Separate systems for light and heavy vehicles





Public Concerns

- Confidence in system
 - ➢ Efficiency
 - ➤ Fairness
 - Perceptions of large and costly bureaucracy
- Privacy & fear of technology
- Imposition of a government mandated on-vehicle device
- Motorist class wars
 - Rate structure
 - Rate equity
- Flexibility of road pricing







Central Billing Model



Central Computer (Customer Service Center)



Central Billing Model

Pluses

- Covers all vehicles
- Covers all roads
- Charges only in-state travel
- Easy for some motorists
- Protects motorist privacy
- Potentially low capital costs
- Minimal private sector burden
- Allows congestion pricing

Minuses

- Enforcing payment
- High operational costs
- Inconvenient for cash payers
- Imprecise gas tax credit
- No back up system
- Non-seamless transition
- Public concerns about privacy and how system would work
- High overall system risk





Pay-at-the-Pump Model







csr R# 1 S# 1 T# 882316 10:55 AM 06/09/06		The Receipt
Leathers Fuels 11421 SE Powell Blvd Portland, OR 97266 Pump# 1 Unleaded 19.50 @ 2.549 49 ST Fuel Tax @ .24 (4.0 VMT Fee : 5. Rush Hour : 40 In-Oregon : 364.6 Non-Oregon : 0 No Signal : 0 Subtotal 50.0 Total 50.0 Cash 50.0 Thank You !	.71 58) 05 08 08 08	Fuel tax deducted from fuel purchase price Mileage fee imposed as part of fuel purchase



Successes

- Zone differentiation
- Mileage counting
- Vehicle identification with fuel pump
- Transmission accuracy
- Transaction administration
- Reduced peak driving 22%
- Acceptance by participants

Challenge

• Short timeline required cutting quality assurance





Pay-at-the-Pump Model

Pluses

- Meets most policy objectives
 - Provides gas tax credit
 - Covers all roads
 - Charges only in-state travel
 - Easy for all motorists to use
 - Protects motorist privacy
 - Cost effective operations
 - Reliable
 - Enforceable
 - Seamless transition
 - Minimal private sector burden
 - Allows congestion pricing
 - Reduces overall system risk

Minuses

- Long period for development and implementation
- Slow technological evolution
- Does *not* cover vehicles not visiting commercial fueling stations
- Public concerns about privacy and how system would work





Mileage Charging Under an Open Interoperable System





Market-Provided On-Vehicle Devices

Must comply with prescribed standards and certifications

- Data accuracy and form
- Data transmission frequency
- Vehicle identification
- Anti-tampering and enforcement protocols
- Certifications of device and installation

Motorist choice of on-vehicle device

- Various privacy protection capabilities
- Data generation and retention alternatives
- Precision
- Cost
- Selection of applications & value added services







Oregon Road User Fee Pilot Program 2.0: Implementing an Open System



- 5,000 motorists in Portland metropolitan area
- Mileage fee rates set by administrative rule
- Motorist pays mileage fee in lieu of state gas tax
- Voluntary motorist participation by contract
- Motorist selects capability of onvehicle device
- Private sector implements and operates
- Permanent?



Oregon's Pilot Test of Truck Road Use Electronics

- A staged developmental effort for an automated weight-distance tax
- <u>Stage One</u>: Five trucks from one motor carrier for 75 days commencing January 14, 2010
- Pilot test drivers will operate automated reporting system and manual reporting system concurrently
- Evaluation to compare accuracy, cost and compliance effort of manual and automated systems
- Results may lead to system refinements and further tests





An Automated Axle Weight Distance Tax System



1. At start of trip, truck driver enters weight of the combination and number of axles into an electronic on-board unit equipped with GPS receiver





2. Truck travels as the on-board unit records travel coordinates



3. At end of month, the on-board unit wirelessly sends coordinate data through cellular transmission to a data repository



4. DOT converts coordinate data to mileage and generates highway use tax statement for the motor carrier



5. Motor carriers elect to receive their highway use tax statement by mail or via Internet payment





Mileage Fee Rate Structure

Consequences of a Flat Rate



FLAT VMT CHARGE VS. FUEL TAX



Rate Structuring Options for VMT Charge

Public Policy Options

- Revenue
- Traffic management
- Environmental
- Energy independence
- Responsible Cost Allocation

Rate Structure Options

- A flat basic rate
- A stacked rate
- Externality multiplier
- Gas tax/mileage fee mix





Rural Driving

- Subsidizing rural motorists for driving longer distances
- Rural motorists already pay distancebased charge – the gas tax
- Rural subsidization premature until affect of rate structure known
- Can charge different rate for driving in rural zones









A National Investigation

State Versus National Implementation

- Vital federal role in state implementations
- Technology standardization
- Cooperation of national industries
- Charging out-of-state vehicles

Approach for National Implementation

- Timeline for completing development
- Policy oversight body
- National-level project teams
- Reports to Congress
- Concurrent investigations
- Funding *directed* pilot programs











onlinepubs.trb.org/online pubs/sr/SR299Mileage.pdf

oregon.gov/ODOT/HWY/RUFP P/docs/RUFPP_finalreport.pdf

SPECIAL REPORT 299: REDUCING TRANSPORTATION ORIEINIJOUSE GAS EMISSIONS AND ENERGY COMSUMPTION: A RESEARCH AGENDA

Discerning the Pathway to Implementation of a National Milcage-Based Charging System

> James M. Whitty John R. Svadlenak Oregon Department of Transportation

> > October 2009

Paper prepared for the Transportation Research Board

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Work Yet To Do

Assessing various VMT charging systems

- Collection costs
- Open vs. closed system

Technology and systems

- Business rules will determine technology applications
- Integration with other systems
- Anti-tampering for on-vehicle devices
- Institutional and legal issues
- Compliance enforcement

Public Acceptance: three steps

- 1. Determining public attitudes and expectations
- 2. Design mileage charging system for public needs
- 3. Implement education and communications program





Work Yet To Do

Governance

- Who should design the system?
- How should revenue be allocated?
- Who will operate the system: public or private sector?

Transition

- Retrofitting versus phase in
- Retention of fuel tax during phase-in
- Pre-market vs. after-market devices
- Setting standards for technologies
- Determining certification processes

Voluntary Adoption

- Motorist choice of after-market device
- Additional services and applications
- Mobile peer-to-peer exchange of vehicle data
- Option Out as an alternative but not default option





An Interim System: VMT Estimate Model







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Central Computer (Customer Service Center)





Pay-at-the-Pump Model

