2nd Mileage-Based User Fee Symposium

Transition Issues and Research Needs

Paul Sorensen, RAND Corporation

April 20-21, 2010
Observations Are Based on Two Recent AASHTO-funded NCHRP Studies

• NCHRP 20-24(69)
  – Evaluation of options for implementing a national system of VMT fees in the near term
  – Completed June 2009

• NCHRP 20-24(69A)
  – Scope VMT fee trials that would be helpful to fund in the next authorization to prepare for implementation beginning as early as 2015
  – To be completed this summer
The Initial Study Was Motivated Largely by Concerns Over Declining Revenue

- Fuel tax revenue has been increasingly undermined by political and structural liabilities

- Road-use fees based on vehicle miles of travel (VMT fees) offer a promising replacement for fuel taxes

- Many have assumed that transitioning from fuel taxes to VMT fees would take at least 10 years, but we face pressing revenue shortfalls now

- Would it be possible to implement VMT fees much more quickly, during the next surface transportation authorization?
We Examined Nine Implementation Options, Ranging from Technically Simple to Sophisticated

- Self-reported odometer readings
- Periodic odometer inspections
- Assumed annual mileage with optional odometer inspections
- AVI with fees based on fuel consumption, fuel economy
- OBU with OBD II port connection
- OBU with OBD II / cellular
- OBU with GPS (configured for coarse resolution)
- OBU with GPS (configured for high resolution)
- RFID tolling on partial road network
Two Additional Concepts for Reducing Costs and Speeding Transition Were Highlighted

• Interoperable or “open systems” architecture
  – Government publishes required specifications
  – Firms compete for market share based on price and value-added functionality
  – Drives down cost; allows continued innovation

• Voluntary “opt-in” period
  – Drivers may opt in to save money, gain greater convenience, gain additional valued services
  – Opt-in period demonstrates that common concerns related to privacy, enforcement, cost can be overcome
The Study Recommended Further Effort to Prepare for National Implementation of VMT Fees

- Several implementation options emerged as most promising (trading off cost vs. flexibility)

- But, remaining uncertainties make it difficult to select the best technical and institutional configurations at this time

- The next authorization provides an opportunity to fund a set of activities for prepare for potential implementation beginning in 2015
Targeted Investments in Reauthorization Could Set the Stage for VMT Fees in 2015

• Planning
• Analytic studies
• Technical research and development
• Trials
• Public education and outreach
The Second Study Focuses on the Types of Trials That Would Be Helpful to Fund

• What do decisionmakers need to know to:
  – Determine that it is appropriate and politically feasible to implement VMT fees?
  – Determine the mechanisms and institutional arrangements for implementing VMT fees?

• What subset of the relevant questions are best addressed through trials?

• How do we design trials to gain the necessary insights?
What Do We Need to Learn / Decide?

• Lacking consensus on what system must support:
  – Types of pricing
  – Ways of collecting revenue
  – Forms of privacy protection
  – Forms of enforcement
  – Other value added features
  – Open standards
What Do We Need to Learn / Decide?

• To build consensus and design the system, we may need more information about:
  – User views / political acceptability
    • Privacy
    • Pricing structures
    • Value-add features
  – Technical questions
  – Cost questions
  – Institutional questions
  – Potential transition strategies
What Should We Explore Through Trials?

• What types of pricing
• Scale, geographic coverage, duration
• Specific technical, institutional, user acceptance, and phase-in issues
• Leadership and stakeholder participation
• Organization and management of trials
• Funding allocation
• State and local involvement
• Private sector involvement
• Trial participants
• Cost estimates
• Detailed test structure

Interviews with Stakeholders And Subject Matter Experts
The Answers We’re Hearing Are All Over the Map, Reflecting Different Perspectives & Assumptions

- Who should lead development?
  - States
  - Federal government
  - Private industry

- How is the transition accomplished?
  - Mandatory phase-in timeline
  - Indefinite opt-in period

- How close are we?
  - Still in exploration phase
  - Just a few more things to learn
  - Ready to roll trials directly into implementation
Different Perspectives Lead to Different Visions of What the Trials Should Accomplish

• Potential visions
  – Help states help themselves
  – Learn enough to design a flexible federal system that states can opt into
  – Jump start the market to develop and deploy in-vehicle travel services, including the capacity to support federal and state VMT fees along with many other applications

• Structure of trials depends on your preferred vision (each has advantages and potential drawbacks)
Helping States Help Themselves

• Provide funding for states to explore the concepts that they’re interested in
  – States may partner with technology providers, counties or municipalities, insurance providers, etc.

• Compete for funding, but fairly flexible
  – Consider transition plan
  – Consider eventual need for interoperability

• Smaller individual trials (thousands of participants)
Developing a Carefully Planned Federal System

• Bulk of funding devoted to carefully orchestrated set of trials intended to answer specific questions
  – Some flexibility for state innovation, mainly related to state-specific policy and institutional issues

• States would likely compete to participate, subject to:
  – Stricter requirements about what trials must include
  – Aim of testing in different regions, areas

• Move in the direction of open standards, but not essential to determine ahead of time

• Moderate sized trials in aggregate (tens of thousands)
Jump Starting the On-Board Travel Services Market

• On competitive basis, individually fund or subsidize:
  – Firms, states, municipalities, auto insurance, etc.

• Goal of rolling into implementation on an opt-in basis
  – Larger trials (hundreds of thousands of participants)
  – Focus on actual revenue collection
  – Early focus on standards in advance of trials

• Longer lead time
  – Standards development
  – Enabling state/local legislation or regulation
  – Development of PAYD insurance programs
  – Development of value-added services
Which Vision to Pursue?

• How much investment is required, and to what extent is the investment leveraged?

• How well does the vision address national objectives?

• How likely is it to lead to implementation; that is, how well does it address the most significant risks:
  – High cost of operating system
  – Enforcement challenges
  – User objections related to privacy, government overreach
60 years
AHEAD OF THE CURVE