The Experiments of Distance-Based User Fees:

Learnings from Previous Pilots Projects

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Motivation

The current transportation funding system based on motor fuel taxes may no longer be a sustainable model

1. Growth of vehicle fuel-efficiency
   - CAFE standards
2. Growth electric engines
3. Inflation
   - Federal: same since 1993
   - State: 27 states have changed it but once

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Potential solution: Distance-Based User Fee

Previous Work

- Benefits of DBUF compared to the motor fuel tax
  Efficiency, equity, revenue sustainability, and feasibility
- Several authors agree that public acceptability and administrative feasibility challenge DBUFs implementation
  1. Privacy and data security concerns
     - Track of location
       Increases with track in real time (GPS)
     - GPS allows pricing flexibility
  2. Equity concerns
     - No burden on rural households (ST-LT)
       Use of less-efficient vehicles + operating costs
     - Discourage ownership fuel-efficient vehicles
  3. High costs of implementation, operation, enforcement, and compliance (6% - 10% of total revenue collected)

Pilot Projects in the U.S.

Pilot Programs

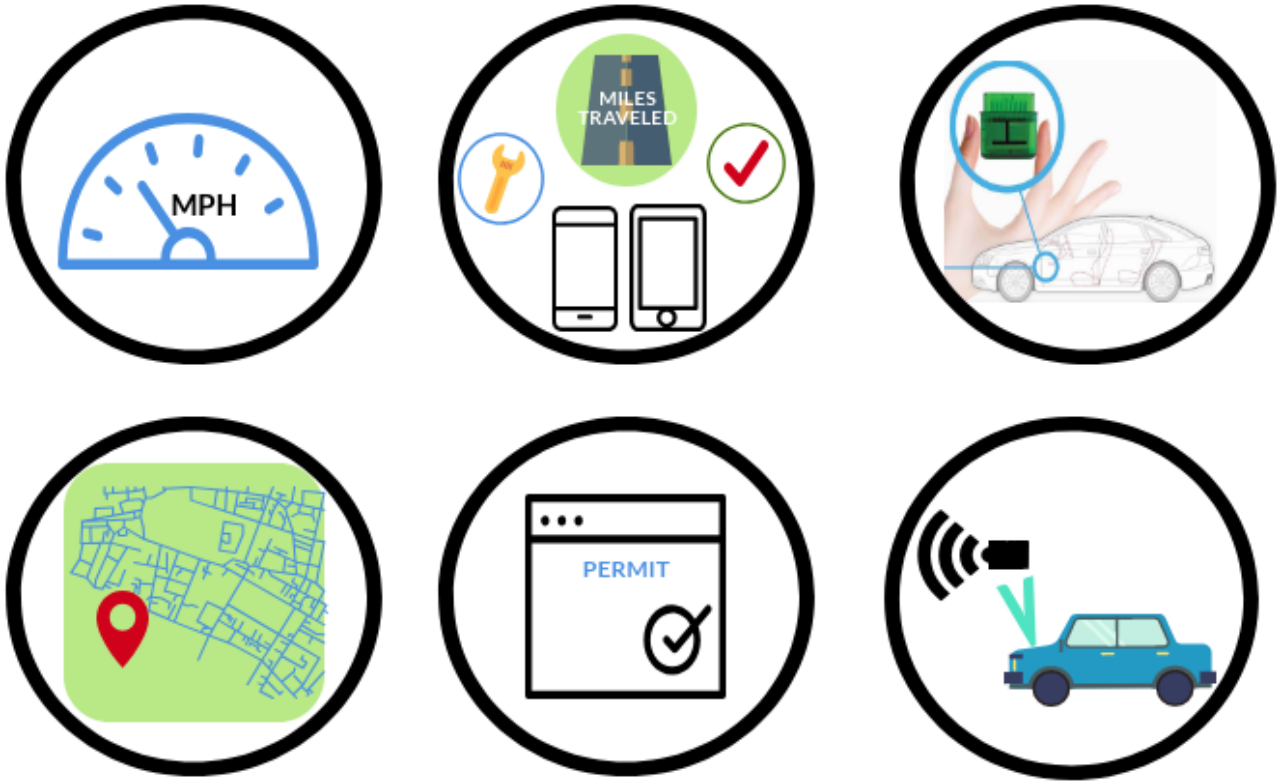
- Oregon
- California
- Colorado
- Minnesota (4 projects)
- Washington
- National Evaluation - University of Iowa

Focus on:

- Overview: Implementation, costs, participants...
- Technology used
- Pricing Scheme

Technology Used to Capture Mileage

- Pilot projects offer a wide range of technology options



- More and more participants are choosing GPS reporting methods
  - 67% in California and 70% in Colorado

Pricing Schemes in Previous Pilot Projects

- Revenue neutral fee
- Limited coverage of the total motor fuel tax rate
- Calculations based on average state's MPG
  Oregon, Washington, UofIA
- Unique rate:
  Except for Minnesota
  Adjustments: Per time of day; Day of Week; Area
- The design addresses increases of fuel efficiency
  Except for Oregon that addresses the loss in purchasing power due to inflation (ST)

Learnings from Pilot Projects

Addressing Privacy and Data Security Concerns

Findings:

Privacy concerns decreased over the course of the pilots

- Higher percentage of participants tend to be satisfied

Approaches:

1. Imposing restrictions on the type of data to be collected and its use
2. Adoption of specific data security measures
3. Inclusion of private-party vendors
4. Allow participants to choose the technology they want

Addressing Equity Concerns

Persisting Concerns

- Rural/Urban:
  - Rural drivers are highly affected by the use of less fuel-efficient vehicles
  - Pilots in MN and UofIA have used variable pricing depending on the area of travel

Additional Concerns

- Additional burden on owners of electric vehicles
- Tracking miles and collecting revenues from out-of-state drivers

Addressing High Administrative Costs

Approaches:

- Offer different technologies for mileage tracking
- Participation of private companies

Future studies:

- DBUF rate that internalizes the increase of costs
- Use of MaaS to reduce collection points