

**Update on Nationwide Initiatives  
Related to the Use of Vehicle Mileage Fee Systems  
Discussion Item**

**Description**

Research staff from the Texas Transportation Institute (TTI) will present an update of important ongoing initiatives aimed at advancing vehicle mileage fee (VM fee) legislation, policy, technology, and pilot projects, including:

- Oregon's pilot study to test the technology and administrative feasibility of VM fees and the current efforts to draft and adopt legislation that would apply VM fees to electric vehicles and plug-in hybrids by 2014.
- The University of Iowa study that tested the feasibility and public acceptance of a VM fee system by installing onboard computers in motorists' vehicles to record charges due from road use.

A representative from the team currently working on a Minnesota pilot project using technically advanced system architecture will also provide an overview of the project's scope, implementation schedule, and desired outcomes.

**Background**

In December 2010, staff briefed the commission on the findings and recommendations of the VM fee study that TTI conducted for the department. At that time, the commission sought information about the roles that states can play in developing VM fee systems and requested updates about studies elsewhere.

**Problem/Condition**

The current gas tax generates revenue based on fuel consumption, not motorists' actual use of the system. As higher fuel prices and fuel-efficient and alternative-fuel vehicles continue to reduce fuel consumption, the fuel tax will be unable to maintain and expand Texas' highways in the future.

A VM fee system could potentially overcome the limitations of the fuel tax and address other concerns for the operation and finance of the state's transportation system.

**Expected Action or Input from Commission**

Staff does not anticipate any particular action from the commission at this time.



- TRB Analysis: fuel consumption ↓ 20% by 2025
- Fuel taxes problematic as a long-term funding source
  - Fuel taxes are primary source of state transportation funding
  - Fuel consumption is declining
  - The fuel tax will become a less sustainable and less equitable proxy fee for road use into the future
- Is there a better alternative?

- Vehicle mileage fees considered a more sustainable and equitable approach
  - Reflects actual use
  - Not affected by increases in fuel efficiency
- Represents a significant change over current system
- Research and testing underway at state and national levels to explore mileage fee applications

Research and Testing:

- I-95 Corridor Coalition
- Nevada DOT Pilot Test
- Colorado DOT Pilot Project Development
- Minnesota DOT Road Fee Test

Proposed Implementation:

- Oregon HB 2328

- University of Iowa, National Evaluation of Mileage-Based Road User Fee
- USDOT Exploratory Research on Technology Options for Collection of Road User Fees

- Are mileage fees right for Texans?
  - Not now. Texans say we need to fix the current system first
  - Public unclear about how transportation funding works in Texas, and doesn't recognize a problem
  - Texans have concerns with privacy, administration and enforcement of mileage fees that will need to be addressed
- The need for a solution
  - Fuel tax alone won't sustain Texas transportation
  - A more direct user-fee approach should be considered; electric vehicles are a logical starting point
  - Legislative action will be needed to pursue public education and address policy questions

- **Demonstration: Implementation on Electric Vehicles (EV)**
  - Can public concerns be addressed?
  - What are the outstanding policy questions?
    - Mileage rate?
    - Replacement or supplement?
- **HB 1669**
  - Filed version consistent with research recommendations
  - Substitute versions drafted
  - Status: pending in committee

# OVERVIEW OF MINNESOTA DEMONSTRATION

## Enabling Legislation

2007 Legislature



## Program Approach

- Leverage existing off the shelf products and their consumers / public
- Utilize commercially available communications
- Integrate new functions on single existing mobile platform
- Address MBUF specific concerns
  - Privacy
  - Equity
  - Enforcement and Evasion
  - Administration Costs

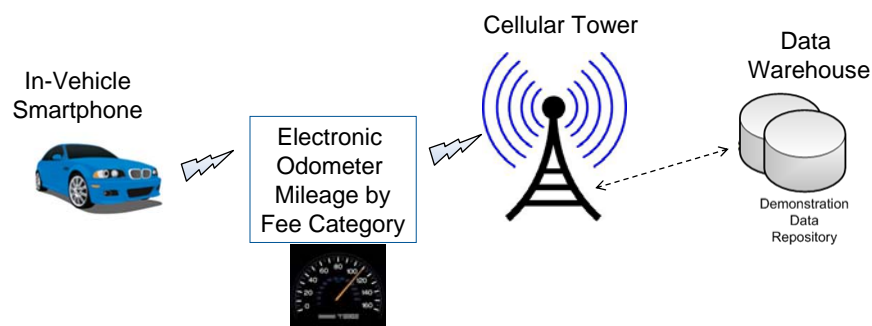
## Battelle's Role

- Develop software and hardware systems to conduct a demonstration of mileage-based user fees (MBUF)
- Demonstration will:
  - Utilize Commercial Off-The-Shelf (COTS) hardware
  - Include 500 in-vehicle devices & back office processing system
  - Be deployed for a 1-year duration (split into 3 deployment waves)
  - Require extensive software development
  - Permit a comparison of technology vs. odometer readings

## Mileage-Based User Fee Operational Concept

- Discounting system from flat odometer fee
  - Technology used to discount from a flat fee per mile according for a fee system based upon:
    - Country (inside vs. outside the United States)
    - State (inside vs. outside Minnesota)
    - Large geo-zones (inside vs. outside a metropolitan area)
    - Roadway classification (Interstate vs. Non-Interstate)
    - Time of day
    - Day of week
    - Vehicle heading
    - Type of vehicle
- Six-month trial demonstration
  - Actual fees will be assessed and invoiced

## System Concept



GPS Position is NOT being transmitted for the Fee Assessment



# In-Vehicle Design Overview

## Samsung Galaxy S

In-Vehicle  
Computational  
Device and  
Display Unit



## OBD-II Diagnostic Tool

ELM327  
With Bluetooth  
Data Connection



## Mounting Hardware and Cables



# Mileage Based User Fee

**Minnesota Road User Fee Test**

**MnDOT Drive**

View Reports

Launch CoPilot

Change Settings

Help Version 09

**Reports**

View Estimated Fees

View Trip IDs

Help Version 09

**Estimated Mileage and Fees**

Accumulated Miles and Fee From  
12/10/2010 2:34 PM

Miles: 42  
Fee: \$1.26

For detail MBUF Reports, please visit [www.intellidrivemn.com](http://www.intellidrivemn.com)

Help Version 09

# Cloud-Based Data Warehouse

**Minnesota Road Fee Test** administrator portal

**Invoice Information**

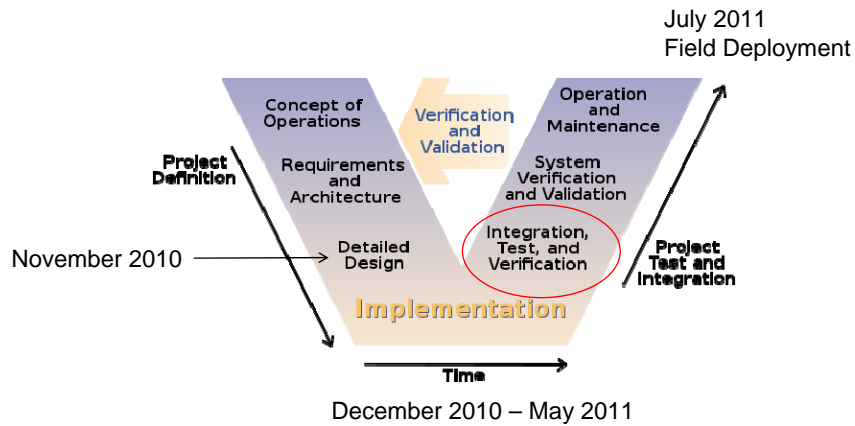
Name: Burns, Matthew G      Status: PaymentComplete      Invoice ID: 2  
 Invoice Date: 4/22/2011      Due Date: 5/5/2011      Total Miles Driven: 13.05  
 Total Charges: \$0.13

**Invoice Detail**

MBUF Category	Miles in Category	Use Rate	Effectivity Date	Total Zone Charges	Action
Ohio-NonInterstate-OFF-WEEKDAY	6.25	\$0.0100	4/20/2011	0.06	Ed
Ohio-Interstate-OFF-WEEKDAY	6.79	\$0.0100	4/20/2011	0.07	Ed

# Current Status and Schedule

- Current Status
  - Moving into Integration, Test, and Verification



Questions?