



New Road Financing Model: A Distance Based Charging System

Presented to

*Electric Vehicle Stakeholder Meeting
Of the Road User Fee Task Force*

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Purpose of this Presentation

- Communicate why RUFTF and ODOT are seeking a funding alternative to the fuel tax
- Explain RUFTF's and ODOT's intentions with regard to application of a vehicle miles traveled tax to highly fuel efficient vehicles'

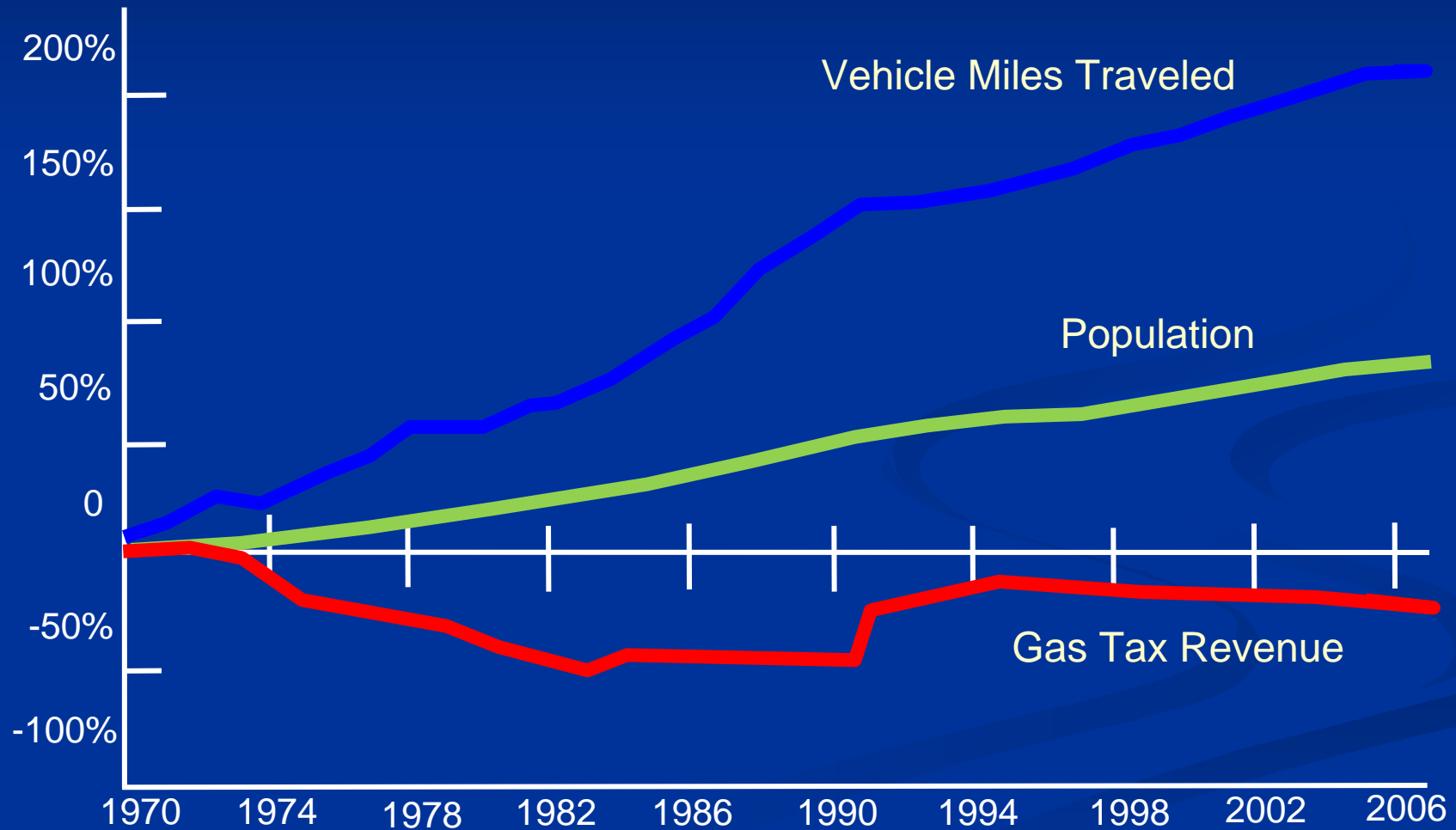


Transportation Funding in the Age of Fuel Efficiency

- Federal government and state fuel tax receipts are in decline and this decline is permanent
- Standard vehicles with 100 percent electric motive power entered marketplace in 2010
- Plug-in hybrid vehicles enter marketplace in 2012
- CAFE standards for 2025 raised 80 percent in July 2011



Revenues have not kept pace with VMT growth

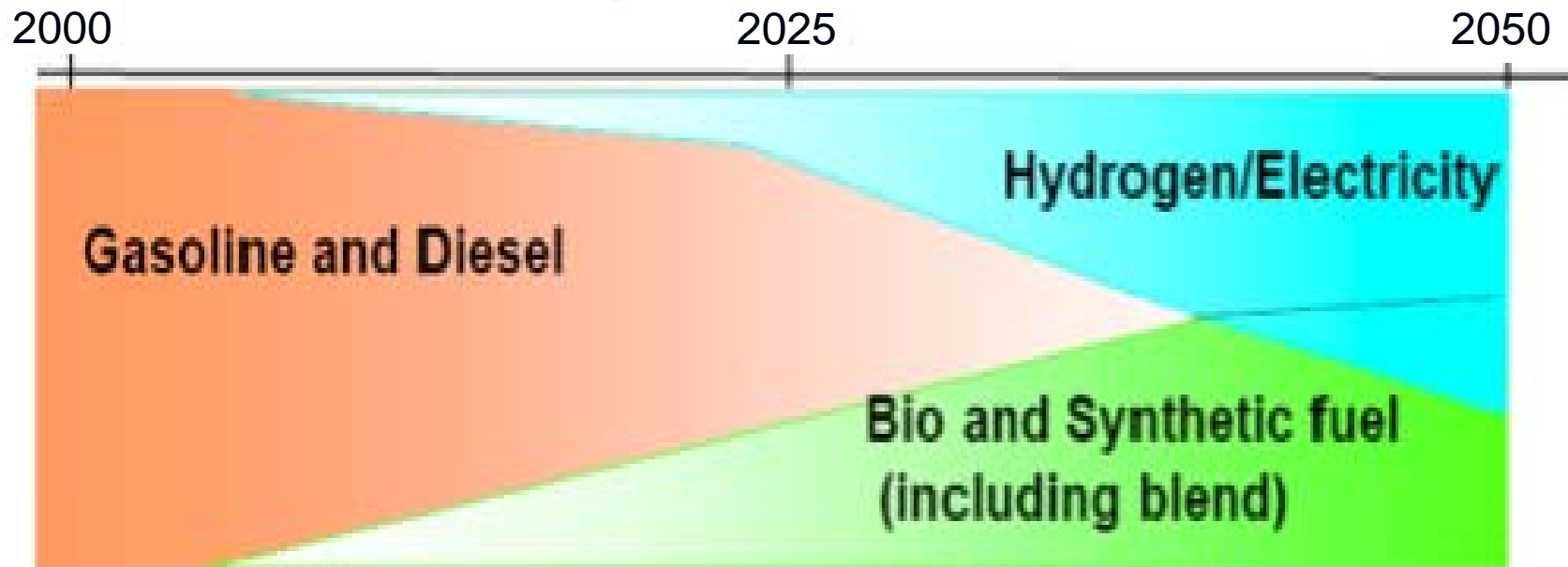




For the near to mid-term future, gasoline and diesel will be the main automotive fuel

The US has instituted policies to drastically reducing fuel consumption and CO2 emissions of light vehicles

Automotive fuel perspective



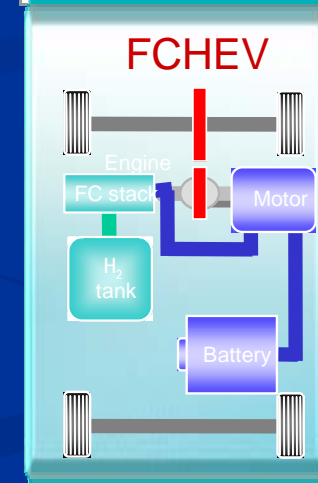
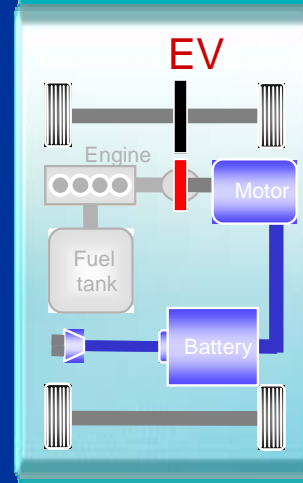
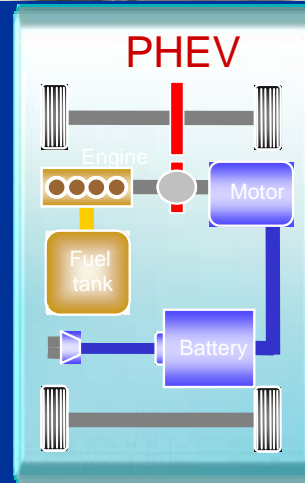
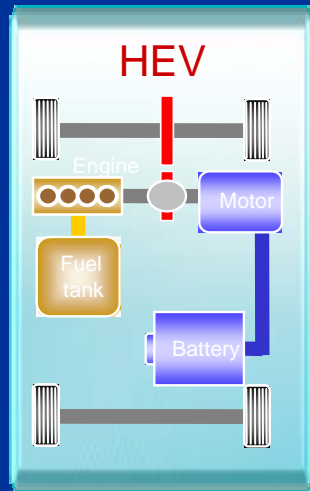


Choice: Hybrid Technology Strategic

(with applications in many future technologies)



Using hybrid technology for PHEV, EV and FCHEV





Effect of improving fuel efficiency when State fuel tax and VMT are held constant

Current (EMFAC 2007)

1 million auto and light truck VMT
 ÷ 19.9 mpg
 = 50,250 gallons of gasoline
 × 31¢ Oregon State fuel tax
 = \$15,578 in nominal revenues



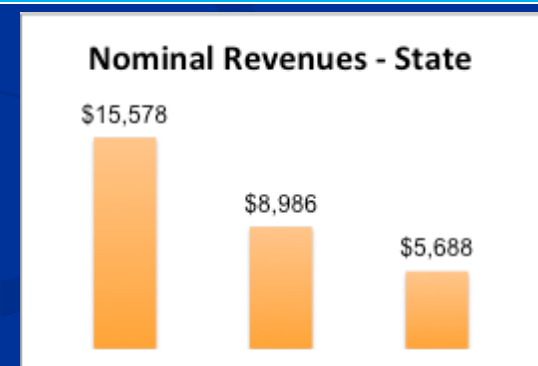
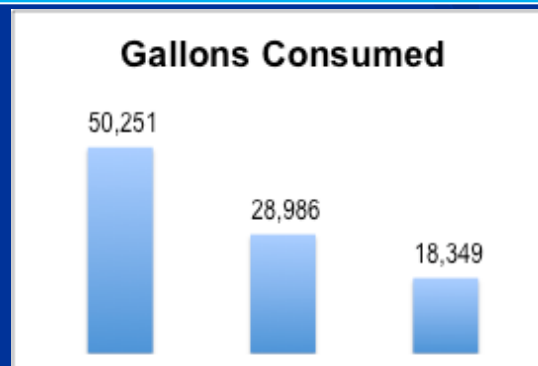
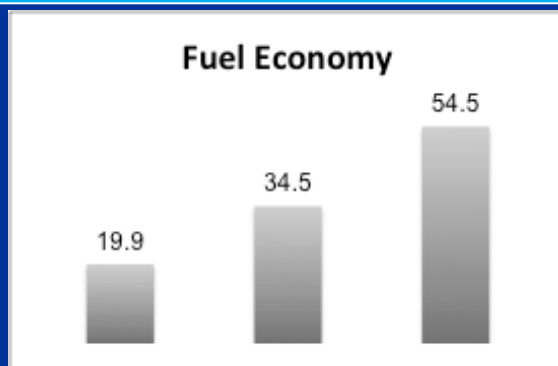
Est. 2016 CAFÉ Standard

1 million auto and light truck VMT
 ÷ 34.5 mpg (mandated)
 = 28,986 gallons of gasoline
 × 31¢ Oregon State fuel tax
 = \$8,986 in nominal revenues



Est. 2025 CAFE Standard

1 million auto and light truck VMT
 ÷ 54.5 mpg (mandated)
 = 18,349 gallons of gasoline
 × 31¢ Oregon State fuel tax
 = \$5,688 in nominal revenues





Road User Fee Task Force

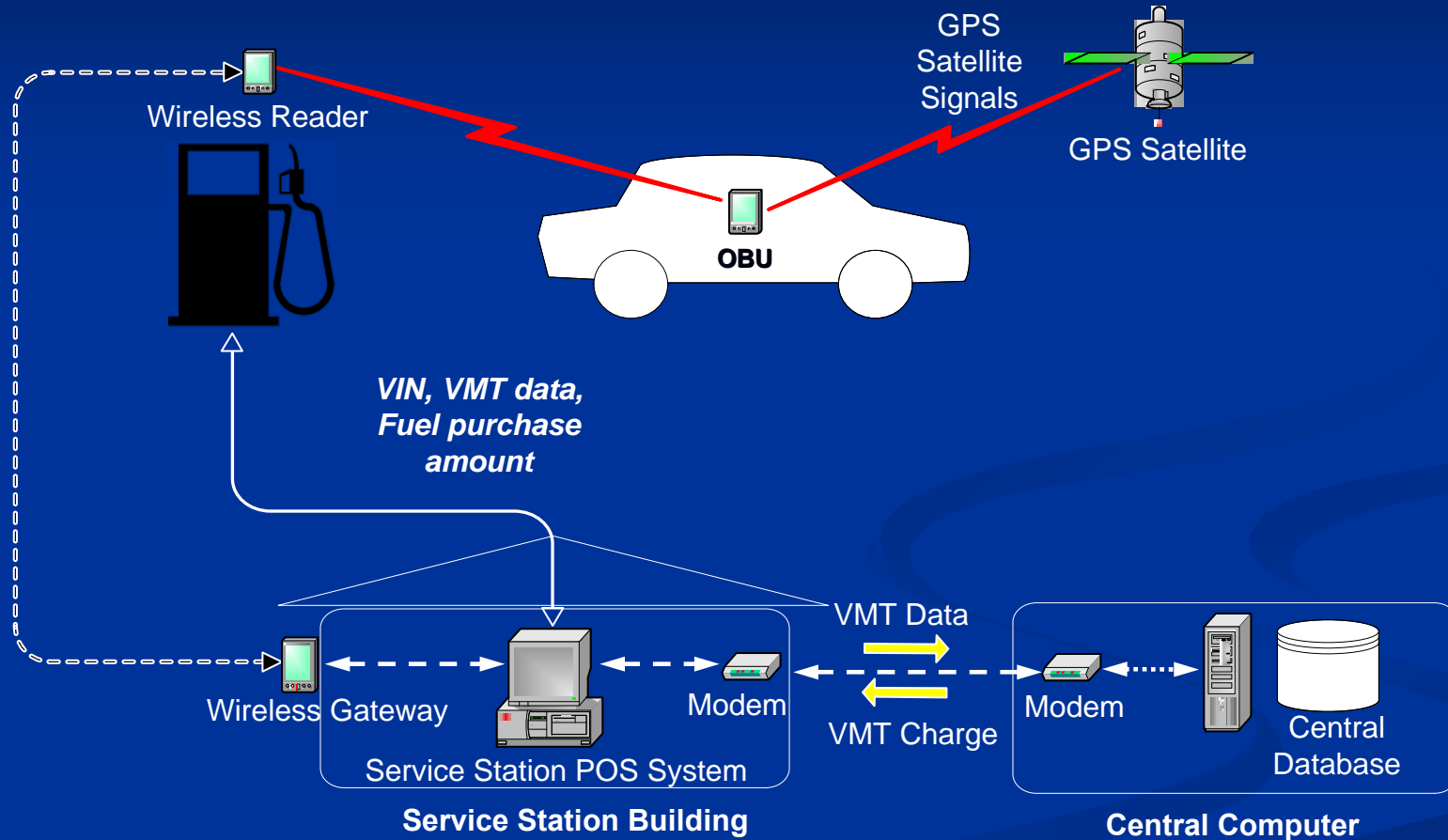


Legislative Mandate

“To develop a design for revenue collection for Oregon’s roads and highways that will replace the current system for revenue collection.”



The Old Vision: A Pay-at-the-Pump Model





The Receipt

CSF

R# 1 S# 1 T# 882316 10:55 AM
06/09/06

Leathers Fuels
11421 SE Powell Blvd
Portland, OR 97266

Pump# 1 Unleaded		
19.50 @ 2.549		49.71
ST Fuel Tax @ .24		(4.68)
VMT Fee :		5.12
Rush Hour :	40	
In-Oregon :	28.6	
Non-Oregon:	0	
No Signal :	0	
	Subtotal	50.15
	Total	50.15
	Cash	50.15

Thank You !

Fuel tax deducted from
fuel purchase price

Mileage fee imposed as
part of fuel purchase



National Support for VMT

- National Surface Transportation Policy & Revenue Study Commission, 2007
- American Association of State Highway Transportation Officials, 2008
- National Surface Transportation Infrastructure Financing Commission, 2009
- Miller Commission, 2010

National Surface
TRANSPORTATION POLICY
AND REVENUE STUDY COMMISSION



NATIONAL SURFACE TRANSPORTATION
INFRASTRUCTURE FINANCING COMMISSION



Assessment of Pay-at-the-Pump Model

Critique

- Long period for development and implementation
- Implementation potentially complex and expensive
- Slow technological evolution
- Does *not* cover vehicles not visiting commercial fueling stations
- Public concerns about privacy
- Public concerns about fairness, equity and how system would work



Requirements for an Acceptable VMT System

- No mandate. Government should not mandate or push motorists to particular technology
- Choice. Motorists should choose collection method from several options to meet individual preferences
- Auditable. Keep it fair by limiting cheating
- Open. Allow technologies to evolve
- Privacy. Allow motorists to protect privacy
- Cost efficiency. For motorist and ODOT
- Minimize disruption to the marketplace
- Administration alternatives. ODOT and private sector entities



Observations Concerning Mobile Technologies Circa 2011

- Large numbers of motorists use all electronic toll technology
- Citizens around globe apprehensive about mandates for GPS in passenger vehicles
 - The United States
 - The United Kingdom
 - The Netherlands
 - Singapore
- Citizens around globe use GPS in mobile phones purchased in marketplace
- Mobile phone/computer technologies evolves with consumer demand
- Market for smart devices in passenger vehicles now emerging





New Goal: Build a Road User Charging System Based on Existing Realities of the Marketplace

- **Motorist Choice for Compliance.** Enable motorist choice for method of compliance from certified options
- **No Mandate for GPS.** Enable options for wireless reporting of mileage either undifferentiated or differentiated by location
- **Open Technology Platform.** An open system for data collection that allows technologies to evolve
- **Public Private Partnerships.** Tap into market forces to allow the public to *choose* from government or private sector provision of on-vehicle technologies, data collection and payment services



What the Public Wants

Keep it simple!

Problem

Simple is in the mind of the individual



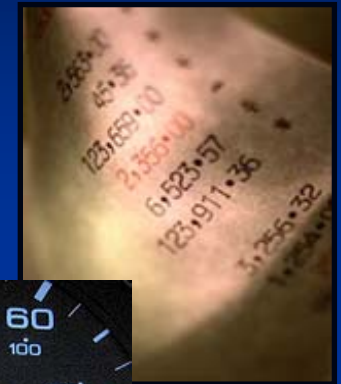
Four Potential Reporting and Payment Methods

On Board Electronic Reporting Options

- **Basic.** Wireless transfer of mileage data directly from odometer
- **Advanced.** Wireless transfer of mileage data from on-board unit with vehicle location capability

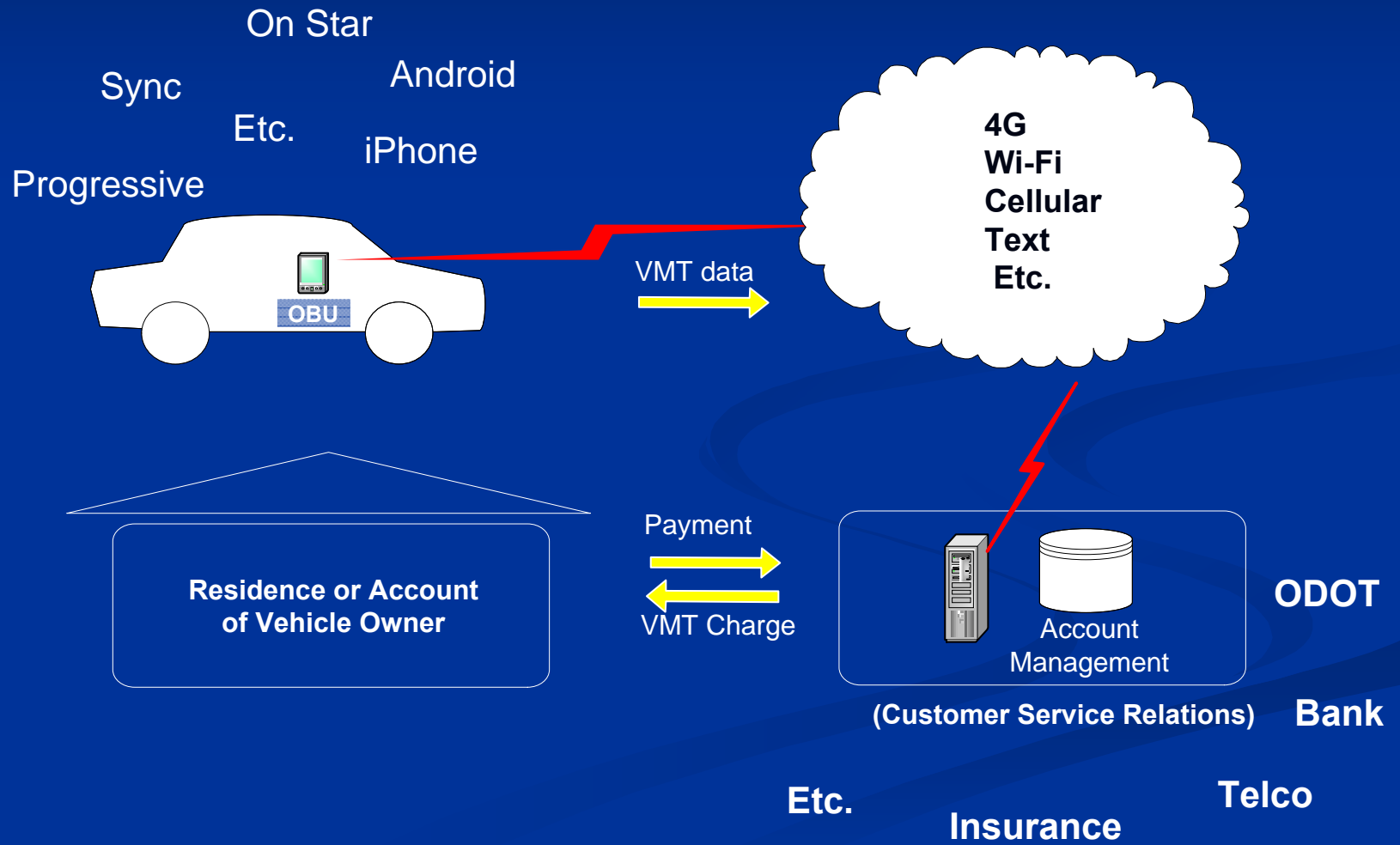
Other Reporting Options

- **Flat Annual Tax.** Purchases unlimited mileage
- **Self Reporting.** Periodic reporting of mileage via on-line form





Cloud Reporting Under an Open System





VMT Work Underway in Oregon

- **Assessing methods for compliance**
 - Effectiveness
 - Administrative viability
 - Administrative costs
 - Enforcement capabilities

- **Technology and systems**
 - Integration with other systems
 - Business rules
 - Market rules
 - Common standards
 - Certification agency

- **Preparation of Legislation for 2013**
 - Motorist choice of compliance method





Why Start With Evs?



- Strong policy case for application of VMT to plug-in hybrids and electric vehicles
- Enactment of a small, partial program to electric vehicles will
 - Enable development of the mileage tax collection system in a small risk environment
 - Enable collection system to grow as electric vehicle market grows
 - Allow the motoring public to view an actual mileage use fee collection system in operation
 - Potentially provide the legislature with confidence to add vehicle groupings as comfort with mileage fee system grows



Oregon Road User Charge Legislation 2011

House Bill 2328 B Engrossed

- Require owners of electric vehicles and plug-in hybrids vehicles to either periodically report miles driven or pre-pay an annual amount in lieu of reporting
- Direct Oregon DOT to develop compliance methods, one of which must not involve vehicle location technology
- Road user charge to begin July 2015 for 2016 model year
- Transitional rate of 0.85 cents per mile, increasing to 1.56 cents per mile in July 2018
- Direct Oregon DOT to establish standards under an open system for technology used and methods for identifying vehicles and reporting miles driven.
- Allow creation of public private partnerships for on-board technology, mileage data collection and payment collection
- Protected personally identifiable information
- Establish offsets or refunds of gas tax paid and driving on private property



EV Stakeholder Issues List

No Complaints about:

- Lack of GPS mandate
- Opportunity to use GPS if chosen by motorist
- Open system architecture
- Providing motorists compliance options to choose from
- Penalties for tampering
- Penalties for false reporting
- Collection of mileage tax through public private partnerships
- Allocation of revenues 50/30/20
- Transitional rate to eventual full rate
- Reporting and billing cycles based on circumstances of motorist
- Vehicle dealers exempted from mileage tax



EV Stakeholder Issues List

- **Who are the Responsible Persons (e.g. those who pay the mileage tax)?**
 - Vehicles other than EVs and PHEVs should be added to those responsible for paying the mileage tax
 - Non-resident motorists should pay the mileage tax

- **What should be the operative date?**
 - What mechanisms can be used to protect the EV market in the early adoption stages?
 - The start date should depend on market penetration levels (perhaps 1%). How can this be recognized as having been reached?



EV Stakeholder Issues List

- **What should be the rate level and structure for the mileage tax?**
 - A rate of 1.56 cents per mile is too high; the rate should be set at the equivalent level that the most fuel efficient HEV pays in gas tax.
 - The rate should be structured to incent adoption of EVs or, alternatively, act as a disincentive to the internal combustion engine. Should there be multiple tiers to reflect efficiencies?
 - The rate should be variable for EVs, based on weight.
 - The rates should be phased in based on market penetration.
 - Query: should the flat fee alternative be an average rate or a high rate based on unlimited miles.



EV Stakeholder Issues List

■ What are the methods of compliance?

- How difficult will it be to comply with the mileage tax reporting and payment requirements?
- How frequently will a responsible person have to report miles driven and by what methods?
- How frequently will a responsible person have to pay the mileage tax?
- Will the system make a push to use of technology to report mileage?
- Motorists should have a non-OBU based method of self-reporting mileage.
- What will be the expense for electronic reporting via the odometer?
- What will be the inconvenience of electronic reporting via the odometer?
- What will be the expense for electronic reporting via vehicle location device (e.g. GPS)?
- What will be the inconvenience of electronic reporting via vehicle location device (e.g. GPS)?

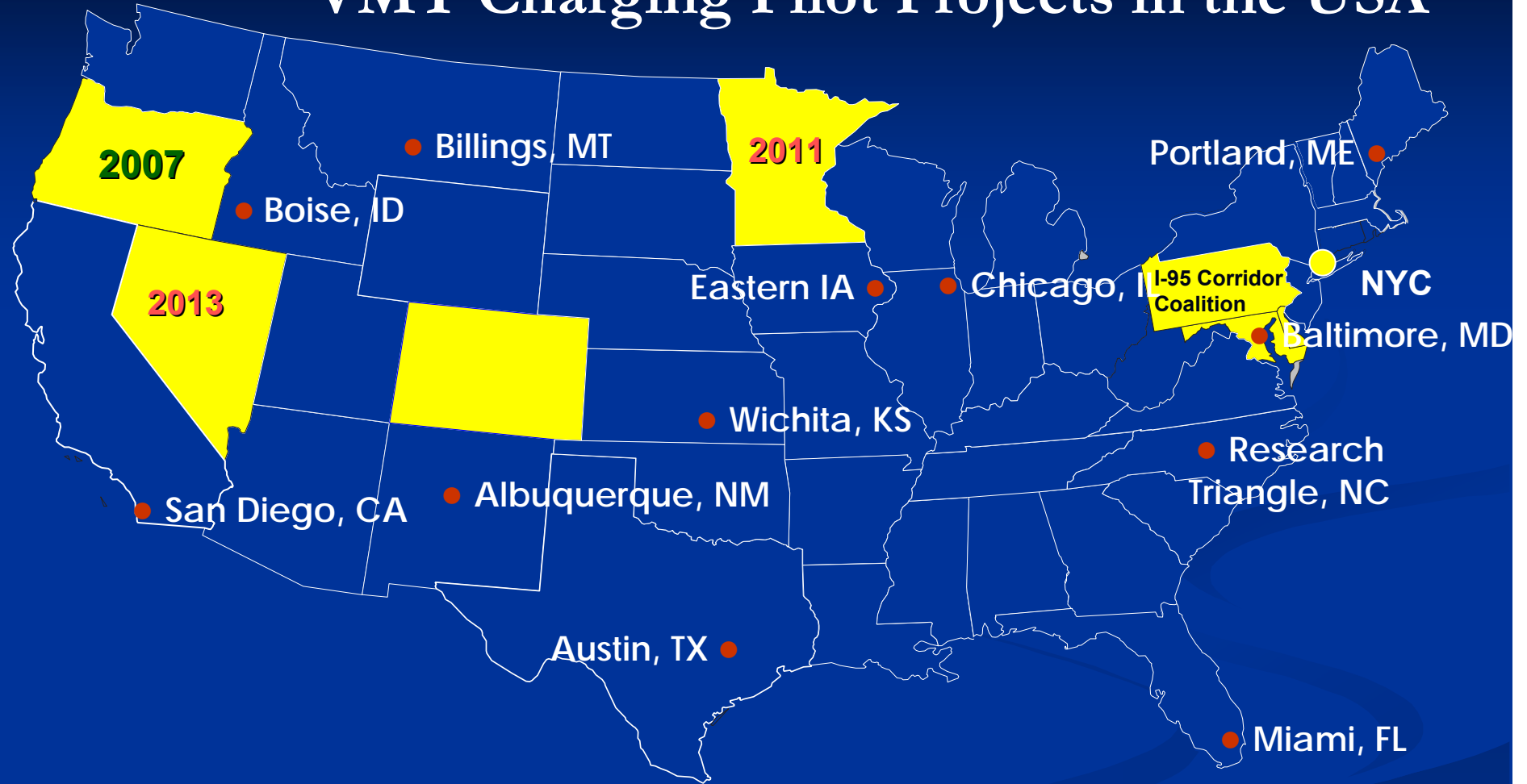


EV Stakeholder Issues List

- What are appropriate penalties?
 - Penalties should not be too severe.
- How should private information be protected?
- How difficult will it be to obtain a refund or offset?



VMT Charging Pilot Projects in the USA



● University of Iowa Field Tests *(completed 2010)*

■ Pilot projects completed, underway and under development