



Road Maintenance - Future Financing Models

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Conference on Operation, Maintenance and Tolling in Road Sector

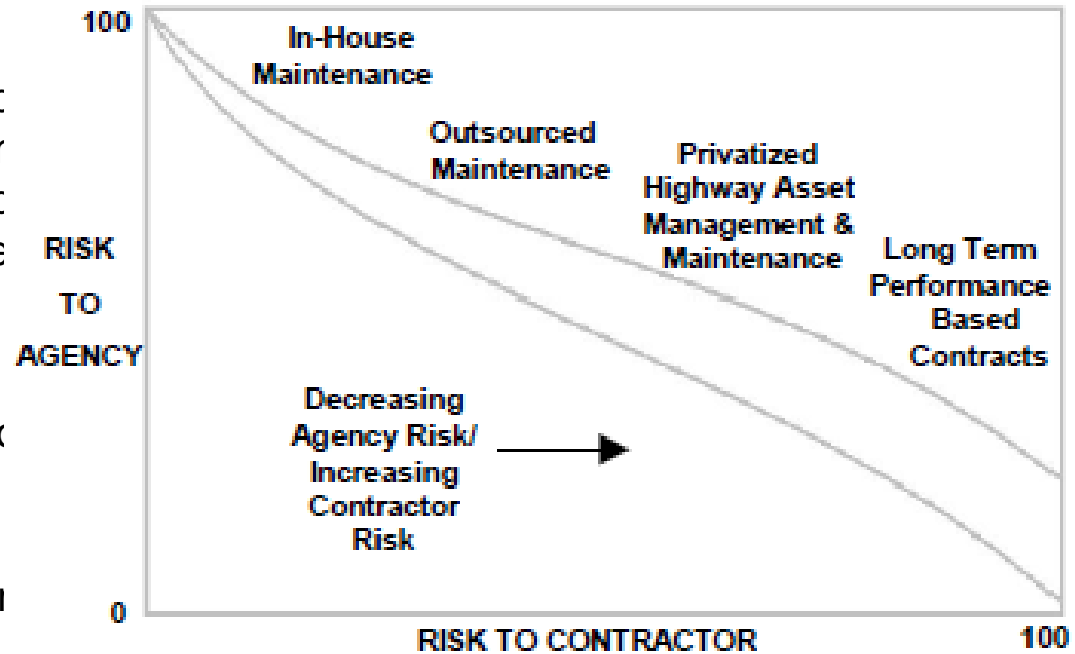
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Presentation

- Contractual Procedures to Involve the Private Sector
- Shift to Performance Based Contracts and Concessions
- Performance Based Contracts in various countries
- Concessions in various countries to manage funding of Finances for Maintenance

Contractual Procedures to Involve the Private Sector

- Cost Based Pricing
 - Cost base or cost-reimbursable contracts where the payments are based on actual costs (or book accounting) plus overhead and profit
- Price Based Pricing
 - Lump sum - payment based on a single price for the total work
 - Admeasure - payment based on the quantity of completed work and tendered rates (bill of quantities)
 - Performance-based contracts - payment based on performance (results) achieved.



Why performance (end-product, functional, results) specifications and or concessions

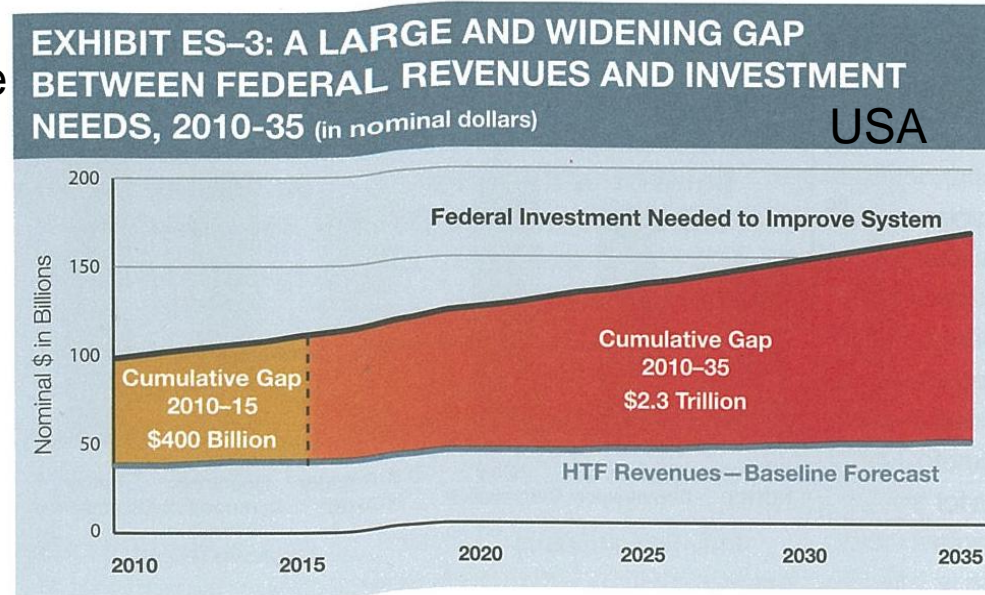
- Performance Based Contracts
 - Reduced effort to measure the amount of works carried out.
 - Avoiding frequent claims and contract amendments to increase quantities of activities which have plagued some traditional contracts.
 - Increased client focus: pay on the basis of user-related performance indicators.
 - Increased responsibility to contractors stimulates innovative capacity.
 - scope for the contractor to offer innovative solutions to maintenance needs
- Concessions
 - Benefits of Performance Based Contracts
 - Mode of Financing of Maintenance
 - Risk Allocation
 - Improved efficiency and/or lower costs of O&M due to private sector flexibility
 - Scope for the concessionaire to offer innovative solutions to maintenance needs

Performance Based Contracts in various countries

- **Long Term Performance-based Contracts in Australia and New Zealand**
 - New Zealand Australia – medium term (3-5years) to long term (10yrs)
- **Warranty Contracts in the United States**
 - a form of performance-based contract
 - reduce the amount of highway agency resources
 - reallocate performance risk;
 - increase contractor innovation
 - increase the quality of constructed products
 - reduce life cycle costs of highway projects.
- **Performance-based Contracts in Argentina**
 - “Contratos de Recuperacion y Mantenimiento” (CREMA) in Argentina provide an example of area wide performance-based contracts.
 - Each contractor – 100-300km

Why Concessions for O&M

- Across the globe the Maintenance needs have increased with time
- There is a gap between available funding for the maintenance and the requirement of funds
- Alternate modes of funding need of the hour.
- OMT Concessions in India
- Concessions in Argentina/Brazil
- VMT in USA



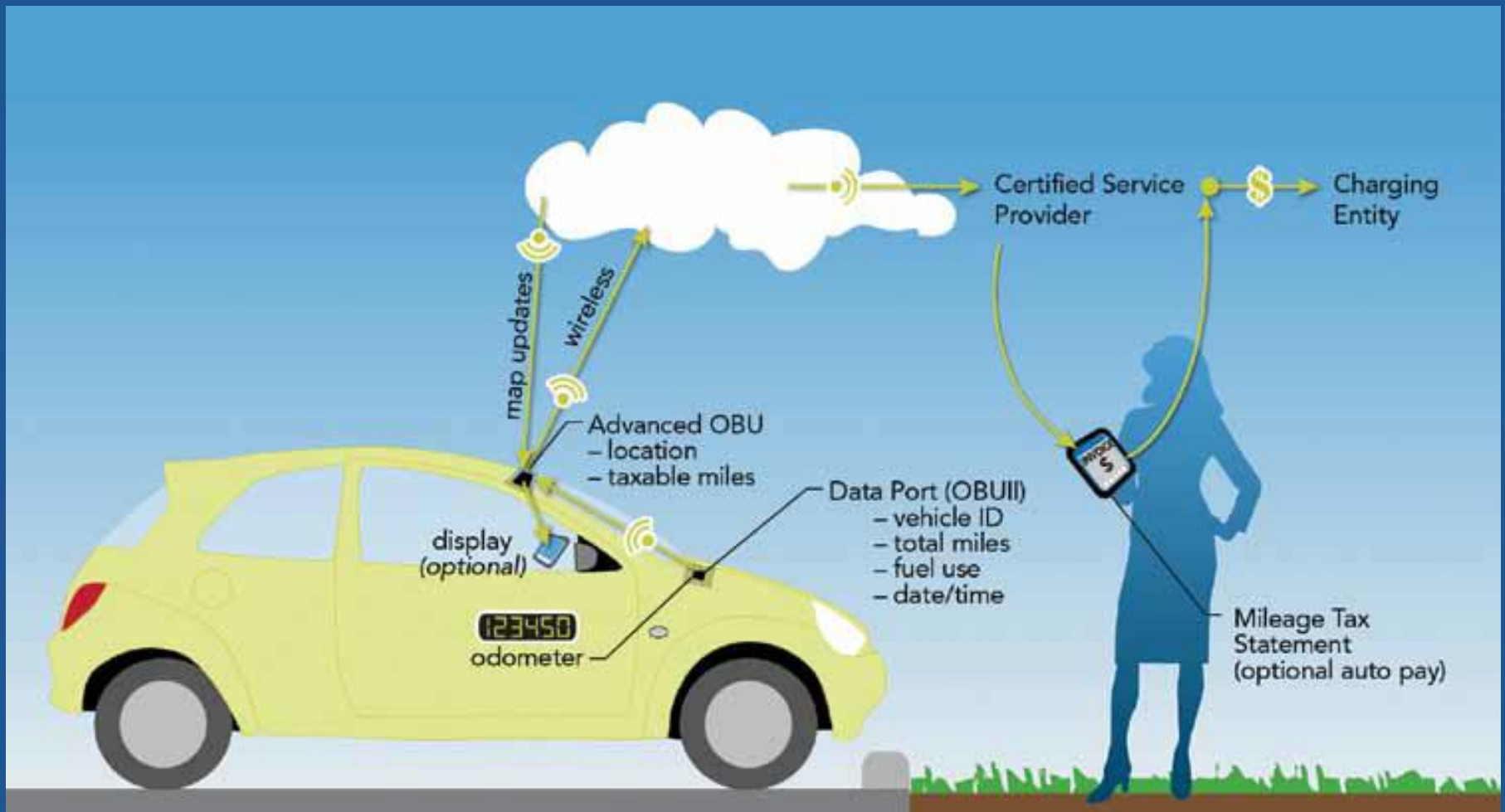
Concessions in various countries to manage funding of Finances for Maintenance

- **Concessions for Improved Asset Management**
 - financial resources required to expand, maintain, and operate their country's highway networks and other transport infrastructure
- **Concessioning Maintenance and Rehabilitation in Argentina/Brazil**
 - Concessioning on the major road network started in 1990 – 12 year concessions
 - right to collect tolls, the
 - Concessionaires to undertake a program of maintenance, rehabilitation, and capacity improvements.
- **OMT Concessions in India**

Other Funding Mechanisms in Use or Being Considered Elsewhere

- **Vehicle Miles Traveled (VMT) Fees**
- **Congestion Districts**
- **Carbon Taxes**
- **Weight Distance Taxes**
- **Tourism Taxes Dedicated to Transportation**
- **Transportation Utility**
- **Innovative State and Local Funding Mechanisms tried in USA**
 - **Arizona: Lottery Funding for Transportation**
 - **California: Self-Help Counties (SHC)**
 - **Nevada: Fuel Tax Indexing**
 - **Utah: Local Transportation Corridor Preservation Fund**

Oregon Innovative Partnership Program— Oregon Department of Transportation (ODOT)



Oregon Innovative Partnership Program – CH2M HILL

Scope

- Objective: CH2M HILL was to provide expert advice and services for the Oregon Innovative Partnership Program in support of
 - flexible road pricing,
 - electrical vehicle charging, and
 - renewable energy efforts.
- Briefly it cover the following scope:
 - developing a state-wide system for collecting VMT-based road user taxes; toll system
 - planning project validation services for considering a wide range of measures, including technical, economic, and schedule feasibility;
 - policy and institutional considerations;
 - open system designs;
 - business cases and rules for tolling and pricing; expandability; environmental impacts;
 - the associated performance measures for these projects and programs.
 - providing planning services to advance the vision, position, and goals of the solar highway program and similar renewable energy and distribution projects.

- **Vehicle Miles Traveled (VMT) Tax**
 - is a policy proposed in the United States of taxing motorists based on how many miles they have traveled.
 - It has been proposed as an infrastructure funding mechanism that would eventually replace the fuel tax

The On Board Unit for VMT Charges



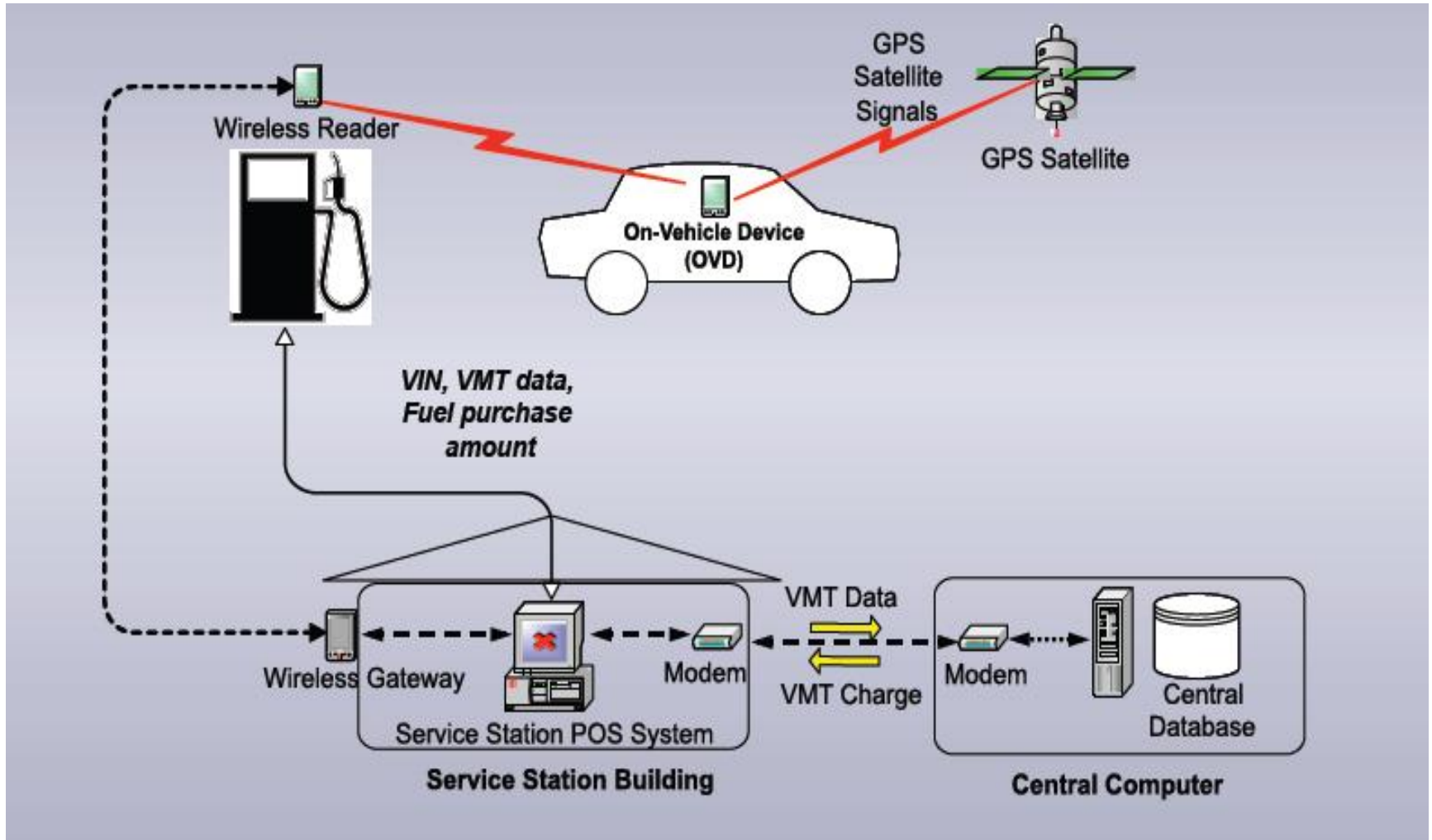
Oregon's Pilot



- No travel coordinates transferred
- Mileage calculations occur on-device
- Only summary data transferred
- May or may not have GIS map

- Travel coordinates transferred
- Mileage calculations occur at central computer
- No GIS map

Oregon's Pay-at-the-Pump Model – A Closed System



A Closed System

- “A closed system is an internally integrated system controlled by a single entity with essential components that cannot be substituted by other external components which could perform the same functions”
- The public concern in the system
 - Confidence in system
 - Efficiency
 - Fairness
 - Perceptions of large and costly bureaucracy
 - Rate structure
 - Flat rate
 - Rate equity
 - Rural Driving

- **Solutions to Public Concerns**
 - Make the data collection and payment system known
 - Design the data collection and payment system to access existing processes familiar and acceptable to the public
 - Provide choices to motorists

A new Implementation Vision for VMT Charges

- An open system technology platform with common standards that allows on board unit technology to evolve
- No government mandate for GPS or other on-board unit with vehicle location technology
- Tap into market forces to provide data collection and payment services thereby allowing the public to choose
 - Means by which they report mileage
 - On-board technology to suit needs
 - Method of invoicing and payment

Open System

An open system is an integrated system based on common standards and an operating system accessible to the marketplace whereby components performing the same function can be readily substituted or provided by multiple providers

Implementation Pathway for VMT Charges

- **1: A Simple Mandate**
 - Motorists mandated to periodically provide mileage data to billing agency
 - Motorists choose manner of compliance from approved methods
- **2: An Open Technology Platform**
 - Government agency develops an open network and available operating system based on common standards for on board technologies and data collection systems
 - Government agency sets common standards for invoicing and payment systems
 - Government agency sets certification process and tolerances for common standards
 - Government agency certifies external service providers

Implementation Pathway for VMT Charges

- **3: Data collection under open system**
 - Government agency requires electronic odometers to have wireless data transfer capability
 - Market provides on-board data collection options
 - Motorists accept results of chosen method of data generation
 - Government agency audits and enforces

- **4: Invoicing and payment under open system**
 - Government agency provides basic invoicing and payment system and acts as provider of last resort for some accounts
 - Government agency approves alternative invoicing and payment protocols under an open system
 - Private sector provides alternative invoicing and payment options and management of accounts
 - Motorists accept results of chosen manner of invoicing and payment
 - Government agency audits and enforces payment collection system

The Opportunity – House Bill 2328

- Requires EV owners to report VMT on periodic basis
- EVs owners pay 0.6 per mile beginning January 1, 2014
- Applies to 2014 model years
- Electronic reporting from odometer

Conclusions

- To narrow down the gap between the maintenance needs and the availability of funds new innovative method of funding the road maintenance are required.

Questions