WELCOME AND INTRODUCTIONS
CONTEXT:
TRANSPORTATION FUNDING ISSUES IN WASHINGTON
Gas Tax is Not Sustainable

Gas tax: largest share of state transportation funding

• The State gas tax funds 76% of all transportation investments.

Source: Connecting Washington, January 2012.

Gas taxes are levied per gallon

• Does not rise and fall with the price of fuel
• Does not keep pace with inflation
• Declines on a per-mile basis as vehicles become more fuel-efficient

Revenue erosion and greater inequity result

• Revenues are projected to fall by more than $5 billion between 2007 and 2023

Source: Connecting Washington, January 2012.
“Risk Scenario” of Gas Tax Revenue

Risk Scenario:
- Additional $2.2 Billion drop

2005 9 ½ gas tax increase

Nov. ’09 Forecast: $1.6 Billion drop

Higher fuel economy will make this even worse

Source: Joint Transportation Committee – Implementing Alternative Transportation Funding Methods, 2009.
Oregon State Fleet Forecasts
Gas Tax Yield per Vehicle Mile

Source: ODOT – Fleet Forecast Study, OIPP, 2011
## Evolution of Washington State Transportation Funding Options

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007 – Long-Term</td>
<td>Long-Term Transportation Financing Study</td>
<td>Vehicle-miles traveled fees among the long-term recommendations</td>
</tr>
<tr>
<td>2009 – Implementing</td>
<td>Alternative Transportation Funding Methods</td>
<td>Analyzed different mid- and long-term funding methods, including vehicle-miles traveled fees</td>
</tr>
<tr>
<td>2010 – Washington</td>
<td>Transportation Plan; 2012 – Connecting Washington</td>
<td>Recommended further exploration of vehicle-miles traveled fee</td>
</tr>
<tr>
<td>2013 – Washington State</td>
<td>Road Usage Charge Assessment</td>
<td>To be determined</td>
</tr>
</tbody>
</table>
STEERING COMMITTEE
ORGANIZATION
STEERING COMMITTEE
CHARGE

ROLES AND RESPONSIBILITIES
Legislative Directive: HB ESHB 2190

Transportation Commission to assess the feasibility of transitioning from the fuel tax to a road usage assessment

Required activities:

» Review relevant reports and data related to models of road user assessments and methods of transitioning to a road user assessment system

» Analyze the research to identify issues for policy decisions in Washington

» Make recommendations for the design of system wide trials

» Develop a plan to assess public perspectives and educate the public on the current transportation funding system and options for a new system

» Assess technology, agency administration, multistate and Federal standards, and other necessary elements
Implementing the Legislative Directive

Prior studies explored a menu of funding alternatives.

Legislature identified road usage charges as one potential approach.

Steering Committee makes recommendations to Transportation Commission.
Who We Are

- 20-member Steering Committee
- Statewide representation, no region dominates
- Gives voice to the stakeholder community
  - Commissioners
  - Legislators
  - Public sector
  - Private sector
- Meets four times through January, then two more times through June 2013...if the project moves beyond January 2013
Our Charge

Legislative funding to

- Transportation Commission
  - “Solely to determine the feasibility of transitioning from the gas tax to a road user assessment system of paying for transportation”

- WSDOT
  - “Solely to carry out work related to assessing the operational feasibility of a road user assessment, including technology, agency administration, multistate and Federal standards, and other necessary elements”

Both efforts combined and under guidance of Steering Committee, which will make recommendations
Implementing Our Charge

By January 2013, make recommendation to Legislature

» Is road usage charging feasible? If so…

» A research and development plan and proposed budget for the 2013-15 fiscal biennium
  – Examine the issue in more depth
  – Experiment with such a system through technology demonstrations, pilot projects, or system trials either separately or in conjunction with other states

Only then might the Steering Committee make a recommendation for a specific road usage charge program

No decisions have been reached about whether Washington State will pursue road usage charging
Roles and Responsibilities

- Full Legislature
- Governor
- Transportation Commission
- Steering Committee
- Cambridge Systematics Consulting Team
- WSDOT

Washington State Road Usage Charge Assessment
FACETS OF THE STUDY;

WORK PLAN AND TIMELINE; &

DESIRED OUTCOMES
Three Facets of the Study

- Policy assessment
- Public opinion/attitude assessment
- Technical/operational assessment
What is "Feasible"?

Desirable?

Feasible?

Possible?
## Schedule through January 2013

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date</th>
<th>Primary Topics</th>
</tr>
</thead>
</table>
| 1       | September 13, 2012 | Steering Committee organization  
Definitions and report on road usage charge activities elsewhere  
Policy considerations in Washington State  
Potential technologies  
Public acceptance issues  
Steering Committee goal setting and criteria |
| 2       | October 30, 2012 | Technology, administrative, and standards assessment  
Preliminary assessment of policy issues  
Preliminary road usage charge concepts for consideration |
| 3       | December 4, 2012 | Draft Preliminary Feasibility Assessment Report  
Draft preliminary work plan and budget |
| 4       | January 11, 2013 | Final Preliminary Feasibility Assessment Report  
Final preliminary work plan and budget  
Draft communications materials for use at Legislative hearing |

*Note revised date*
## Schedule after January 13

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Date</th>
<th>Primary Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Date TBD: March 2013</td>
<td>Refined work plan and budget based on legislative feedback</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preliminary analysis or preparation for future system test or pilot</td>
</tr>
<tr>
<td>6</td>
<td>Date TBD: May 2013</td>
<td>Final analysis or preparation for pilot</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Draft Final Report (policy parameters, public opinion/consumer acceptance assessment, preliminary operational concepts)</td>
</tr>
</tbody>
</table>
Committee Products

January 2013: Steering Committee recommendations to the Legislature and Governor

- Feasibility assessment…if feasible, then…
- Research and development plan
- Proposed budget for the 2013-15 fiscal biennium

June 2013: Progress Report

- Policy Parameters
- Public opinion and consumer acceptance parameters
- Preliminary operational concepts
DRAFT COMMITTEE OPERATING PROCEDURES
Draft Operating Procedures

- **Consensus decision-making**
  - Goal is for unanimous consensus
  - Otherwise, majority opinion
  - Differences of opinion noted in recommendations

- **Please participate in every meeting**
  - If absent, read materials and meeting notes before next meeting
  - Alternate may attend and listen, but not participate or vote

- **Statements of absent members allowed on an agenda item**
  - Provide statement to Chair who will read

- **Topics not critical to current discussion put in “parking lot”**
  - Parking lot items reviewed at end of meeting for action
Draft Operating Procedures (continued)

- Meeting summaries provided on FTP site
  - Review and comment before posting on public web site

- Media inquiries go to Chair or State Project Director
  - Please let process reach its conclusion before describing potential strategies or concepts
  - Bring issues/concerns to Steering Committee before raising with others

- Members that need to consult with their organizations before making or endorsing recommendations should do so in advance of a meeting
  - Understand issues or concerns and communicate to Steering committee

- Recommendations to capture the Steering Committee consensus
  - Divergent views captured in report
STEERING COMMITTEE MEMBER INTERVIEWS
Based on What You Know Today About Road Usage Charges – *What are the potential benefits?*

- Equity across all road users
- Transparent linkage between use and cost
- Stable revenue source
- Addresses erosion of gas tax revenue
- Flexibility with application (e.g., differential rates, inflation adjustment)
- Reduced VMT
Based on What You Know Today About Road Usage Charges – What are the potential challenges?

- Rate setting
- Technology (e.g., data collection, payment processing)
- Privacy concerns
- Perception of reliability and accuracy
- Implementation costs
- Capturing out-of-state drivers
- Perception of equity/fairness (e.g., urban/rural, cars/trucks)
- Educating the public
Does the Constituency You Will Be Representing Have a Perspective on Road Usage Charges?

- Understands the need for transportation network investment and additional sources of funds
- May be viewed as a toll
- Exempt public transit or make accommodations
- Access to revenues for public transit
- May be viewed as a new tax
- Treat all vehicles the same
- Environmental community is supportive, especially of congestion management
- Support of tolling in general
What Questions or Concerns Do You Hope are Addressed Through This Assessment?

- Magnitude of problem
- Implementation schedule
- Available technologies
- Implications for 18th Amendment
- Replacement/supplement to gas tax
- Implementation costs
- Revenue allocation
- Enforcement

- Identify benefits and barriers
- Cost differential for users under gas tax versus road usage charge
- Clarify the problem
- Experience elsewhere
- Equity and fairness
- Benefit/cost ratio
- Scope of budget provision
DEFINITION OF ROAD USAGE CHARGES FOR THIS ASSESSMENT
Ways to Charge for Road Use

Traditional
» Motor fuel tax
» Tolls, HOT/Managed Lanes
» Registration fees/taxes
» Weight-distance taxes

Nontraditional (from the U.S. perspective)
» Congestion charges
» Cordon and area charges
» Vignettes (stickers or electronic)
» Vehicles Miles Traveled or Engine Run Time

The sole focus of this study is “general road usage charging,” which we are defining as an alternative means of paying for the road system in general
What “General Road Usage Charging” Is

Network Wide
  » Entire network rather than for a single facility or corridor as with tolling

Charged 24/7
  » Like a basic utility

Revenue for General Highway Use
  » Revenue allocation would span a broad region or State, rather than a single facility or limited jurisdiction
What “General Road Usage Charging” Is Not

- **Congestion charging**
  - Congestion charging is limited to congested zones or corridors in urbanized areas or other heavily traveled routes

- **Tolling**
  - Road tolling is specific to particular facilities

- **Express lanes**
  - Express lanes price only certain lanes
Some Policy Objectives of General Road Usage Charging

**Primary Objective: Revenue Generation**

| Revenue Dedicated to Highways | • New Zealand  
• Washington state fuel taxes |
| Revenue Dedicated to Transportation | • U.S. fuel taxes |
| Revenue Partially Dedicated to Transportation | • Many European examples |
| Revenue Devoted to a General Fund | • Many worldwide examples |
Some Policy Objectives of General Road Usage Charging (continued)

### Secondary Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manage Demand/Congestion</td>
<td>Cordon/area pricing: Stockholm, London, Singapore</td>
</tr>
<tr>
<td>Protect Environment by Reducing Fuel Use</td>
<td>French “eco-tax”</td>
</tr>
<tr>
<td></td>
<td>London’s “Low Emission Zone (LEZ)”</td>
</tr>
<tr>
<td>Influence Travel Behavior and Other Decisions Such as Land Use</td>
<td>High fuel taxes in Europe</td>
</tr>
<tr>
<td></td>
<td>Switzerland, Austria &amp; Germany – truck tolling</td>
</tr>
</tbody>
</table>
Road Usage Charging

Two Basic Forms

- **Time**
  - Vignettes
    - Prepaid stickers & electronic

- **Distance**
  - Prepaid stickers
  - Odometer reading
  - GPS / e-hubodometer
BREAK
DOMESTIC AND INTERNATIONAL REVIEW
General Transport Policy Objectives

- Increase Supply to meet Demand
- Improve operations, maintenance & rehabilitation
- Provide more reliable journey times
- Reduce impact of incidents
- Improve safety
- Reduce congestion
- Reduce impact on environment
- Reduce energy usage
- Social equity
- Sustainability
- ‘Live ability’ or ‘Well Being’
“Wicked Problem”

Planning futures of highly dependent and interdependent systems which may create unintended consequences, both positively and negatively, in one or more of the dependencies of the system.
“Wicked Problem” (continued)
Distance/Weight Charges on Trucks

- NZ – RUC (paper based & e-Hubodometer)
- Switzerland (Tachograph w/GPS checking)
- Austria – MAUT (DSRC)
- Germany – MAUT (GPS w/GSM)
- Czech Republic – MAUT (DSRC)
- Australia – IAP (GPS)
- Slovakia – GPS
- France – Environmental Tax (GPS)
- Sweden – ARENA Project (GPS)
Cordon/Area Charges

- Durham – Cordon
- London – Area Charge
- Stockholm – Cordon
- Singapore – Strategic Road network
- Norway – Cordons
- Italy – Zonal Charges
- Manchester – Double Cordon
- HK – Multiple Cordons
- Copenhagen – Layered Cordons
- Helsinki – Layered Cordons
Road Usage Charging Policy: It Takes Time!

- UK – 1964 to present
- Singapore – 1978 to present GPS trials
- Netherlands – 1988 to 2010
- HK – 1983 to 2009
Vignettes in Europe: Stickers and Electronic

Current (Examples)
» Austria – car use of major motorways
» Czech Republic – car use of major motorways
» Hungary – all motorways electronic (ANPR*)
» Bulgaria – all motorways (cars & trucks)
» Romania – all motorways (cars & trucks)

Future
» Poland – cars and trucks (DSRC**)
» Belgium – cars (electronic vignette)
» UK – trucks for motorway network

*Automatic number plate recognition
** Dedicated short range communications or “tag and reader”
Distance Charges or Fees on Private Cars

- New Zealand (operational since 1977)
  - Diesel and alternate fuel vehicles ONLY
  - Paper based on Odometer or GPS/e-hubodometer by private service provider

- Oregon
  - Proposed legislation for high efficiency vehicles (>55mpg)
And Road User Charging since 1977
Comparative Facts – NZ and Washington

- **It is NOT part of Australia**
- 268,680 KM$^2$
- **Population:**
  - 3.95 Million Humans
  - 80 Million Sheep
- **5 degrees Celsius**
- New Zealanders are called Kiwis

- **It is NOT part of Canada**
- 66,456 Miles$^2$ or 106,951 KM$^2$
- **6.83 Million Humans**
- 52K Sheep & 1.1M Cows
- **47.9 ° (F) or 8.8 ° (C)**
Policy Overview of New Zealand Road User Charging (RUC)

Overview

» The problem – growing VMT
» Treasurer and Secretary of Transportation set rates
» Revenue dedicated to Road Transport Fund
  – All RUC fees and 50% of Gas Tax
» Land Transport Management Act changed formula

RUC’s role and approach

» Applies to all diesel and alternate fuel vehicles
» National approach – no regions
» Truck formula: weight/mass and distance
» Car formula: distance only
» Rate setting: marginal social cost analysis
» Some challenges – farming, dairy industry, logging industry
National RUC to eRUC Strategy

Need to determine long-term goals

» Best-fit technology with standards
» Open system architecture
» Interoperability to allow free roaming between providers
» Most efficient/least cost back office management system
» Advanced payment systems
» Apportion risks where they best fit
» Provider must demonstrate they can do it for less money than government (4% less)
RUC to eRUC Transition/Progression

Potential Ultimate eRUC System

Base eRUC System

Existing RUC System

Implementation Path Based on Benefits, Costs, and Timeframe Analysis
eRUC Tariff can match Policy Objectives

Key Issue: What are the objectives?

Tax/ Fee/ Charge = Vehicle Classification \times Distance Travelled

- No. Axles
- L x W x H
- Measured
- Vehicle Class
- Engine Type/ Fuel Type
- GVW
- Approx
- Actual (Odo)
- Segment
- Calculated
- Location
- Special Facilities (Toll Road, Bridge, Tunnel, etc)

Keep It Simple
**eRUC Technology Requirements**

- Evolutionary approach
  - Standards
  - Open system architecture
  - Interoperability
  - Establish low-tech base
  - User choice for high-tech
  - Market-based approach
  - Private allowed in if cheaper than government
  - Risk sharing
Road Usage Charging Next Door, Oregon
Oregon: Policy Directives in 2001
Formulate Road User Fee Task Force*

Statutory Directives:

- Reliability
- Ease of motorist use
- Reduce evasion
- Low cost implementation and administration
- Public acceptance

*RUFTF
Oregon 2006 Pilot Test
A Pay-at-the-Pump Model

Wireless Reader

GPS Satellite Signals

GPS Satellite

VMT Data

VIN, VMT data, Fuel purchase amount

Wireless Gateway

On-Vehicle Device (OVD)

Modem

Central Computer

Central Database

Service Station POS System

Service Station Building

VMT Charge
Assessment of 2006 Pay-at-the-Pump Model

- Successful, met policy directives, yet …
  - Implementation potentially complex and expensive
  - Slow technological evolution
    - “Stuck in time” – a closed system
  - Public concerns about privacy
    - Required use of vehicle location technology
  - Public concerns about fairness and equity
  - Public concerns about a costly bureaucracy
New Vision In Oregon

- **No Technology Push** – Government should not mandate or push motorists to particular technologies, especially GPS
- **Motorist Choice** – Motorists should choose from several collection methods and technologies to meet individual preferences
- **An Open System** – Allow for system technologies to evolve with marketplace capabilities and motorist preferences
- **Private Sector Account Handling** – Tap into market forces to allow the public to choose either government or private sector provision of data collection and payment services
Oregon: Policy Directives
Old versus new

- Statutory Directives (2001)
  - Reliability
  - Ease of motorist use
  - Reduce evasion
  - Low cost implementation and administration
  - Public acceptance

- RUFTF* Directives (2011)
  - High-efficiency vehicles only
  - Protect motorist personal information
  - No GPS mandate
  - Provide fuel tax credit
  - Not charge non-Oregon road miles
  - Open system
  - Public private partnerships

*Road User Fee Task Force
Oregon: Pilot Project Test/Demonstration Goals

- Starts this fall
- Validate feasibility of Road Usage Charging System
- Demonstrate
  - Viability of system fundamentals
    - Open system
    - Motorist choice
    - Private sector account handling
    - Interfaces between private sector and government
  - Vendor community’s ability to provide and implement Road Usage Charging System components
Oregon Pilot Project Test/Demonstration

Objectives

- Motorists experience an actual open system
  - Choice of OBU*/reporting methods, and technologies
  - Choice of account management provider
  - Choice of payment methodologies
  - Choice of method to receive fuel tax refund

- Effective demonstration of OBU reporting
  - Technologies and system: simple and easy to use

- Effective participation of vendor community
  - Greatest use of off-the-shelf technology
  - Allows for multiple vendors to provide solutions
  - Multiple vendors systems work together

*On board unit
Recommendations to Consider Road Usage Charging in the USA

- 2010 and Beyond Policy Recommendation – Hudson Report (9/04)
- Chamber of Commerce – Future Highway and Public Transportation Financing, November 2005
- National Conference of State Legislatures – Surface Transportation Funding: Options for States, May 2006
- National Surface Transportation Policy and Revenue Study Commission, December 2007
- National Surface Transportation Infrastructure Financing Commission, Interim Report; February 2008
- AASHTO Long Term Financing Needs for Surface Transportation, September 2007
- Transportation Transformation Group, June 2008
Studies and Field Tests of Road Usage Charging in the USA

- Puget Sound Traffic Choices Study, July 2005-2008
- Oregon Road User Fee Study & Pilot Tests, 2006-2007
- University of Iowa, Road User Study, 2007-2011
- Minnesota Department of Transportation:
  » Mileage-based User Fee Demonstration: 2004
  » Mileage Based User Fee Study, 2009-2012 (Phase1, presently Phase 2)
- Nevada Department of Transportation Mileage Based User Fee Feasibility Study, 2010 – present
- Oregon Road Usage Charge Pilot Project Study and Test/Demonstration, 2011 – present
- Southern California Association of Governments, Express Travel Choice Study, 2009 to 2012
- I-95 Corridor Coalition, Administrative and Legal Issues associated with Multi-State VMT-based Charge System, 2009-2010
Global Lessons Learned

- Establish policy and legislative framework first – then select a solution to fit policy objectives
- Understand, refine, and test your objectives – be open and communicate clearly with the public and stakeholders
- Objectives drive the technology selection, not the other way around
- Tolling is NOT Road Usage Charging
- Cars are different than trucks
- “Choice” – establish choices in technology and payment streams
- Ensure simplicity and efficiency
Global Lessons Learned (continued)

- “Open market” approach and use of certified service providers reduces overall costs and ensures system sustainability
- Minimize exemptions and consider phase-in discounts
- Clearly define what will be done with the revenues – the public wants the money to be reinvested in road transport
- Enforcement and legal appeals process are critical – taxes have more “bite” than fees, tolls, or charges
- Political will is essential
Technologies for Road Usage Charging

**Manual**
- Reading the odometer to record mileage, combined with enforcement by an officer
  - Examples: European vignettes and the New Zealand charge

**Wireless tag and reader**
- Emerged in the late 1980s for electronic tolling

**Location-based**
- Use GPS to determine vehicle location
- Include stand-alone devices, smartphones, and in-vehicle telematics

**Non-location-based**
- Devices that record and potentially transmit data about miles traveled
- Use information from automotive’s OBDII port
- Pay-As-You Drive insurance
Manual Technologies

- Proof-of-payment
  - Windshield sticker

- Enforcement
  - Annual inspections
  - Random police stops
  - Odometer fraud difficult/impossible on newer vehicles

- Examples
  - European vignette systems
  - Original New Zealand system

Main Advantage
- Manual technology is simple and does not arouse privacy concerns

Disadvantages
- Perfect enforcement difficult, leading to greater revenue leakage and higher enforcement costs
- “Lumpy” payment schedule
- Odometer accuracy not as good as you might think: +/- 2.5% or worse
Wireless Tag and Reader Systems

- Used for road usage charges in Hong Kong and Singapore
- A single tolling point costs $100K+ (~$50k x number of lanes)
- 18000-6C stickers cost ~ $1.50, traditional “hard-case” tags like EZ-Pass cost ~$10.

Advantage – well-proven for revenue collection and enforcement

Disadvantages
- The use of tags is limited to areas where readers are installed
- Relatively large overhead cost of operations
Location-Based Technologies

Based on GPS

The most common technology used in road usage charge trials

Advantages

» No expensive roadside infrastructure
» Cost effective at a large scale
» Allow easy refund of out-of-state travel
» Allow more complex pricing structures
   – zonal pricing
   – congestion charging
Location-Based Technologies

Disadvantages

- Perceived as intruding on privacy
  - Privacy Reassurance Measures
    - “Anonymize” data – guarantee location data cannot be associated with an individual
    - Never transmit location data
    - Have rigorous privacy policies
    - Require all location-based services to be offered by private companies
    - Provide a alternate choice, e.g. a manual system
    - Allow driver to turn location data off and on

- GPS can be inaccurate in dense urban areas called “urban canyons”
  - Technical solutions exist for this problem
  - Not necessarily important unless you need road-level precision
Types of Location-Based Technologies

Stand-Alone/Dedicated

- Sole purpose: compute road usage charges based on location
- Need to be wired into the vehicle
- Fairly expensive ($200+)
- May not look good

Examples:
  » truck-tolling devices used in various European countries
Types of Location-Based Technologies

**Wireless Mobile Devices**

- Smartphones that feature GPS
  - Require a backup system to be installed in a vehicle to operate when the user forgets or does not have sufficient charge in the mobile device to record the RUC
    - OBD II dongle
- Advantage – the user provides the main hardware for recording the RUC
  - More convenient and comfortable for the user
  - Less expensive for the agency operating the road usage charge
  - More user friendly and attractive
- Disadvantage –
  - Person has to own a smart phone
In-Vehicle Telematics

- Systems offered by auto manufacturers that provide navigation and other features
- Typically include GPS but can also support non-location-based road usage charging
- Examples: GM’s OnStar, Ford’s Sync, Nissan’s Carwings, and Toyota’s Entune
- Requires automaker approval
  - Automakers have not shown great interest in supporting road usage charges
In-Vehicle Telematics
Advantages and Disadvantages

**Advantages**
- Provide smooth driver experience
- Require no additional hardware in vehicle
- Cost-effective for agency
- Provides user choice

**Disadvantages**
- Automakers are concerned about the implications of road usage charges for their sales and may not be willing to support such programs
- Many vehicles do not have telematics
Non-location Based Technologies

- Devices that measure distance traveled using information from vehicles’ electronics
- Plug into a vehicle’s tester port or OBDII port
  - Small electronic port found on the driver’s side of the vehicle underneath the steering column
  - Provides a limited amount of data from the vehicle’s electronics
  - Does not provide the readout of the odometer
  - Provides the vehicle speed signal, which allows distance traveled to be calculated to a reasonable degree of accuracy
OBDII port dongles:

» small pieces of hardware that contain an electronic interface to the OBDII port and wireless transmission hardware such as a cellular or Bluetooth

» Most common kind is unit for collection of Pay-As-You-Drive (PAYD) insurance
  – Example: Progressive Snapshot

» The same dongle could provide PAYD and road usage charges
Technology Combinations and Choices

- With a location-based technology, users may be given the choice to turn location information off and on
  - They can leave location information off when they drive in-state, but turn it on when they drive out of state in order to receive the discounts
- Location-based, non-location-based, and manual systems can be combined
- Tag/reader systems do not readily combine with the other systems due to their higher overhead costs
Connected Vehicle Technologies
Potential Federal Mandate by 2013

- Vehicle-to-vehicle for safety
  - Includes GPS location, speed, direction
  - Safety Pilot

- Vehicle to infrastructure for other applications

- Could be used to support road user charge
Value-Added Services

- Any services that can be combined with RUC hardware
  - PAYD insurance
  - PAYD insurance intermediary – generate PAYD data to shop to insurance companies for lowest premium
  - Automatic loyalty – loyalty points
  - Parking payment
  - Toll payment

- Private service providers have an incentive to offer to boost profit
WASHINGTON STATE POLICY CONSIDERATIONS
LUNCH BREAK
PUBLIC ACCEPTANCE ISSUES
International Data on Public Acceptance

Source: Aggregation of public opinion surveys/polls on Edinburgh, London, Stockholm and Manchester
Cyclical Nature of RUC “Acceptability”

- Support for Road User Charging is initially low
- Pilot tests help drivers realize the benefits
- Polls drop to lowest point right before the start/implementation
- Support rapidly increases once benefit effects become visible
- Longest commuters and high-mileage consumers always strongly opposed
- 16- to 28-year-olds are strongest supporters
“The Federal gas tax, which pays for roads, transit and transportation infrastructure, increases every year”

Northeast (22%)
- Total Agree: 61%
- Total Disagree: 20%

South (34%)
- Total Agree: 58%
- Total Disagree: 24%

Midwest (22%)
- Total Agree: 54%
- Total Disagree: 33%

West (22%)
- Total Agree: 67%
- Total Disagree: 16%

Source: Building America’s Future, Public Opinion Strategies – Greenberg Quinlan Rosner Research
Fueling the Funding Debate

- Opinions about the gas tax are impacting how the Public view infrastructure funding options

- People believe the gas tax:
  » Increases with inflation
  » Is proportional to price
  » In truth, the Federal gas tax has not gone up since 1993

- The challenge is this: As long as Americans continue to believe they are putting more money into the transportation pot each year, they are going to be reluctant to support anything that resembles a tax, fee hike, or substitute for the gas tax unless they see value and benefits

Source: Building America’s Future, Public Opinion Strategies – Greenberg I Quinlan I Rosner Research
## Public Opinion in Southern California

### “Charging Concepts”

<table>
<thead>
<tr>
<th>Charging Concept</th>
<th>Favor</th>
<th>Oppose</th>
</tr>
</thead>
<tbody>
<tr>
<td>One or two lanes where traffic could move faster</td>
<td>47%</td>
<td>53%</td>
</tr>
<tr>
<td>Variable Priced Parking</td>
<td>33%</td>
<td>64%</td>
</tr>
<tr>
<td>Charging all lanes by TOD and Congestion level</td>
<td>17%</td>
<td>81%</td>
</tr>
<tr>
<td>Charging for Access to area or zone</td>
<td>20%</td>
<td>76%</td>
</tr>
<tr>
<td>Charging for total miles driven + gas tax</td>
<td>19%</td>
<td>80%</td>
</tr>
<tr>
<td>Distance based fee to replace gas tax</td>
<td>32%</td>
<td>69%</td>
</tr>
</tbody>
</table>

*Source: Fairbank, Maslin, Maullin, Metz & Associates, 2010 (320-388 WFT)*

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*Washington State Road Usage Charge Assessment*
## Southern California Public Opinion on “Features”

<table>
<thead>
<tr>
<th>Feature</th>
<th>More Likely</th>
<th>Less Likely</th>
<th>No Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensuring all funds collected are spent on transport improvements in the area they are collected</td>
<td>58%</td>
<td>22%</td>
<td>17%</td>
</tr>
<tr>
<td>Establish a citizen oversight committee to determine whether funds collected were spent efficiently, effectively, and as promised</td>
<td>54%</td>
<td>27%</td>
<td>19%</td>
</tr>
<tr>
<td>Testing a road pricing approach on a temporary basis to determine if it works</td>
<td>52%</td>
<td>35%</td>
<td>13%</td>
</tr>
<tr>
<td>Offering it as one part of a comprehensive solution to reduce traffic congestion</td>
<td>51%</td>
<td>33%</td>
<td>15%</td>
</tr>
<tr>
<td>Establishing an annual independent audit to determine whether funds collected were spent efficiently, effectively, and as promised</td>
<td>47%</td>
<td>27%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Fairbank, Maslin, Maullin, Metz & Associates, 2010 (320-388 WFT)
## Minnesota Public Opinion on “Charging Concepts”

### Acceptance of Solutions

<table>
<thead>
<tr>
<th>Top 3 box</th>
<th>Total base=734</th>
<th>High (25K+) base=95</th>
<th>Moderate (15-&lt;25K) base=295</th>
<th>Average (10-&lt;15K) base=340</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fees for high emission vehicles</td>
<td>43%</td>
<td>41%</td>
<td>38%</td>
<td>47%</td>
</tr>
<tr>
<td>Mileage-based user fee</td>
<td>23%</td>
<td>16%</td>
<td>23%</td>
<td>26%</td>
</tr>
<tr>
<td>Raising fuel taxes</td>
<td>23%</td>
<td>18%</td>
<td>22%</td>
<td>25%</td>
</tr>
<tr>
<td>Increasing vehicle tax</td>
<td>17%</td>
<td>14%</td>
<td>17%</td>
<td>18%</td>
</tr>
<tr>
<td>Increasing vehicle registration fees</td>
<td>15%</td>
<td>12%</td>
<td>14%</td>
<td>18%</td>
</tr>
<tr>
<td>Adding toll roads</td>
<td>11%</td>
<td>26%</td>
<td>27%</td>
<td>20%</td>
</tr>
<tr>
<td>Increasing general sales tax</td>
<td>9%</td>
<td>11%</td>
<td>8%</td>
<td>10%</td>
</tr>
<tr>
<td>Increasing income tax</td>
<td>6%</td>
<td>3%</td>
<td>6%</td>
<td>8%</td>
</tr>
</tbody>
</table>

### Source:
The Dieringer Research Group Inc. for Minnesota Department of Transportation, June-July 2009
Minnesota Public Opinion on “barriers”

<table>
<thead>
<tr>
<th>Reason</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairness</td>
<td>36%</td>
</tr>
<tr>
<td>Costs/Administrative overhead</td>
<td>13%</td>
</tr>
<tr>
<td>Uncertainty of outcomes</td>
<td>13%</td>
</tr>
<tr>
<td>Won’t work</td>
<td>12%</td>
</tr>
<tr>
<td>Inconvenience</td>
<td>11%</td>
</tr>
<tr>
<td>Loss of privacy</td>
<td>9%</td>
</tr>
<tr>
<td>Enforcement issues</td>
<td>7%</td>
</tr>
<tr>
<td>Base for fees</td>
<td>7%</td>
</tr>
<tr>
<td>Not needed</td>
<td>5%</td>
</tr>
<tr>
<td>Collection method</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: The Dieringer Research Group Inc. for Minnesota Department of Transportation, June-July 2009
Minnesota Public Opinion on “Solutions”

“High Tech” = GPS device  “Low Tech” = Odometer reading

Source: The Dieringer Research Group Inc. for Minnesota Department of Transportation, June-July 2009
## Minnesota Public Opinion on “Features”

<table>
<thead>
<tr>
<th>Why do you prefer this approach?</th>
<th>High Tech (K) base=146</th>
<th>Low Tech (S) base=423</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convenience (NET)</td>
<td>39%</td>
<td>49%</td>
</tr>
<tr>
<td>Simple/Accurate</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>Fairness (NET)</td>
<td>21%</td>
<td>23%</td>
</tr>
<tr>
<td>Road maintenance paid by user</td>
<td>11%</td>
<td>18%</td>
</tr>
<tr>
<td>Collection method (NET)</td>
<td>20%</td>
<td>19%</td>
</tr>
<tr>
<td>Like the GPS idea</td>
<td>11%</td>
<td>18%</td>
</tr>
<tr>
<td>Base for fees (NET)</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Based on time of day</td>
<td>7%</td>
<td>8%</td>
</tr>
<tr>
<td>Based on type of road driven</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Enforcement issues (NET)</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>Costs (NET)</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enforcement issues (NET) 3%</td>
</tr>
</tbody>
</table>

Source: The Dieringer Research Group Inc. for Minnesota Department of Transportation, June-July 2009
Other Attitudes/Acceptance Issues

- Lack of public understanding of transport funding
- Confusing initiatives
  - 2 gas tax increases, tolling, HOT lanes, variable pricing, electric vehicle registration fees….
- Little understanding of proposed solutions vis-à-vis
  - Urban versus rural, privacy, costs, fairness….
- Commission’s 2011 statewide transportation survey:
  - 43% believe state has enough money
  - 59% support some funding increases
  - 44% support mileage fees
FACILITATED DISCUSSION:

POTENTIAL PURPOSE OF ROAD USAGE CHARGING IN WASHINGTON
FACILITATED DISCUSSION:

FEASIBILITY CRITERIA FOR USE BY THE STEERING COMMITTEE
What is “Feasible”?

Possible?

Feasible?

Desirable?
SUMMARY OF ACTION ITEMS AND NEXT STEPS