

# Washington State Road Usage Charge Assessment

Transportation Commission  
Briefing

**CAMBRIDGE**  
SYSTEMATICS

**BERK**



Washington State Transportation  
Commission



Washington State  
Department of Transportation

June 17, 2014

# **UPDATE ON LEGISLATIVE DIRECTIVE AND SCHEDULE**

# Key Points from the 2014 Budget Proviso

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- **Keep the Steering Committee as it is**
- **Develop refined initial policy inputs**
  - » **Phasing and staging**
    - **Types of vehicles**
    - **Nature and manner of transition period**
- **Develop concept of operations**
  - » **NOT for a pilot (potentially in 2015)**
  - » **Incorporate WSDOT work on interjurisdictional travel**
    - **Recommend how to use Oregon technology and procedures**
  - » ***“In addition to a time permit and an odometer charge, the concept of operations recommendation must be developed to include a means for periodic payments based on mileage reporting utilizing methods other than onboard diagnostic in-vehicle devices.”***

[More...](#)

# Key Points from the 2014 Budget Proviso (continued)

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- **Financial analysis**
  - » **Assume exemptions same as motor vehicle fuel and special fuels taxes**
  - » **Use financial analysis to look at more favorable transition options – as determined by the Steering Committee and WSTC**
- **Supplemented by**
  - » **Evaluation of impacts on fuel tax bond holders by WSDOT and the State Treasurer’s Office**
  - » **Urban/rural financial impact and equity, “within existing resources” by WSTC**

# Meeting Schedule

Date	Type	Topic
June 16, 2014 (Olympia)	Steering Committee	<ul style="list-style-type: none"><li>• Update on legislative activity</li><li>• Phasing</li><li>• Outline of concept of operations</li><li>• Urban/rural analysis progress report</li><li>• Update on options for interjurisdictional travel</li></ul>
June 17, 2014 (Olympia)	WSTC	Same topics as Steering Committee from the day before, with less detail
September 25, 2014 (SeaTac)	Steering Committee	<ul style="list-style-type: none"><li>• Draft operational concepts</li><li>• Draft financial analysis</li><li>• Draft report outline</li><li>• Update on urban/rural (WSTC lead)</li><li>• Update on bond analysis (WSDOT/State Treasurer's Office lead)</li><li>• Update on interstate travel (WSDOT lead)</li></ul>

[More...](#)

## Meeting Schedule (continued)

Date	Type	Topic
November 17, 2014 (SeaTac)	Steering Committee	<ul style="list-style-type: none"><li>• Discuss work plan for next fiscal biennium</li><li>• Discuss any changes from the September meeting</li><li>• Review draft report and develop recommendations to WSTC</li></ul>
December 9/10, 2014 (Olympia)	WSTC	Review and finalize draft report
January or February 2015; date to be determined (Olympia)	Transportation Committees of Legislature	Present final report and recommendations

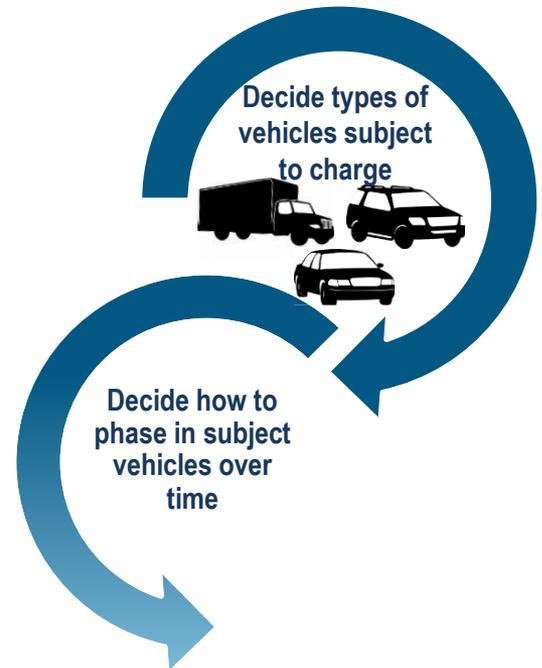
# **PHASING OF A ROAD-USAGE CHARGE**

# Phasing in Road-Usage Charging

## Types of Vehicles and the Transition Period

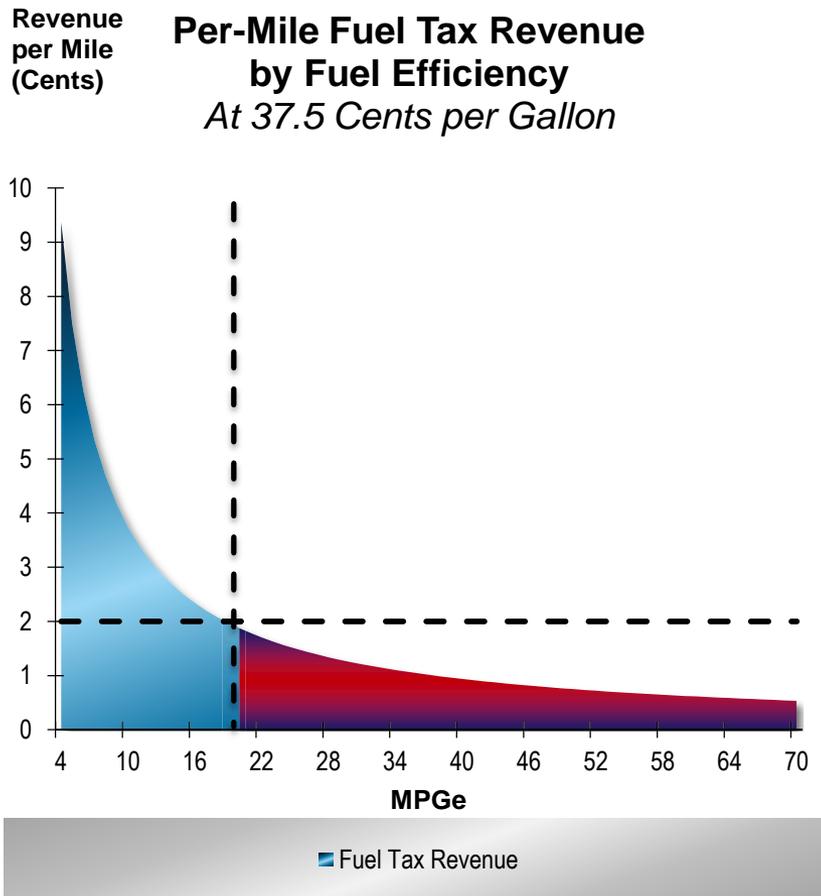
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- Legislative directive to look at “phasing and staging”
- When evaluating, we considered
  - » Net revenue
  - » Mechanics
  - » Politics



# Revenue Sustainability and Political Acceptability

## How Much Will I Pay?



Fuel tax/gallon	37.5¢
Average MPGe	20
Average fuel tax/mile	1.875¢

- High-MPGe vehicles pay more than low-MPGe vehicles
- We aimed for outcomes that address both revenue and fairness

# Options for the Vehicles that Would Be Subject to Road-Usage Charges

- All nondiesel vehicles
- All passenger cars
- Vehicles below 26,000 pounds gross vehicle weight rating (GVWR) regardless of fuel type
- Vehicles below 10,000 pounds GVWR regardless of fuel type
- Highly fuel efficient vehicles
- Vehicles above the average fuel economy rating

## Gross Vehicle Weight Rating (GVWR) System Categories

Class	Gross Vehicle Weight Rating	Category
1	<6,000	Light Duty (primarily cars, SUV, pickups)
2	6,001 to 10,000	Light Duty (primarily SUV, heavy pickups)
3-6	10,001 to 26,000	Medium Duty
7-8	>26,001	Heavy Duty

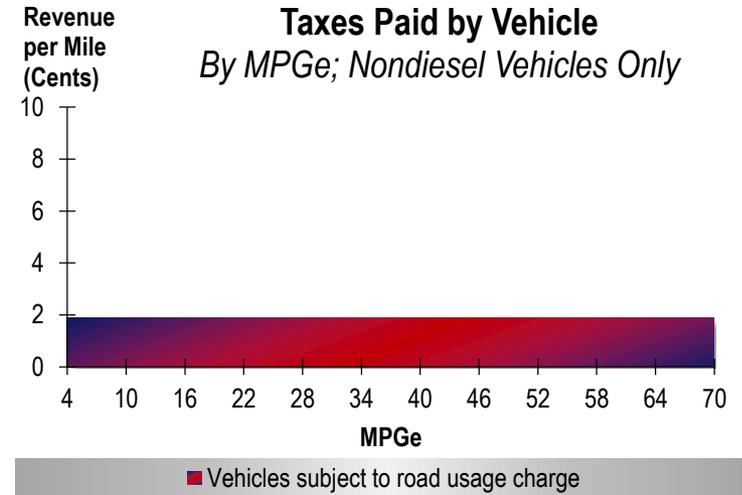
# Assumptions from Last Year's Business Case Not All Carry Through This Year

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- **Big-bang transition in 2015**
  - » **Rationale**
    - **First – Is a system desirable?**
    - **Then – How to handle the transition?**
  - » **This year's work we're addressing transition**
- **All nondiesel vehicles**
  - » **Rationale**
    - **Simplifying assumption to focus attention on cars**
  - » **Revisiting this year**

# What if We Charged All Nondiesel Vehicles?

- **Consistent with last year's business case**
- **Revenue**
  - » Same as business case last year
- **Mechanics**
  - » Easy to identify vehicles
  - » If gas tax continues, lots of refunds
  - » Gas tax elimination possible
- **Politics**
  - » 45% of medium trucks use gas = 40% of gallons
  - » 10% of heavy trucks use gas = 4% of gallons
  - » Ignores fuel efficient diesels



# What if We Charged All Passenger Cars?

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- **Solves the problem of not charging diesel cars**
- **“Passenger cars” not defined**
  - » **Compliance and enforcement difficult**
- **Easier to define “cars” by other characteristics such as vehicle weight and fuel economy**

# What if We Charged Vehicles Below 26,000 Pounds GVWR Regardless of Fuel Type?

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- **Captures all light-duty and medium-duty vehicles**
  - » Most gasoline vehicles plus many diesel and alternative
- **Revenue**
  - » Relatively easy to make revenue neutral
  - » Revenue-neutral rate higher than last year's business case
- **Mechanics**
  - » Straightforward to ID vehicles by weight
  - » If the gas tax were retained, almost all of the gasoline tax collected would be refunded
- **Politics**
  - » Medium-duty vehicles pay less than now
  - » Light-duty vehicles would pay more

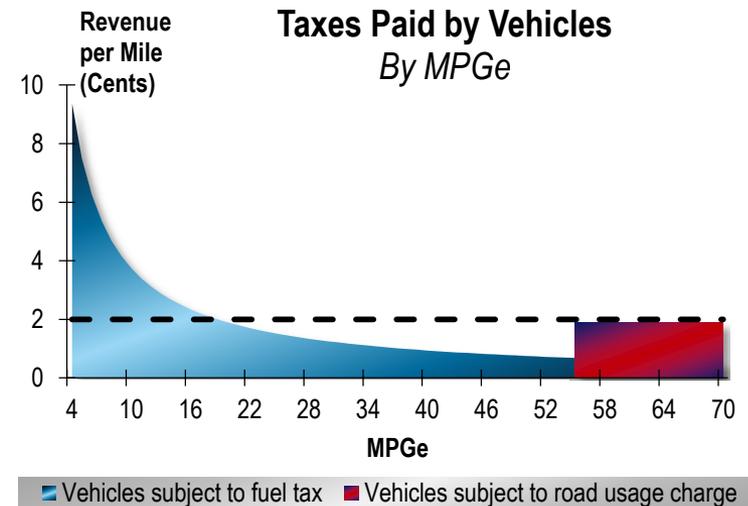
# What if We Charged Vehicles Below 10,000 Pounds GVWR Regardless of Fuel Type?

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- **Captures all pickups and SUV, but not trucks**
  - » Aligns closely with “cars”
- **Good break point for vehicles that cause more damage than cars**
- **Revenue**
  - » Similar to last year’s business case
- **Mechanics**
  - » Straightforward to ID vehicles by weight
  - » If the gas tax were retained, almost all of the gasoline tax collected would be refunded
- **Politics**
  - » Avoids the heavy truck segment altogether

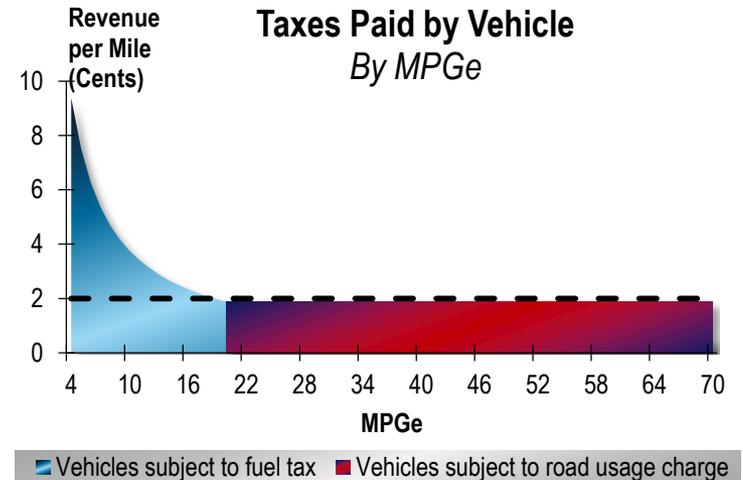
# What if We Only Included Highly Fuel-Efficient Vehicles?

- **Similar to first Oregon proposal revenue**
  - » Each vehicle pays much less in fuel taxes
  - » Very few of these
  - » Continued revenue erosion in much larger 20-54 MPGe range
- **Mechanics**
  - » Easy to identify vehicles
- **Politics**
  - » Currently all electric – may welcome elimination of \$100 flat fee
  - » Potentially out of sync with environmental objectives
  - » Edge effect unfair
  - » In Oregon, automakers objected targeting of electrics



# What if We Required Vehicles with Above-Average Fuel Economy of All Fuel Types to Pay a Road-Usage Charge?

- Designed to solve revenue erosion problem directly
- Revenue
  - » Above average-MPGe vehicles pay more
  - » Low-MPGe vehicles pay less, but could opt in for lower tax
- Mechanics
  - » Easy to identify vehicles
- Politics
  - » Less challenging than others because it does not target a small group and preserves incentives for fuel-efficient vehicles
  - » No edge effect



# Steering Committee Suggested We Evaluate These Two Alternatives

Approach	Pros	Cons
<b>Charged Vehicles Below 10,000 Pounds GVWR Regardless of Fuel Type</b>	<ul style="list-style-type: none"> <li>Aligns closely with “cars” definition</li> <li>Avoids charging trucks</li> <li>Fuel-source neutral</li> </ul>	<ul style="list-style-type: none"> <li>Does not eliminate the gas tax by 2040</li> </ul>
<b>Charge vehicles above average MPGe, regardless of fuel type</b>	<ul style="list-style-type: none"> <li>Targets revenue erosion from a large class of vehicles</li> <li>Addresses efficient diesels</li> <li>No edge effects</li> <li>No one pays less than today                             <ul style="list-style-type: none"> <li>Except for electric vehicles with low mileage (flat \$100 charge)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Calculating a revenue-neutral rate could be a challenge as less fuel efficient vehicles choose to opt in (if allowed to)</li> <li>Does not eliminate the gas tax by 2040</li> </ul>

# POTENTIAL TRANSITION APPROACHES

# A Pilot Test or Demonstration Should Precede and May Become Part of A Transition

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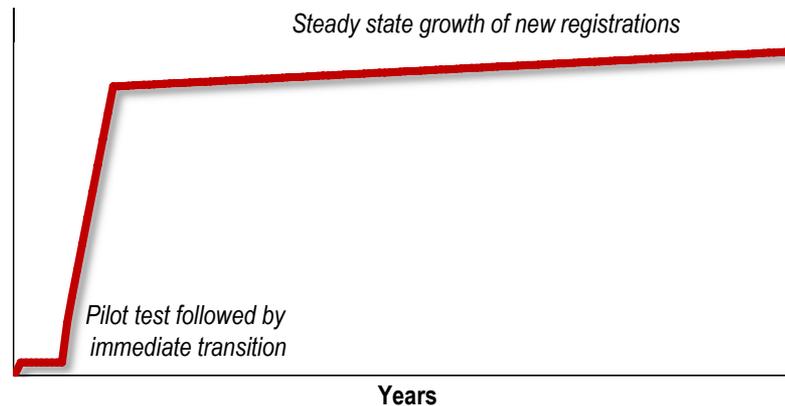
- A pilot test or demonstration may
  - » Be conducted with a small number of vehicles then stopped
  - » Continue as an operational program, without interruption
- In either case, the Legislature must decide how to proceed
- A pilot/demonstration could include
  - » Recruited members and/or volunteers
  - » All-electric vehicles and eliminate the \$100 flat fee
  - » State-owned fleet vehicles
- Earliest pilot for Washington – January 2016
- Suggest a Washington pilot include an odometer-based approach
  - » Oregon does not have an odometer-based option

# Simple Approach

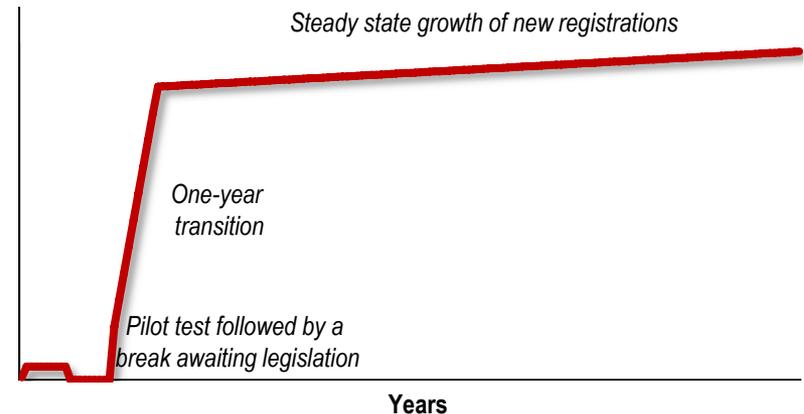
## All Subject Vehicles Enroll Upon Their Next Registration

- Everyone registers once per year
- Includes new/used, dealers/private sales
- Fast transition – One year

Number of Participants

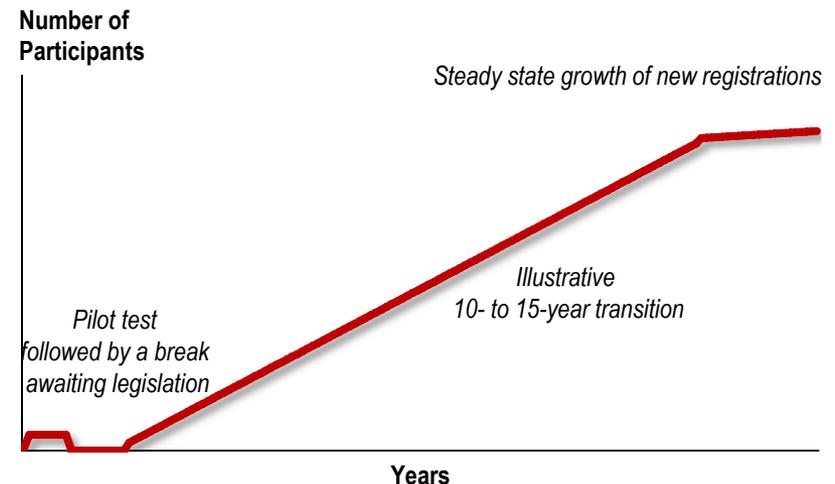
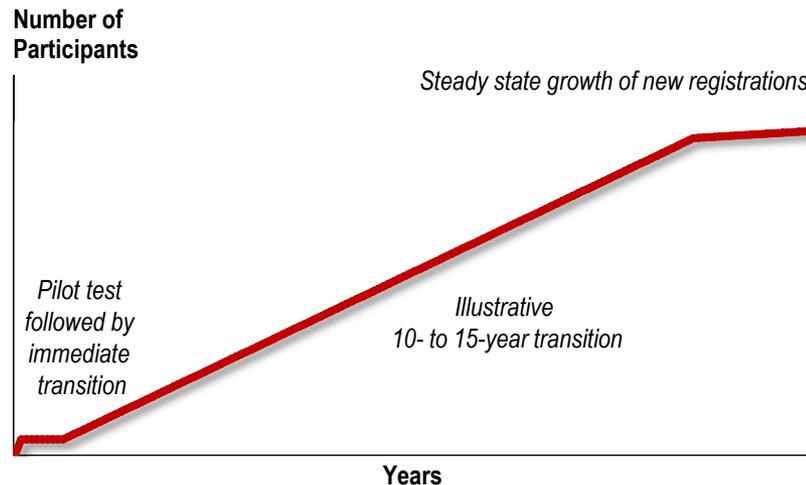


Number of Participants



# All Subject Vehicles Enroll Upon A Title Transaction

- Title transactions – new/used, dealers/private
- 10 to 15 years, with 100 percent transition several decades
- Could be perceived as unfair since some Principals would not be required to enroll for many years



# CONCEPT OF OPERATIONS

# The “Concept of Operations” Will Define A Complete System By Expanding on the “Operational Concepts”

- Over the last two years, we evaluated many operational concepts
- ConOps will combine all three of last year’s operational concepts
  - » Document the mechanics from a user’s perspective
  - » Formal systems engineering document
  - » Use IEEE standard 1362-1998
  - » Accessible to lay readers
  - » Guide system specification/procurement
  - » Easily updatable



# Concept A – Time Permit Overview



- **Principals buy a permit for an unlimited number of miles for a given period of time (such as one year), tied to vehicle registration transactions**
- **Principal perspective**
  - » **User prepurchases a permit for unlimited usage**
  - » **Permits are annual but can be paid in semiannual or quarterly installments**
  - » **Purchase and renewal is tied to vehicle registration**
  - » **Easy to enforce – valid tabs = valid permit**
  - » **Relatively easy to implement for out-of-state vehicles**
- **Agency perspective**
  - » **Similar to Department of Licensing (DOL) current handling of vehicle registration, except adds functions for account and Customer Relations Management (CRM)**

# Concept B – Odometer Charge

## Overview



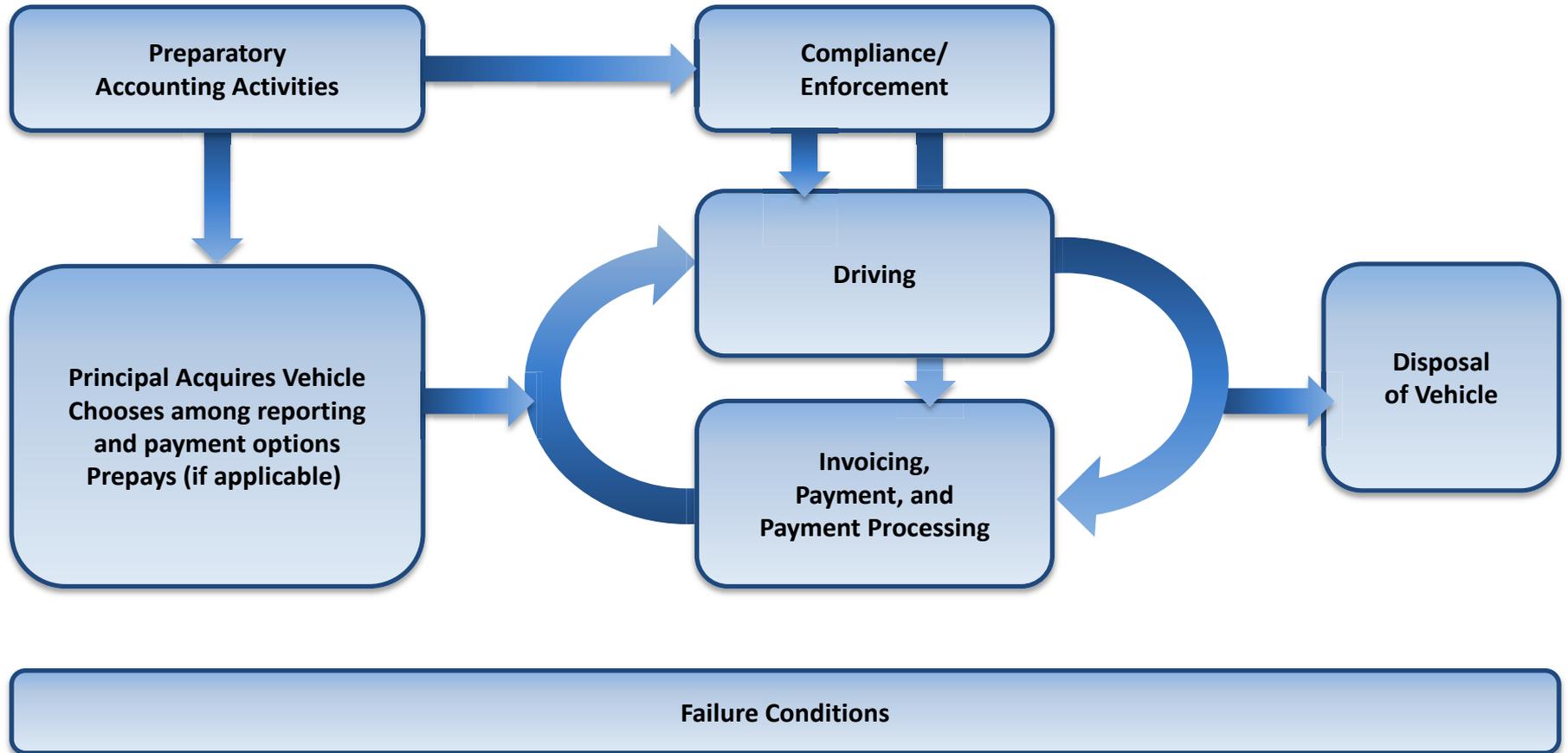
- **Principals prepay for the amount of miles they expect to drive over a given period (such as one year)**
  - » At period end, actual miles are reported and reconciled with amount prepaid
  - » System does not distinguish miles driven in Washington versus out-of-state
- **Principal perspective**
  - » User estimates annual mileage and prepurchases a permit to cover estimated miles
  - » At end of year, user reports actual miles traveled and reconciles payment (additional payment required or credit applied to next period), and pays in advance for following year
  - » Reporting periods can be annual, semiannual, or quarterly
- **Agency perspective**
  - » Accounting and CRM would need to be significantly scaled up from current functions at state agencies

# Concept C – Differentiated Distance Charge Overview



- **Principals use in-vehicle electronics to count miles traveled in state only**
  - » Represents the most technically involved of the three concepts and would require a sophisticated accounting and CRM system
  - » Could be operated fully by a state agency, outsourced, or left to consumers to select methods of reporting and payment using existing service providers (Note: for the business case we assumed a state agency will operate all aspects)
- **Principal perspective**
  - » User pays for road usage on Washington State at the end of each quarter, semester, or year
  - » Enforcement through device certification, compliance analytics, and odometer reading
- **Agency perspective**
  - » Requires extensive account and CRM
  - » Similar to tolling, but scale of accounts would be much more than current capabilities

# Component Activities Summary



# Outline of the ConOps

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- **Introduction and background**
- **Policy basis for system**
- **Principals will be given a choice of three road-usage charge concepts**
  - A. Time permit**
  - B. Odometer charge**
  - C. Differentiated distance charge**
- **A system usage scenario refers to all the ways that the Principal might interact with the road-usage charging system**
- **System components**
- **System usage scenarios**
  - » **Preparatory accounting activities (identifying subject vehicles; certifying compliant hardware)**
  - » **Acquire/register vehicle; make road-usage charge measurement and reporting choices**
  - » **Driving of vehicle**
  - » **Invoicing and payment**
  - » **Disposal or transfer of vehicle**
  - » **Compliance/enforcement**
  - » **Failure conditions**

# Our Thinking on Phasing Suggests Particular Directions for the ConOps

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- **Legislature-directed combination of Concepts A, B, and C**
  - » **Users of the odometer charge (Concept B) would have their bill capped at the level of an annual time permit (Concept A)**
  - » **Set the time permit at 95<sup>th</sup> or 98<sup>th</sup> percentile of miles driven in WA**
- **Concept A easiest for out-of-state drivers without an interstate system**
- **The Legislature also directed study for other *means for periodic payments based on mileage reporting utilizing methods other than onboard diagnostic in-vehicle devices***
  - » **We can investigate these options**
    - **Smartphones to take pictures of the odometer**
    - **Buying blocks of prepaid mileage**
    - **Pay at the pump approaches**

# **URBAN/RURAL ANALYSIS PROGRESS REPORT**

# Urban/Rural Equity Analysis

## Transportation Budget Directive to Transportation Commission

### Section 205

**(7) Within existing resources, the commission shall undertake a study of the urban and rural financial and equity implications of a potential road-usage charge system in Washington. The commission shall work with the department of transportation and the department of licensing to conduct this analysis. For any survey work that is considered, the commission should utilize the existing voice of Washington survey panel and budget to inform the study. The results must be presented to the Governor and the Legislature by January 15, 2015.**

# Urban/Rural Equity Analysis

## Study Scope of Work

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- **The study will provide an analysis of the financial and equity outcomes of a potential road-usage charging system in Washington State compared to the gas tax for urban, suburban, and rural residents**
- **We interpret the legislative intent to consider road-usage charging as a potential replacement for the gas tax**
- **All work described in this document will be completed by December 2014**

# Urban/Rural Equity Analysis

## Staff Workgroup and Work Plan

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### Staff Workgroup

- **Transportation Commission staff**
- **House and Senate Transportation Committee Staff (caucus staff welcome too)**
- **Department of Licensing**
- **Department of Transportation**
- **Research Assurance (VOWS)**
- **Road-Usage Charge Assessment Consulting Team**

# Urban/Rural Equity Analysis

## Staff Workgroup and Work Plan (continued)

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### Work Plan

- **Develop a survey instrument to use the Voice Of Washington State (VOWS) survey panel**
- **Gather data from VOWS and from state/national sources on**
  - » **Estimated miles per gallon for vehicles, households, and by location (e.g., urban, suburban, and rural)**
  - » **Estimated VMT by vehicle and household, and by location (e.g., urban, suburban, and rural)**
- **Analyze data and evaluate equity impacts of a RUC versus the gas tax, by urban/suburban/rural areas**

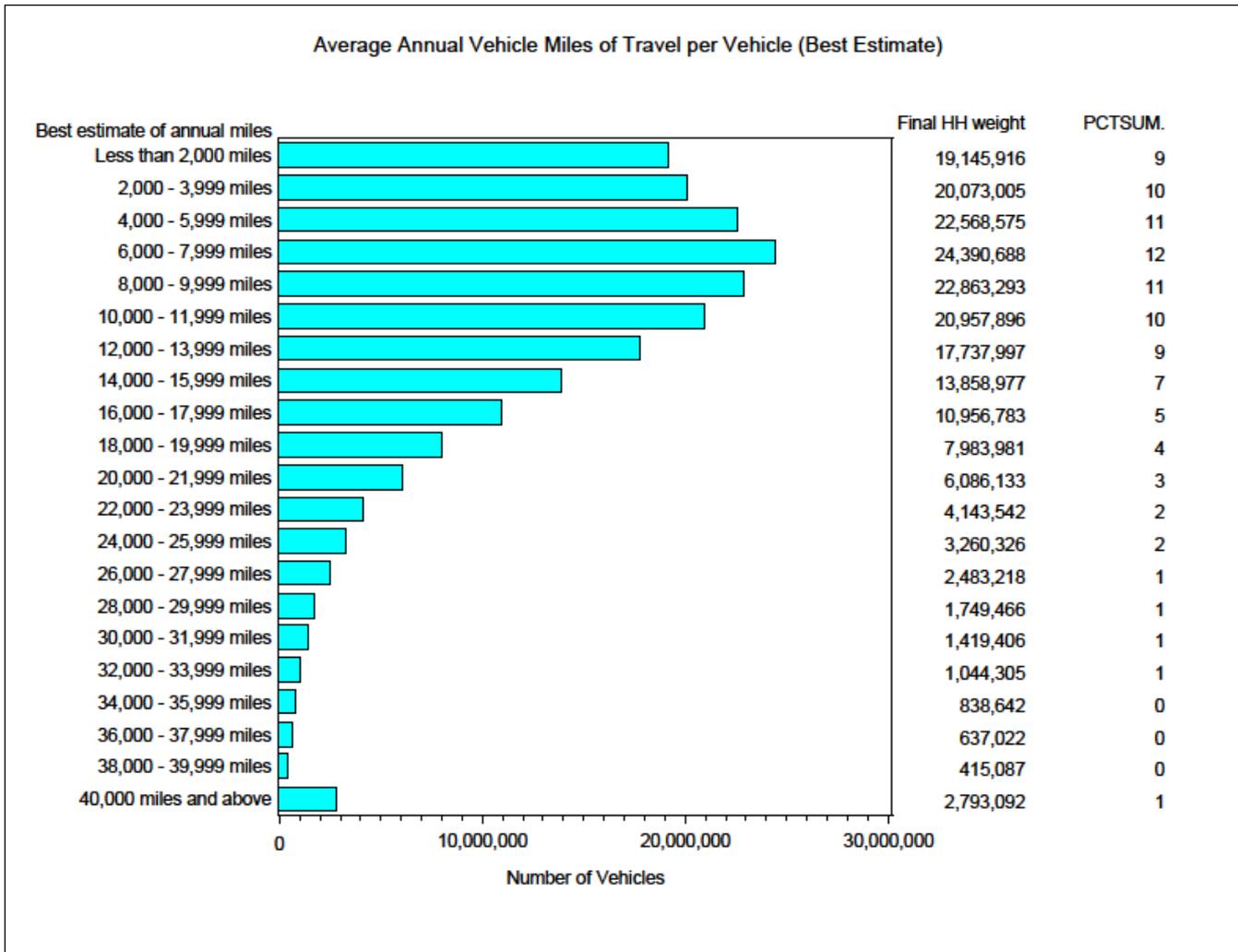
# Urban/Rural Equity Analysis

## VOWS Data Gathering (continued)

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- **The June survey will collect data from Washington State residents on**
  - » **All vehicles owned by household (make/model) – includes motorhomes and motorcycles**
  - » **Total miles driven by household – all vehicles**
  - » **Percent of miles driven in-state, out-of-state, and on nonpublic roads**
  - » **Year, engine type, and transmission for each vehicle in household**
  - » **Miles per gallon for each vehicle in household**
  - » **Miles driven for each vehicle in household**
  - » **Number of licensed drivers in household**
  - » **Describe area you live in (urban, suburban, rural)**
- **A second round of RUC data collection via VOWS will occur in September**
  - » **RUC questions will focus on trip purpose by urban/suburban/rural, conceptual RUC acceptance, and other possible areas yet to be determined**

# VMT Profile Data from 2009 NHTS



**OPTIONS FOR CHARGING  
MOTORISTS FOR  
INTERJURISDICTIONAL TRAVEL  
AND TREASURERS  
DEBT ANALYSIS**

# Interjurisdictional Travel

## Legislative Direction

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- **\$21,000 to WSDOT's Public/Private Partnerships to partner with Oregon and other states**
- **Develop strategies and methods for reporting, collecting, crediting, and remitting RUC from interjurisdictional travel**
- **Results due September 2014**

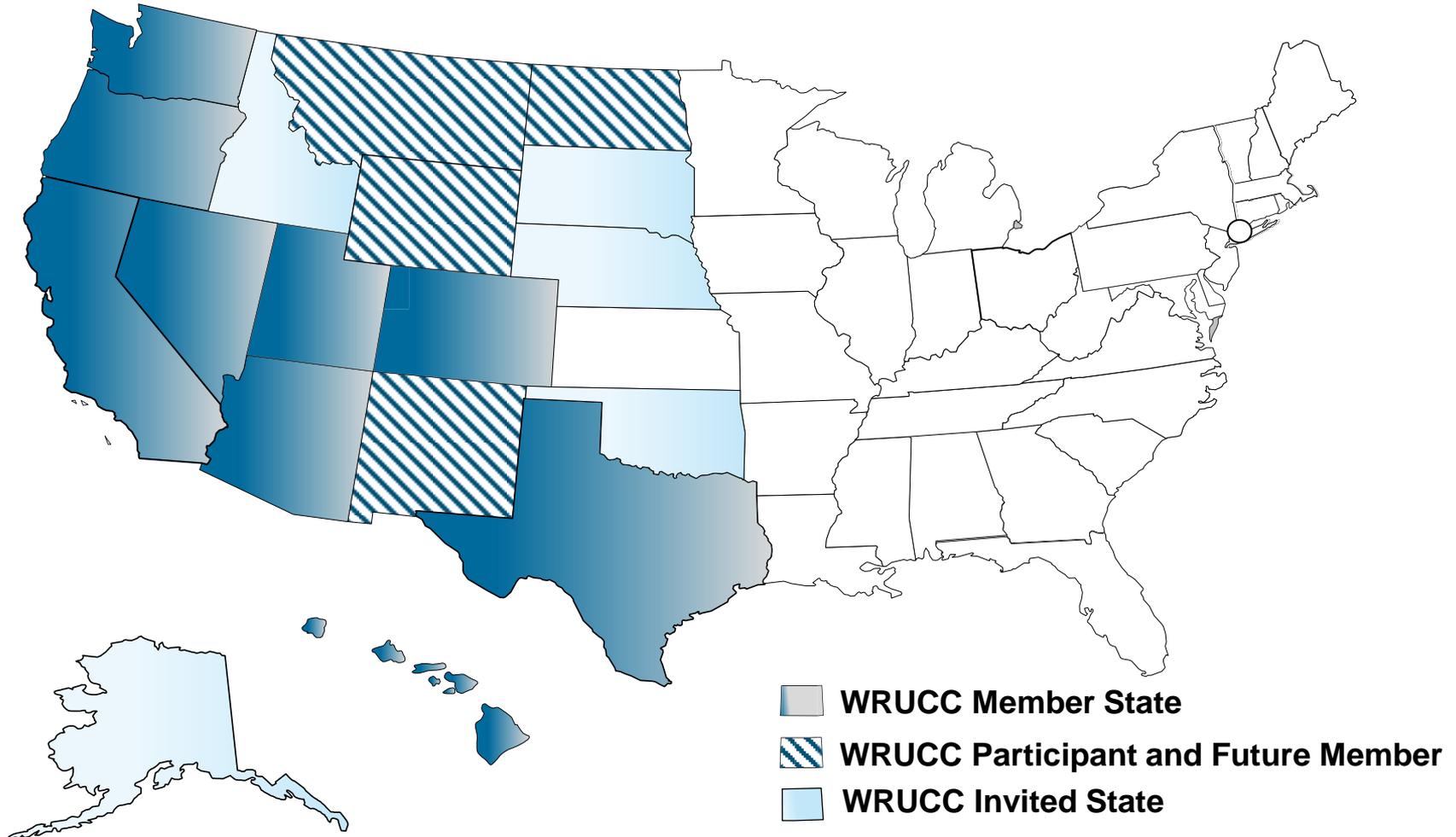
# Interjurisdictional Travel

## Progress

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- **Oregon DOT agreed to matching contributions of \$21,000**
- **The Western Road-Usage Charge Consortium (WRUCC) created an “enhanced” scope of work (Phase 2) that would specifically examine issues related to international motorists (travel to/from Mexico and Canada) Cost – \$50,000**
- **This SOW enticed additional funding contributions from California and Texas DOTs (and potentially others – final funding decision on June 13)**
- **All work is now fully funded and ready to proceed (total project cost – \$92,000)**
- **Oregon DOT is the contracting entity for all work, because they serve as the designated Program Administrator (financial fiduciary) for the Western RUC Consortium. They will issue the contract for the work (ETA – June 2014)**

# Western Road-Usage Charge Consortium



# Interjurisdictional Travel

## Next Steps

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- **Progress Report at WRUCC Board Meeting on July 15, 2014  
(at WASHTO's Annual Meeting)**
- **Progress Report to Washington State RUC Steering Committee  
at September 2014 meeting**

**NEXT STEPS**

# Next Steps

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- **Fully develop the ConOps**
- **Conduct financial analysis of fully elaborated ConOps and up to two transition strategies**
- **Next Steering Committee meeting – September 25 at SeaTac**

**THANK YOU**