

Washington State Road Usage Charge Assessment



Transportation Commission Briefing: Steering Committee Recommendations

December 12, 2012

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Washington State Transportation
Commission



Washington State
Department of Transportation



LEGISLATIVE CHARGE AND BACKGROUND

The Charge

- **Legislative funding under *ESHB 2190* 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”

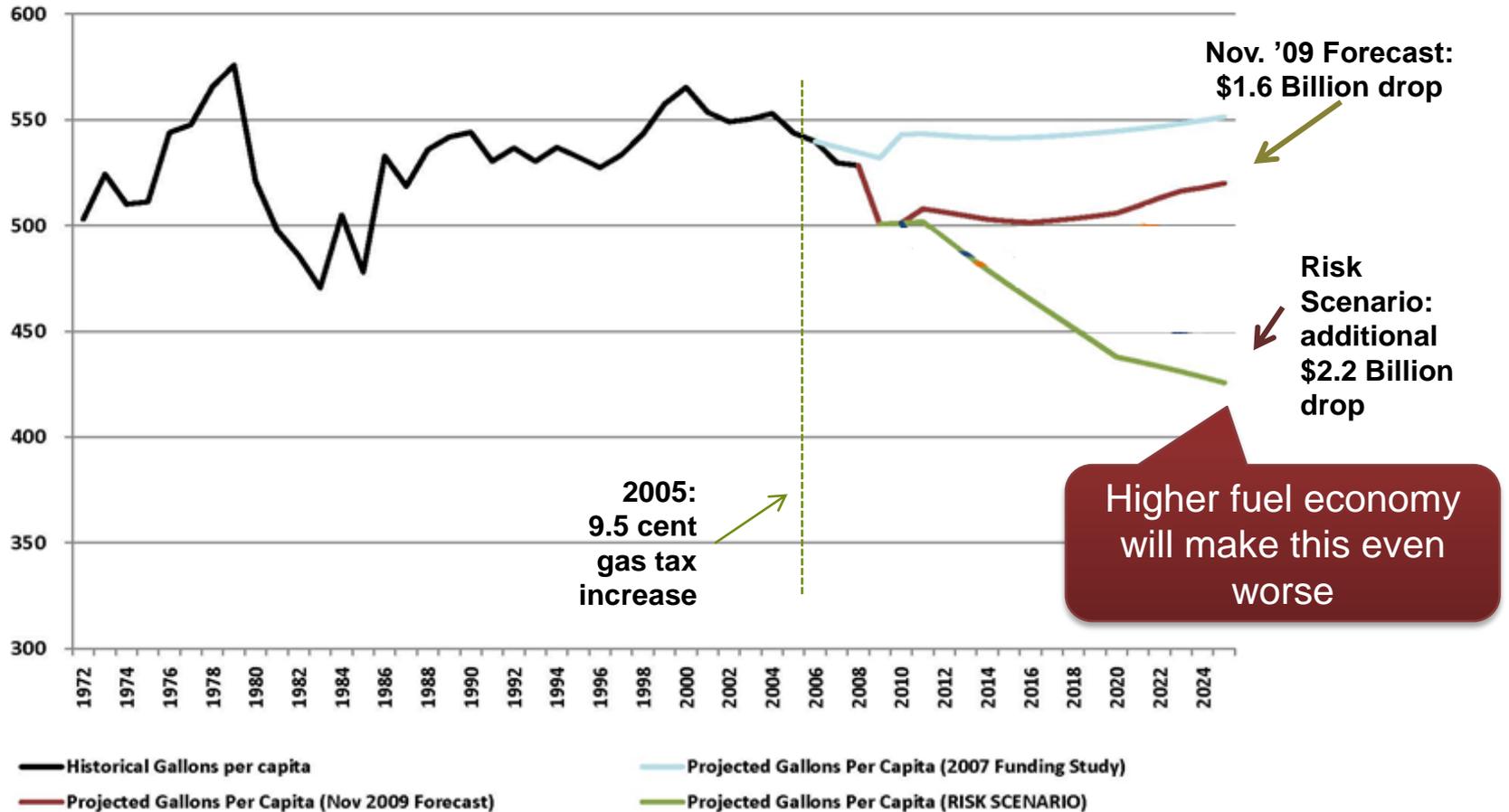
- **Both efforts combined and under guidance of Steering Committee, which will make recommendations**

Implementing the 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**
- **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

“Risk Scenario” of Gas Tax Revenue



Source: Joint Transportation Committee – Implementing Alternative Transportation Funding Methods, 2009.

**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

General Road Usage Charging: Potential Policy Objectives – Primary Objectives

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**

General Road Usage Charging: Potential Policy Objectives – Secondary Objectives

Manage Demand/Congestion

- **Cordon/area pricing:
- Stockholm, London, Singapore**

Protect Environment by Reducing Fuel Use

- **French “eco-tax”**
- **London’s “Low Emission Zone (LEZ)”**

Influence Travel Behavior and Other Decisions Such as Land Use

- **High fuel taxes in Europe**
- **Switzerland, Austria & Germany –
truck tolling**

General Road Usage Charging: Two Basic Forms



Time

- Vignettes
 - Prepaid stickers & electronic



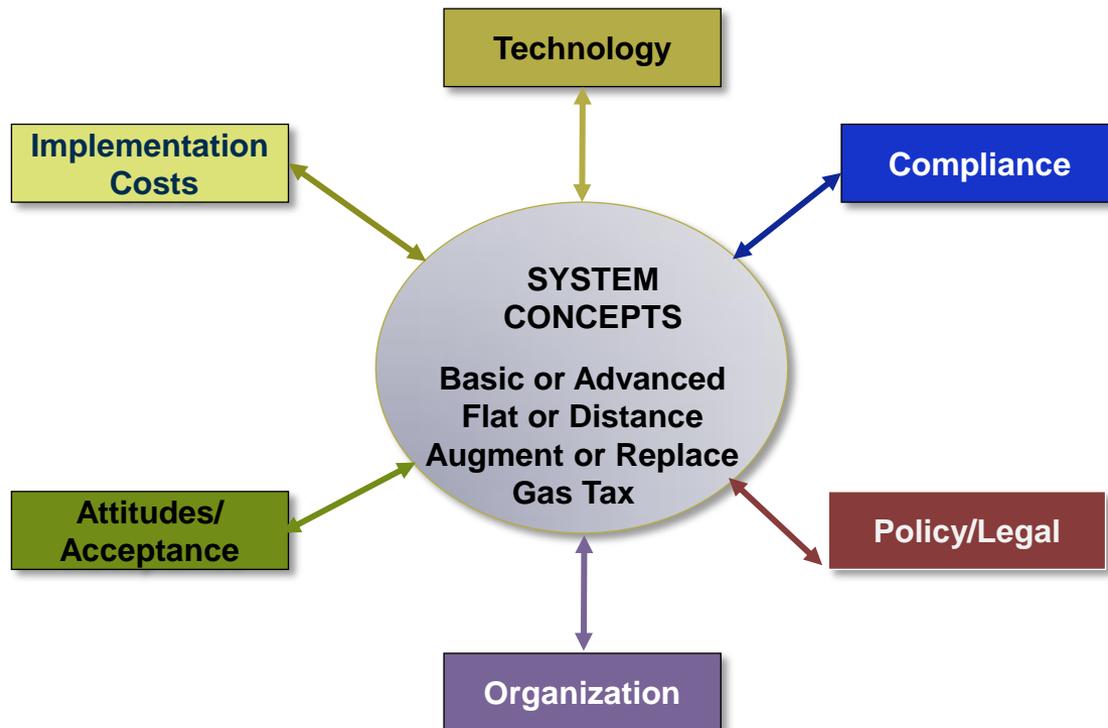
Distance

- Prepaid stickers
- Odometer reading
- GPS / e-hubodometer

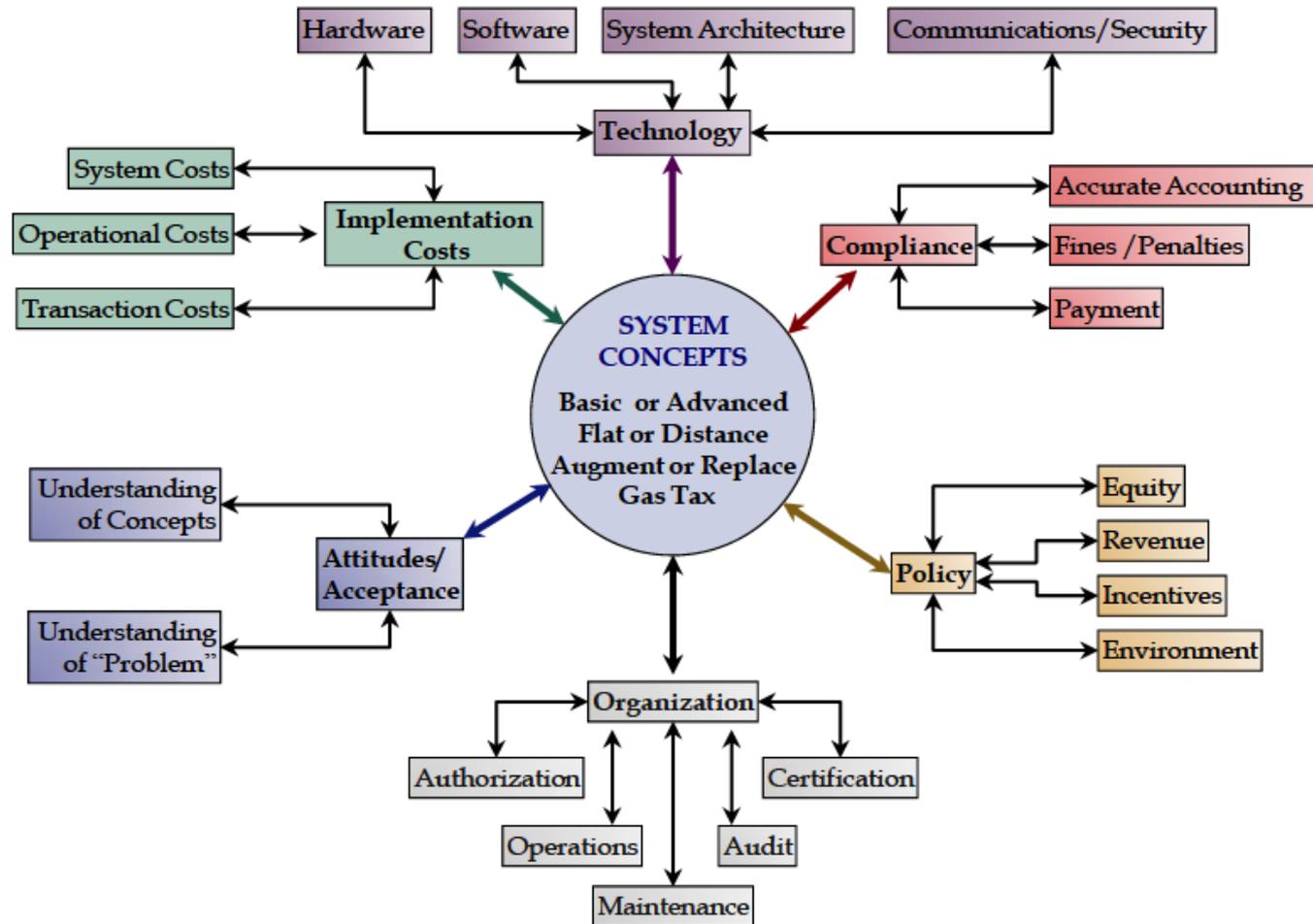
DOMESTIC AND INTERNATIONAL EXPERIENCE

Transitioning from Gas Tax to Road Usage Charging: A “Wicked Problem”

- Changing highly dependent and interdependent systems which may create unintended consequences, both positively and negatively, in one or more of the dependencies of the system



“Transitioning from Gas Tax to Road Usage Charging: A “Wicked Problem””



Road Usage Charge Experience In Operation – Few Examples

● New Zealand:

- » All heavy and non-gasoline vehicles since 1975 using a paper system
- » Advanced systems being phased in

● Europe – Vignette Systems:

- » Stickers that allow use of certain roads for a designated time (a few days to a year)
- » Some now electronic

● USA – Weight-distance taxes

- » Over 20 systems in mid-20th Century
- » Only 4 remain, replaced by diesel taxes

● USA – IFTA and IRP

- » System to distribute diesel taxes and fees among states

Road Usage Charge Experience

International Studies and Proposals

- **Four countries:**

- » **UK: 1964-present**
- » **Singapore: 1978-present**
- » **The Netherlands: 1988-2010**
- » **Hong Kong: 1983-2009**

- **Common characteristics:**

- » **Studies underway for several decades or more**
- » **Rarely led to implementation**
- » **Coupled with congestion charging, tolling, environmental impact charging**
- » **Several rounds of studies**

Road Usage Charge Experience

Domestic Studies and Proposals

● Examples:

- » Discussed, proposed, studied and pilot tested in almost 20 states
- » Studies with completed trials:
 - University of Iowa, Oregon DOT, PSRC, Minnesota
- » Studies with trials in progress:
 - Minnesota, Oregon DOT
- » Studies without trial (so far):
 - I-95 Corridor Coalition, Nevada, Colorado, California

● Common characteristics

- » Similar motivations to Washington
- » Mostly about revenue, but some about congestion and emission reduction

Global Lessons Learned (1 of 2)

● Policy

- » **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**
- » **Cars are different than trucks**

● User experience

- » **“Choice” – establish choices in technology and payment streams**
- » **Ensure simplicity and efficiency**

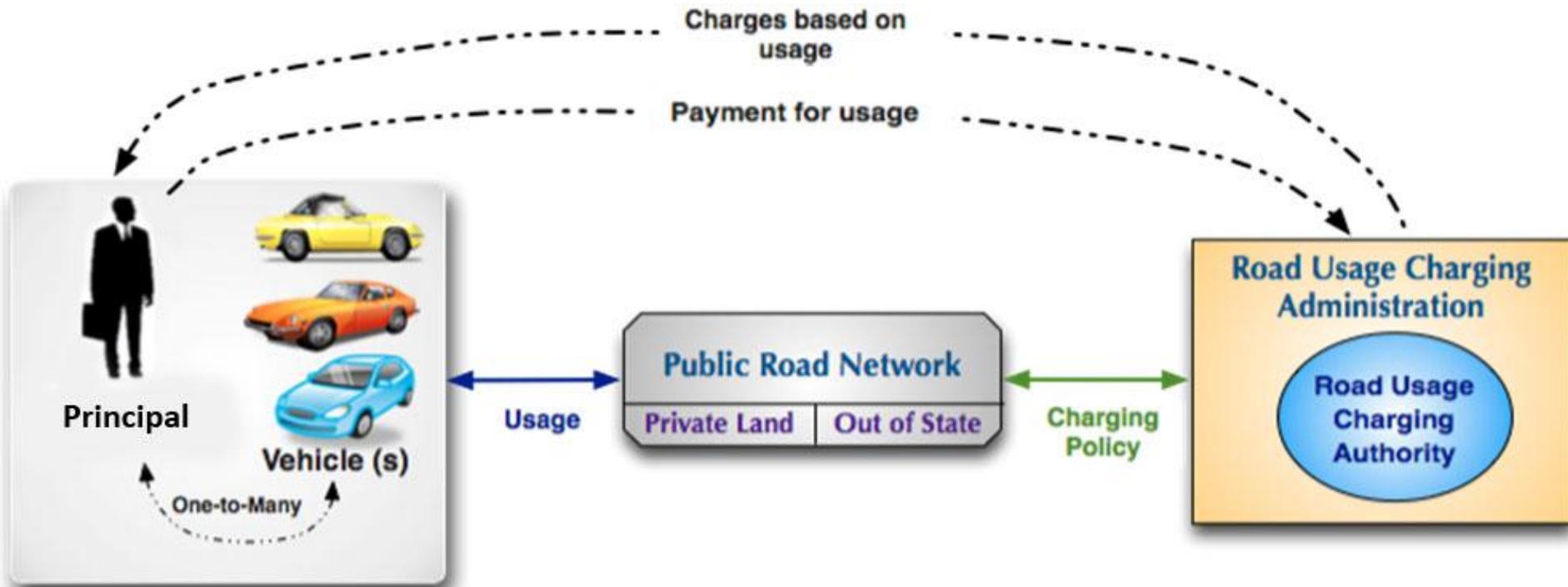
Global Lessons Learned (2 of 2)

● Implementation and Public Acceptance

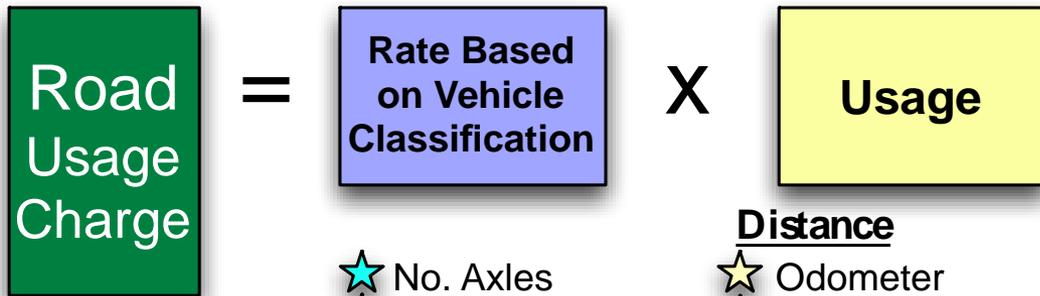
- » **“Open market” approach and use of certified service providers reduces overall costs and ensures system sustainability**
- » **Minimize exemptions and consider phase-in discounts**
- » **Clearly define what will be done with the revenues**
- » **Enforcement and legal appeals process are critical – taxes have more “bite” than fees, tolls, or charges**
- » **Political will is essential**

POTENTIAL ROAD USAGE CHARGE CONCEPTS

Core Elements of a Road Usage Charge



Simple Road Usage Charge



- ★ No. Axles
- ★ L x W x H
- ★ Drive Train
- ★ Engine Type
- ★ Engine Fuel Type
- ★ Vehicle Class
- ★ Combination

Distance

- ★ Odometer
- ★ Approximate (INS)
- ★ Calculated (e.g. GPS)
- ★ Segments
- ★ Zone(s)
- ★ Mileage blocks

Time

- ★ Calendar (e.g. week, month, year)
- ★ Engine Run Time (Telematics)
- ★ Engine Run Time (Third Party OBU)

Example #2 –

 Toyota Prius charged for 3,000 minutes @ 2¢ per minute of engine runtime

3,000

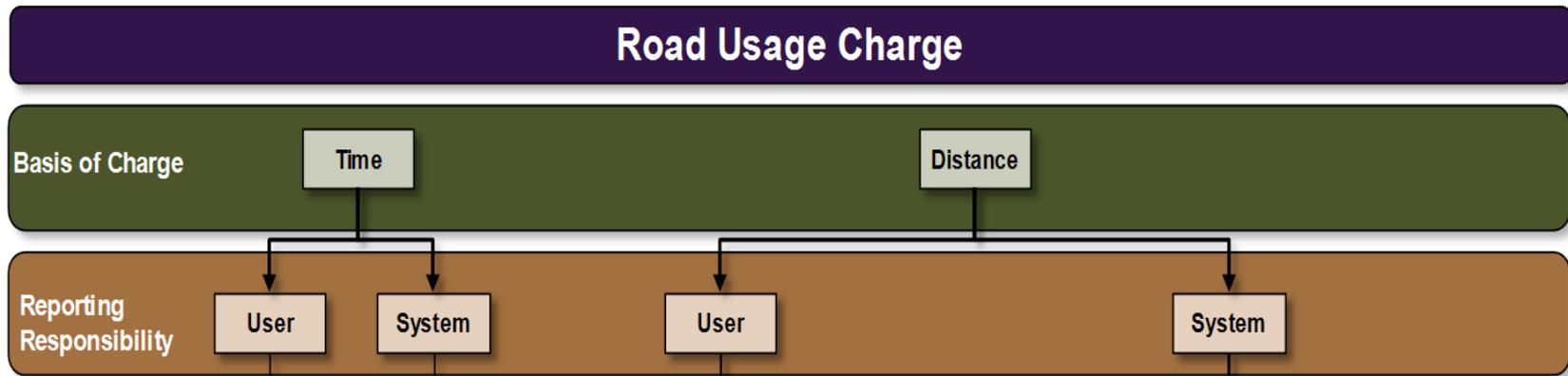
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1¢

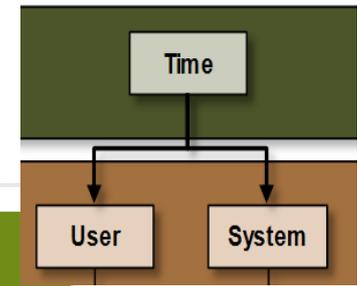
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\$30.00

Operational Concepts - Categories



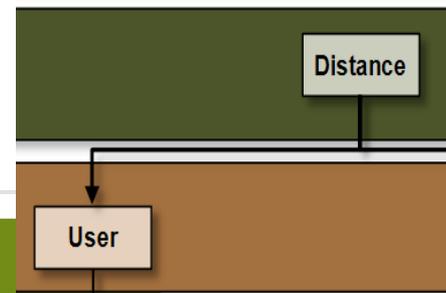
Operational Concepts: Time-based



Concept	Description	Operational Sites	Some Details
1. Time permit	Purchase unlimited road network access for a set period of time (e.g., week, month, year).	Vignettes in Europe: Switzerland, Austria, Hungary, Czech Republic	<ul style="list-style-type: none"> •Stickers •E-licenses tied to license plates
2. Engine run time charge	System detects engine run time over a set period (e.g., monthly) and reports charges automatically.	None	Vibration sensors + one of these: <ul style="list-style-type: none"> •In-vehicle telematics •Aftermarket device with cellular reporting •Aftermarket device w/ smartphone



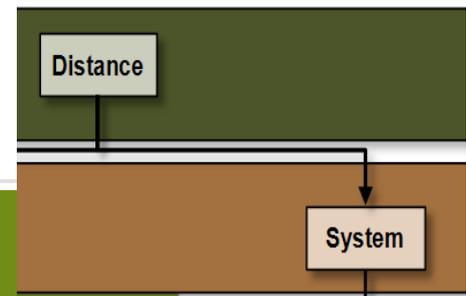
Operational Concepts: Distance-based—Manual



Concept	Description	Operational Sites	Some Details
3. Mileage permit	Purchase a license to drive a certain number of miles.	New Zealand	<ul style="list-style-type: none"> •Paper licenses •Electronic licenses tied to license plates
4. Estimated annual mileage permit with reconciliation	Pay for estimated mileage for a set period, then reconcile the account based on actual distance driven periodically (monthly, quarterly).	None, but similar to estimated income taxes	<ul style="list-style-type: none"> •Paper system •Web interface to pay for mileage
5. Simple odometer or other mileage reading	Principal reports mileage at the end of a period (e.g., quarterly) and pays the corresponding amount owed.	None	<ul style="list-style-type: none"> •Paper system •Web interface to pay for mileage



Operational Concepts: Distance-based—Automatic



Concept	Description	Operational Sites	Some Details
6. Automatic Mileage Reporting	System detects mileage traveled and reports charges automatically at the end of a period (monthly, quarterly).	None but similar to Pay-As-You-Drive insurance	Three technology alternatives: <ul style="list-style-type: none"> • OBD-II with cellular modem • OBD-II with Bluetooth • Vehicle Telematics
7. Automated Mileage and General Location Measurement	System detects mileage traveled by geographic zone over a set period of time (e.g., monthly) and reports charges, with rates set by zone.	Truck Tolling in New Zealand, Slovakia, France, Germany	Three technology alternatives: <ul style="list-style-type: none"> • Vehicle Telematics with GPS • User-provided smartphone +OBD-II backup dongle • Third-Party GPS device with Cellular Modem
8. Automatic Mileage and Specific Location Measurement	System detects mileage traveled by geographic zone over a set period of time (e.g., monthly) and reports charges, with rates set by road segment or type of road.	None, but extensive piloting in Singapore and elsewhere	Three technology alternatives: <ul style="list-style-type: none"> • Vehicle Telematics with GPS • User-provided smartphone +OBD-II backup dongle • Third-Party GPS device with Cellular Modem



DRAFT FEASIBILITY ASSESSMENT

Feasibility Criteria

Criterion	Description
Convenience	Convenient to users
Implementability	Ability to overcome implementation barriers and challenges
Transparency	Rate setting, customer billing, accounting
Stability and sustainability	Confidence in revenue expected relative to the gas tax.
Privacy	Actual and perceived
Equity (fairness)	Fair as possible across classes of users
Flexibility	Accommodate future options and evolutions.
Choice	Users can choose from a menu of options.
Out-of-state travel:	Distinguish between in-state and out-of-state travel.
Collect revenue from out-of-state travelers.	

Feasibility Assessment Summary

(page 8 of draft report)

- **The Steering Committee unanimously concludes that a road usage charge is feasible in Washington and recommends further study ...**
- **The Steering Committee recognizes that the gas tax is not a sustainable revenue source** for transportation in Washington, as demonstrated by prior studies.
 - » Successful international examples of road usage charge systems in practice and successful demonstrations in the U.S. show that there are numerous viable operational concepts and technologies for road usage charging in Washington.
- However implemented, **road usage charging will not be perfect, but no tax mechanism is perfect**, including the current gas tax.
 - » All taxing policies involve tradeoffs between ideal policy objectives and how these objectives can be implemented in the real world.
 - » This feasibility assessment demonstrates that offering choices to users may solve many of the issues related to road usage charging and other associated issues such as privacy and acceptance.

DRAFT WORK PLAN AND BUDGET

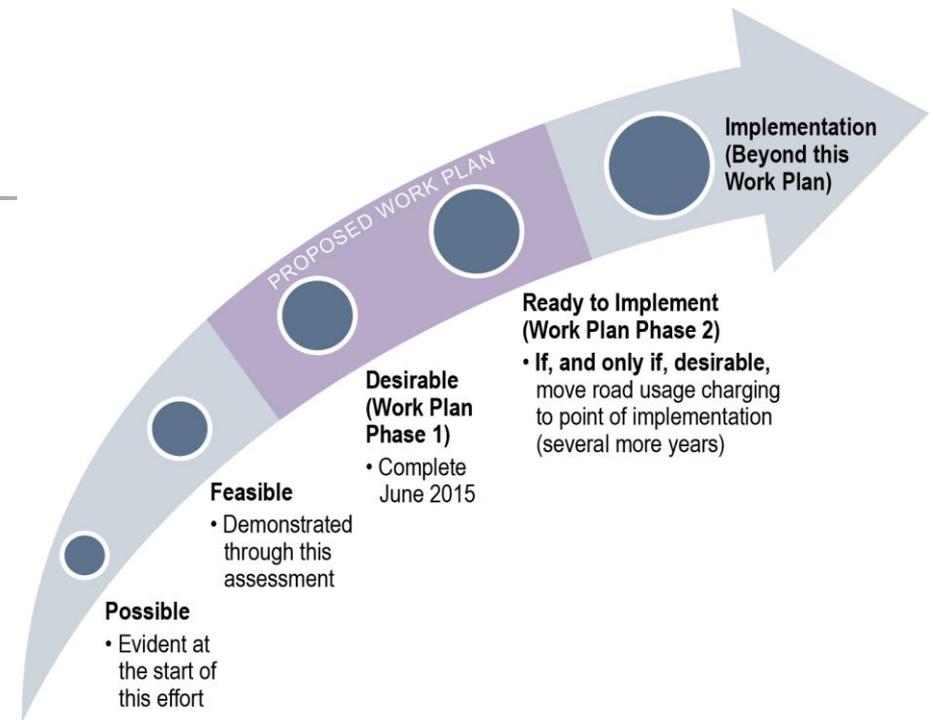
Work Plan Context

● Phase 1

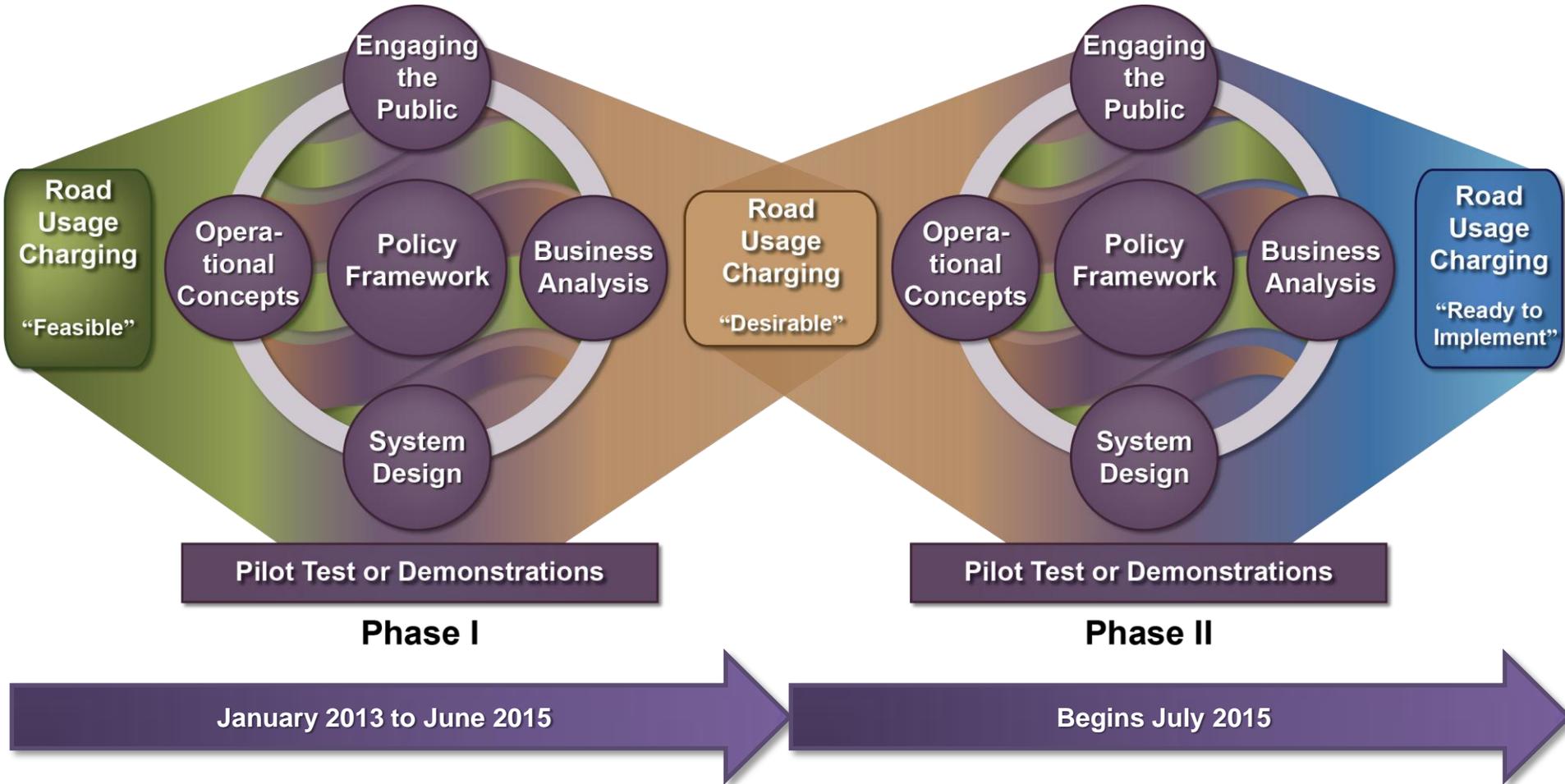
- » Tackle deferred policy issues
- » Desirable?
- » What would the operational concept look like?
- » Be ready for 2015 Legislative session

● Phase 2

- » Shifts from broad policy concepts to operational details
 - » Develops a system that is ready to implement.
 - » Timeline on the order of “a few years”
- Actual implementation of a road usage charge program is beyond this work plan



Work Plan Process



Specific Tasks

- **Engaging the Public**

- » 1. Measure Public Attitudes and Acceptance
- » 2. Communications and Public Engagement

- **Policy Framework**

- » 3. Define Policy Objectives
- » 4. Policy Research

- **Operational Concepts**

- » 5. Define Operational Concepts

- **System Design**

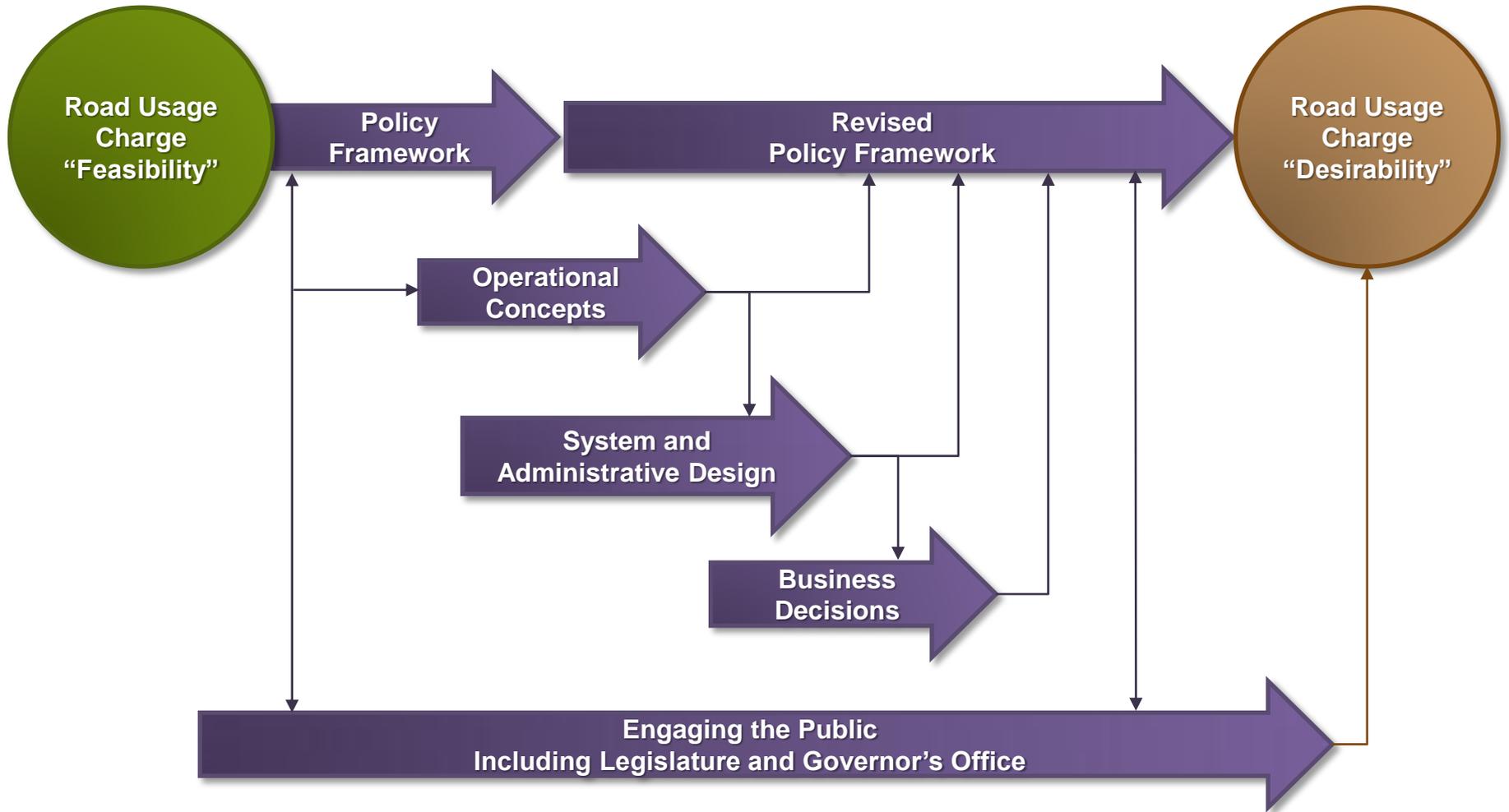
- » 6. Administrative Design
- » 7. System Architecture and Technical Requirements

- **Business Analysis**

- » 8. Business Case
- » 9. Evaluation Framework
- » 10. Interoperability with Other Systems
- » 11. Transition Strategy
- » 12. Risk Analysis

- **Pilot Tests**

Phase 1 Process



Policy Issues Identified so Far

- **Relationship to the gas tax**
 - » Replace, supplement, transition
- **Social objectives**
 - » Energy, greenhouse gases, congestion, encourage transit
- **Use of revenues**
 - » Strictly roadways, or broader?
- **Equity among user groups**
 - » Urban/rural, economic groups
- **Rate setting**
 - » Cost responsibility
 - » Direct relationship to miles
 - » Technology and privacy tradeoffs
- **Out of state issues**
 - » Capture revenue from out of state drivers
 - » Out of state miles

Task Overview

Tasks 1-2

● Engaging the Public

- » Task 1: Measure Public Attitudes and Acceptance**
 - Surveys, focus groups**
 - Phase 1: Baseline evaluation; Phase 2: Advanced evaluation**
- » Task 2: Communications and Public Engagement**
 - Communications plan**
 - Collateral material**
 - Communications activities, such as press releases, media briefings, interviews, social media, workshops, op-ed pieces**

Task Overview

Tasks 3-5

● **Policy Framework**

» **Task 3: Define Policy Objectives**

- **Agree upon high level objectives in Phase 1**
- **Refine and address details in Phase 2**

» **Task 4 Policy Research**

- **Analysis of VMT forecasts, in-state/out-of-state splits, cost- and revenue-allocation studies**
- **Conceptual in Phase 1, detailed in Phase 2**

● **Operational Concepts**

» **Task 5: Define Operational Concepts**

- **Convert high-level policy goals to description of user experience**
- **Phase 1 – high level; Phase 2 – more detailed**

Task Overview

Tasks 6-8

● **System Design**

» **Task 6: Administrative Design**

- **Address administrative functions and relationship to existing state agency functions**
- **Identify outsourcing and private partnership opportunities**
- **More heavily oriented towards Phase 2**

» **Task 7: System Architecture and Technical Requirements**

- **More heavily oriented towards Phase 2**

● **Business Analysis**

» **Task 8: Business Case**

- **Evaluation models, benefit-cost analysis, formal business case for government, motorists, private sector**
- **Needed to get to “desirable” in Phase 1; refresh in Phase 2**

continued...

Task Overview

Tasks 9-12

● Business Analysis (cont'd)

» Task 9: Evaluation Framework

- Provide objective criteria and approach to evaluation**
- Criteria in Phase 1; Procedures in Phase 2**

» Task 10: Interoperability with Other Systems

- Evaluate opportunities to reduce redundancy with Washington State revenue systems and other state/country systems**

» Task 11: Transition Strategy

- Strategy to transition from gas tax, potentially in phases**
- Fleet phase, technology, administrative, state/interstate/international**

» Task 12: Risk Analysis

- Identify risks; research, analyze, develop mitigation approaches**
- Revisit throughout the project**

Proposed Budget

FY 2013-2015: \$1.6 million

Tasks	Phase 1: Desirable	Phase 2: Ready to Implement	Total
Engaging the Public	\$390,000	\$580,000	\$970,000
Task 1 Measure Public Attitudes and Acceptance	\$160,000	\$240,000	\$400,000
Task 2 Communications and Public Engagement	\$230,000	\$340,000	\$570,000
Policy Framework	\$430,000	\$220,000	\$650,000
Task 3 Define Policy Objectives	\$170,000	\$40,000	\$210,000
Task 4 Policy Research	\$260,000	\$180,000	\$440,000
Operational Concepts	\$130,000	\$60,000	\$190,000
Task 5 Define Operational Concepts	\$130,000	\$60,000	\$190,000
System Design	\$320,000	\$510,000	\$830,000
Task 6 Administrative Design	\$120,000	\$180,000	\$300,000
Task 7a System Architecture	\$110,000	\$110,000	\$220,000
Task 7b Technical Requirements	\$90,000	\$220,000	\$310,000
Business Analysis	\$370,000	\$500,000	\$870,000
Task 8 Business Case	\$240,000	\$160,000	\$400,000
Task 9 Evaluation Framework	\$30,000	\$110,000	\$140,000
Task 10 Interoperability with Other Systems	\$30,000	\$80,000	\$110,000
Task 11 Transition Strategy	\$20,000	\$100,000	\$120,000
Task 12 Risk Analysis	\$50,000	\$50,000	\$100,000
Total, Excluding Pilot Tests	\$1,600,000	\$1,900,000	\$3,500,000

Note: Excludes pilot tests or demonstrations, which could range from \$1 million to \$5 million

Budget Context

Comparisons to Other Efforts

- **Oregon:**

- » 2001-2007: Policy plus pilot: ~\$3 M
- » 2011-2013: ~\$4 M

- **Minnesota**

- » ~\$5 Million over 4 years, including policy research, attitude surveys, technology industry outreach, and trials

- **I-95 Corridor Coalition:**

- » ~\$1M so far – early policy and technical investigations

- **University of Iowa research and demonstrations:**

- » ~\$17 M over 4 years
 - New onboard unit and back office technology development
 - 2,650 participants in 12 different regions

FINALIZING REPORT AND COMMUNICATING FINDINGS TO THE LEGISLATURE

Steering Committee Direction on Draft Report

- **Committee agrees gas tax is unsustainable**
 - » **Has not agreed on whether to supplement or replace it**
- **Clarify how legislature will be engaged in the process**
- **Communications with respect to this issue needs to consider other transportation funding issues such as potential revenue packages and tolling proposals**
- **Clarify that Steering Committee has not vetted budget**
 - » **Relies on Commission and WSDOT staff**
- **Evaluation should include comparing revenue outcomes**
- **General consensus that Steering Committee should continue**
 - » **Some additions may be appropriate**

Path to Finalize Report

Steering Committee comments and direction

- December 4, 2012 (last week)

Transportation Commission Briefing and response to Steering Committee

- December 12, 2012 (Today)

Create check-final Steering Committee report

- January 4, 2013

Approve Steering Committee report

- January 11, 2013 (Committee meeting via web conference)

Transportation Commission review and approval to send to Legislature

- January 23 or 24 at Commission meeting in Olympia

Briefing the Legislature (Schedule to be determined)



**WORK PLAN FOR
JANUARY – JUNE 2013**

Proposed Work Plan after Final Report January-June 2013

- **Report to legislature (January/February?)**
 - » **Transportation Committees**
 - » **Individual legislator briefings**

- **Public Relations**
 - » **Editorial boards?**
 - » **Meet with media?**

- **Begin Task 3 of Work Plan – Define Policy Objectives**
 - » **One or two topics from work plan**
 - » **Discuss at March Steering Committee Meeting (Meeting #5)**

Continued...

Proposed Work Plan January-June 2013

- **Background Policy Research (begin Task 4 of Work Plan)**
 - » **Preliminary research into:**
 - **Fleet and vehicle miles of travel composition trends, forecasts and scenarios;**
 - **Quantification of out-of-state travel by Washington residents;**
 - **Quantification of travel in Washington by out-of-state travelers;**
 - » **Preliminary rate options report**
 - **Initial research and analysis of rate-setting options based on experiences in other contexts and the Washington State context;**
- **Voice of Washington Survey**
 - » **Small, special purpose survey**
- **Report out at May Steering Committee Meeting**

Proposed Schedule for January-June 2013

