

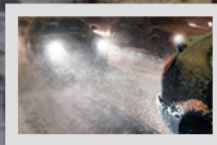


Washington State Road Usage Charge Assessment

*Potential Road Usage Charge Concepts
for Washington*

*For Discussion at
Steering Committee Meeting #2*

*Document # 2
October 23, 2012*



Washington State Transportation
Commission



Washington State
Department of Transportation

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Section 1:

Overview and Key Takeaways from Steering Committee Meeting #1

Legislative Directive

The 2012 Regular Session of the 62nd Legislature passed a Supplemental Transportation Budget, providing funding to the Washington State Transportation Commission (WSTC) **“solely to determine the feasibility of transitioning from the gas tax to a road user assessment system of paying for transportation.”**¹ The Legislature also provided funding to the Washington State Department of 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 will be conducted under the guidance of a Steering Committee. Required activities include:

- Review relevant reports and data related to models of road usage assessments and methods of transitioning to a road usage assessment system;
 - > Analyze the research to identify issues for policy decisions in Washington;
- Make recommendations for the design of systemwide trials;
- Develop a plan to assess public perspectives and educate the public on the current transportation funding system and options for a new system; and
- Assess technology, agency administration, multistate and Federal standards, and other necessary elements.

Subject to future funding, WSDOT may conduct a limited scope pilot project to test the feasibility of road usage charging for electric vehicles.

No decisions have been reached about whether Washington State will pursue road usage charging. **The purpose of this study is to determine whether road usage charging makes sense for Washington, and if so, make recommendations about what next steps should be taken or further studied before any decisions are reached.**

¹ Engrossed Substitute House Bill 2190, 62nd Legislature, 2012 Regular Session.

Key Takeaways from Steering Committee #1

- **No decisions have been reached about whether Washington State will pursue road usage charging.** The purpose of this study is to determine whether road usage charging makes sense for Washington, and if so, make recommendations about what next steps should be taken or further studied before any decisions are reached.
- **A few implementations, many studies.** There are several places around the world where road usage charges have been used and many more where road usage charges have been studied. Many states in the U.S. are considering road usage charging, but none have implemented a program.
- **Purpose.** The purpose of this assessment is to determine whether road usage charging is feasible in Washington, and if so, make recommendations about what next steps should be taken or further studied before any decisions are reached.
- **Steering Committee charge.** The Steering Committee is charged with developing recommendations on the feasibility of road usage charges as well as a work plan and budget that the Transportation Commission will provide to the Legislature.
- **Assessment reflects Steering Committee priorities.** This assessment is proceeding based on the policy priorities expressed by the Steering Committee and compared to the feasibility criteria developed by the Committee. Both of these are explored in further detail in Section 2 of this report.

Section 2:

Steering Committee Input on Policy Priorities and Feasibility Criteria

How Policy Objectives and Feasibility Criteria Fit into this Assessment

Policy Objectives

The policy objectives for road usage charging in Washington vary from constituency to constituency. We developed road usage charge concepts designed to achieve the policy objectives expressed by the Steering Committee, recognizing that there may be some tradeoffs in how well different objectives are met.

Feasibility Criteria

We tested the road usage charge concepts against a set of feasibility criteria that were influenced by the views expressed by the Steering Committee to create the feasibility assessment.



Steering Committee Survey Responses on Policy Priorities

Facilitated Discussion. At the first Steering Committee meeting, we had a facilitated discussion regarding the purpose for the road usage charge. Based on this discussion, we assembled a list of potential policy priorities and surveyed the Committee to gain clarity about their priorities for a potential road usage charge.

Survey Responses. Eleven out of 20 Steering Committee members responded to a survey about policy priorities and feasibility criteria. We used these survey responses to develop statements of policy objectives that begin on page 10. While the survey responses are not representative of the views of all Committee members, or of the wider Washington population or their elected officials, they do provide a healthy cross-section of the population and are indicative of the potential policy considerations associated with potential road usage charge concepts.

Opinions about the policy priorities varied among respondents, but **the following policy issues were most important** to the Steering Committee members who responded to the survey:

- **Addressing erosion of fuel tax revenues and creating a sustainable revenue stream and**
- **Resolving equity issues surrounding who pays and who benefits from (or uses) the system.**

Social objectives received mixed support.

We will review the policy priorities further at Steering Committee meeting #2.

Steering Committee Ranking (11 respondents)						
Policy Priorities	Very Important	Somewhat Important	Not Important	Should not be considered or included	Score	Steering Committee Comments
Slow/stop transportation revenue erosion due to improvements in vehicle fuel efficiency	9	2	0	0	1.8	Note that there is more going on than just vehicle efficiency. People are driving less too.
Improve equity in who uses and who pays for transportation	6	5	0	0	1.5	Note that equity is a tricky question. Getting people into buses will benefit drivers too by reducing congestion.
Increase the transparency of what road use costs and how funds are spent.	6	5	0	0	1.5	
Create a sustainable revenue source for roads	7	2	0	1	1.4	This seems like too big a task for a user fee. And if we want to go big, it needs to be a fee used for moving people and goods, not just roads.
Create a sustainable revenue source for all surface transportation (roads and transit)	7	2	1	1	1.3	Transit funding is critical; however, if we are looking at "usage" form of assessment, the expense (i.e. projects) should have a direct nexus to the revenue source.
Supplement the gas tax	5	3	1	1	1.1	A strategically planned phase-in might work; it would be a difficult "sell" to the public if we recommended an "additional" tax (call it charge/fee--it's still viewed as a tax).
Use road usage charging to enable congestion pricing, where prices differ by road and/or time of day	2	8	1	0	1.1	Users want a system to use, not just to know it's there.
Reduce the amount of driving, and/or encourage alternatives to driving	2	6	3	0	0.9	<ul style="list-style-type: none"> • If it perceived as a "life-style" manipulation, selling the new concept would be more difficult. • Depends on cost to society • Technically, I don't care if people drive more or less. I care more about the externalities of driving, which often correlate to the amount of driving but not always.
Maintain existing gas tax policy that generally links who uses and who pays for transportation	2	6	0	2	0.6	<ul style="list-style-type: none"> • Needs to be researched • The existing gas tax doesn't have perfect equity either. See above. And add studded tires and many other issues where gasoline does not equal use.
Reduce energy usage	2	3	4	1	0.5	<ul style="list-style-type: none"> • Reducing energy usage and Green House Gases are important, but not to a Road User Charge system • Depends on cost to society
Reduce greenhouse gas emissions	2	3	4	1	0.5	<ul style="list-style-type: none"> • There are other initiatives with reduced energy/reduced emissions as goals. This is an opportunity to find revenue to make investments in needed infrastructure. • Depends on cost to society
Replace the gas tax	2	3	2	3	0.1	<ul style="list-style-type: none"> • This would be a long-term goal. • Needs to be researched • Visitors should continue to pay
Other					0.0	<ul style="list-style-type: none"> • Encourage alternative energy sources with incentives • Improve fluidity of motion • Reduce traffic collisions and especially fatalities

Note: Score is based on the average score of respondents where: Very Important = 2; Somewhat Important = 1; Not Important = 0; Should not be considered or included = -2.

Policy Objective: Create a Sustainable Transportation Revenue Source to Address Erosion in Revenue Due to Vehicle Fuel Efficiency Gains

Eroding revenue from the gas tax was the main impetus for evaluating the feasibility of road usage charges in Washington, and the survey of Steering Committee members confirmed that this was the most important policy objective. If road usage charges are to stem the erosion of gas tax revenues, they must either replace the gas tax entirely or supplement it—the surveyed Steering Committee members favored supplementing the gas tax over replacing it.

There are several ways to interpret these approaches.

- **Replacing the gas tax** could mean one of two things:
 - > Repealing the gas tax and replacing it with a new charge.
 - > Phasing in a new charge over time.
- **Supplementing the gas tax** could mean:
 - > Using the road usage charge to make up for the revenue loss from the gas tax, but maintain both systems. The new charge could be applied only to vehicles that do not use gasoline, or to high mileage vehicles only. Over time, more and more vehicles might be in the category that is subject to the alternative charge, and a natural transition process might occur. This is similar to the phase in described under replacing the gas tax, above.
 - > A system whereby everyone pays the gas tax and road usage charge. This has two potential rationales:
 - Make up for the declining gas tax revenue with a supplemental road usage charge.
 - Maintain a tax on fuel but change it to an environmental charge while designating the road usage charge for access and usage of the road network.

Implications for this Assessment

It is not necessary for the issue of replacing or supplementing the gas tax to be resolved for this feasibility assessment. However, this will be an important policy discussion for further evaluation after the January 2013 report to the Legislature.

Policy Objective: Improve Equity in Who Uses and Who Pays For Transportation

When it comes to the gas tax, or a road usage charge that might replace it, most people think that equity revolves around the notion that the gas tax has always been a reasonable proxy for a user fee—all cars used gasoline, so charging a tax per gallon ensured that everyone paid their fair share. **With the popularity of hybrid gas/electric cars that get many more miles per gallon than cars with traditional engines, and plug-in electric cars that use no liquid fuel at all, there is a sense that drivers of these vehicles are not paying their fair share for the development, upkeep, and rehabilitation of the road system.** Equity, therefore, is one of the driving forces of a desire for road usage charging.

Equity in transportation finance cannot be viewed simplistically, but must also consider²:

- People's ability to pay;
- Whether people in a particular geography get back a reasonable share of what they contribute;
- Whether people pay for the costs they impose on society; or
- Whether people were adequately involved in the decision making process.

Implications for this Assessment

No tax mechanism is perfectly equitable. This includes the current gas tax. All will involve tradeoffs that emerge from the difficulty of how to slice and dice the costs and benefits, and the imperfection of any measurement system. Despite these difficulties, the desire to have road users pay in some proportion to their road use is embedded in this policy objective. **We do not have to solve all of these issues in this assessment to achieve a finding of feasible;** however these issues will have to be addressed if a road usage charge moves towards implementation. At the least, people will want to know how a proposed system compares to the gas tax.

² Further exploration of the topic of equity and transportation finance can be found in: Transportation Research Board of the National Academies, Committee on Equity Implications of Evolving Transportation Finance Mechanisms, "Special Report 303, Equity of Evolving Transportation Finance Mechanisms", 2011.

Policy Objective: Accomplish Other Social Objectives

A road usage charge can also be used to accomplish social objectives, such as:

Increase the transparency of what road use costs and how funds are spent. All of the Steering Committee respondents believed that increased transparency was an important policy objective of a road usage charge.

Reduce the amount of driving. Some would like to use a road usage charge to reduce the amount of driving and/or encourage alternatives to driving. Eight of the 11 Steering Committee members felt that this objective was important.

Reduce energy usage. Similar to reducing driving, some would like to use a road usage charge to encourage less energy use. Only 5 of the 11 Steering Committee respondents felt that this was an important objective of a road usage charge.

Reduce greenhouse gas emissions. Similar to the objective to reduce energy use, only 5 of the 11 Steering Committee respondents felt that this was an important policy objective of a road usage charge.

Reduce congestion through pricing. Charges are assessed during specific times and at specific places to change travel behavior and manage congestion. Congestion charging is typically limited to congested zones or corridors in urbanized areas or other heavily traveled routes. Ten of the 11 Steering Committee members that responded to the survey felt that congestion pricing was an important element of a road usage charge.

Implications for this Assessment

Some members of the Steering Committee clearly favor incorporating most of these other social objectives into a road usage charge, although there are some dissenting opinions. The extent to which these opinions extend to the public and the Legislature would be speculation until public attitude surveys can be conducted.

We do know that other places that tried to advance road usage charging found that adding non-revenue related policy objectives tended to reduce public acceptance of road usage charge proposals. This is an important consideration when constructing a potential road usage charge for Washington.

Steering Committee Survey Responses on Feasibility Criteria

In addition to exploring policy priorities, we also had a facilitated discussion regarding potential feasibility criteria at the first Steering Committee meeting. The post meeting survey on policy priorities also included a list of potential feasibility criteria. While there were some gradations in opinion, **the Steering Committee generally found all of the feasibility criteria raised at the first Steering Committee meeting appropriate.**

Committee members also had an opportunity to specify additional criteria and offer comments to the suggested criteria. To better understand the value of these rankings, each was scored, where: Very Important = 2; Somewhat Important = 1; Not Important = 0; Should not be considered or included = -2. The table on page 15 reports the average score in descending order. Overall, there was a general consensus that all of the proposed feasibility criteria were appropriate.

Feasibility Criteria Used in this Assessment

- **Convenience:** The system is convenient to the users; it does not impose a significant burden for compliance and offers choices to meet the needs of diverse users.
- **Implementability:** The system can overcome implementation barriers and challenges such as public acceptance and costs to implement and operate - demonstrate that reasonable solutions exist.
- **Transparency:** The system can achieve transparency in the rate-setting, customer billing, and accounting.
- **Stability and Sustainability:** High degree of confidence in revenue expected from the system, measured by revenue stability and sustainability relative to the gas tax.
- **Privacy:**
 - > Actual – The system offers privacy reassurance measures to protect personal travel information.
 - > Perceived – Even though privacy concerns can be resolved, the system must also have a perception that privacy can be maintained.
- **Fairness (Equity):** The system can collect revenues from users in a way that is fair across classes of users such as cars and trucks; urban and rural residents; and motorists of all income levels.

- **Flexibility:** The system can accommodate evolving revenue collection technologies, revenue needs, user needs, and policy changes such as rate setting.
- **Choice:** Users can choose from a menu of options to meet their individual preferences that consider:
 - Amount of information provided to the system administration (government or private);
 - Method of payment (cash, credit, debit, online, in person);
 - Type of technology; and
 - Amount paid in a single transaction.
- **Out-of-state travel:** The system can distinguish between in-state and out-of-state travel.
- **Collect Revenue from Out-of-State Travelers:** The system has an appropriate way to collect revenue from out-of-state travelers. Achieving this objective may be subject to these considerations:
 - > Magnitude of potential revenue?
 - > Costs necessary to collect revenue from out-of-state travelers?
 - > Is the revenue worth the cost?

Feasibility Criteria Priorities: Steering Committee Survey Responses

Feasibility Priorities	Very Important	Somewhat Important	Not Important	Should not be considered or included	Score	Steering Committee Comments
Convenience. The system is convenient to the users. It does not impose a significant burden for compliance and offers choices to meet the needs of diverse users.	9	1	0	0	1.9	
Implementability. The system can overcome implementation barriers and challenges such as public acceptance and costs to implement and operate.	9	2	0	0	1.8	
Transparency. The system can achieve transparency in the rate-setting, customer billing, and accounting.	8	3	0	0	1.7	
Stability and sustainability. There is a high degree of confidence in the revenue expected from the system, measured by revenue stability and sustainability relative to current revenue sources.	7	4	0	0	1.6	Most important
Privacy. The system offers protection for users concerned about privacy.	7	4	0	0	1.6	
Fairness. The system can collect revenues from users in a way that is fair and equitable across classes of users such as cars and road usage charge; urban and rural residents; and motorists of all income levels.	9	1	0	1	1.5	
Flexibility. The system can flexibly accommodate evolving revenue collection technologies, revenue needs, user needs, and policy changes such as rate-setting.	7	3	0	1	1.4	
Choice. The system will offer drivers choices: (How charges are assessed; How charges are paid; Type of technology)	4	6	1	0	1.3	The ones in parenthesis are not really choices, or only very limited choices
Out-of-state travel. The system can distinguish between in-state and out-of-state travel.	4	6	1	0	1.3	
Out-of-state travelers. The system has an appropriate way to collect revenue from out-of-state travelers.	2	8	1	0	1.1	

Note: Score is based on the average score of respondents where: Very Important = 2; Somewhat Important = 1; Not Important = 0; Should not be considered or included = -2.

Section 3:

Potential Road Usage Charge Concepts for Washington

Section 3A:

Road Usage Charge Concept Fundamentals

Core Elements of a Road Usage Charge

The core elements of a road usage charge are:

- **Principal.** The responsible party—individual or entity such as a corporation or other organization—that is legally responsible to pay charges and fines. This party should be defined in law.
- **Vehicle.** Vehicles that need to pay a road usage charge should be identified in legislation, as should vehicles that might be exempted.
- **Road Network.** The road network defines the roads that are subject to the road usage charge. It is possible that some roads might be excluded from charges, such as roads on private land and toll facilities.
- **Usage.** A measure of usage of the road system that can be based on distance or time (or both).
- **Charge Rates.** How much is charged per unit of usage.
- **Charging Policy.** The set of laws, regulations, and rules that defines the road network, usage, rates, and approved methods of measurement.
- **Road Usage Charge Administration.** Includes account management, charge management, compliance and enforcement, and policy/administrative functions. A combination of governmental and private entities can carry out these functions, as discussed in greater detail in Section 3C.

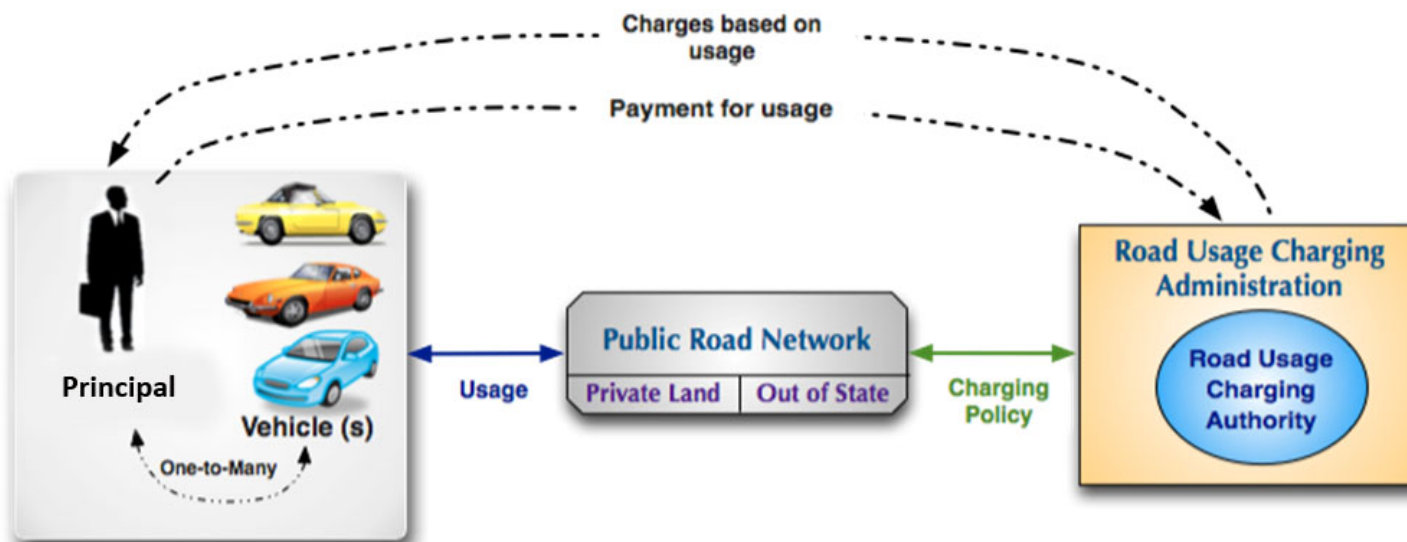
Operational Concepts

The core elements combine to form operational concepts that include these characteristics:

- Every vehicle will have a single principal, but a principal may be responsible for more than one vehicle.
- Usage of the vehicle on the road network will generate charges based on the charging policy.
- A road usage charging administration will manage accounts, charge the principal, and collect and manage payments.
- The road usage charging administration might be part of an existing organization or organizations, a new entity, or some combination of these. It may also encompass both governmental and private sector elements. We explore alternative road usage charging administrative concepts in Section 3C.

Figure 3-1 provides an overview of how the core elements fit together into the *generic operational concept*. In Section 3B, we present and describe eight alternative operational concepts in detail.

Figure 3-1 Generic Road Usage Charge Operational Concept

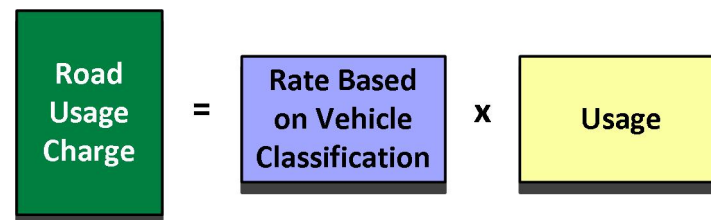


A Simple Charging Policy

At its simplest, the road usage charge consists of a rate that applies to road usage on all roads at all times (Figure 3-2):

- **Rate**, could be the same for all vehicles or differ based on:
 - > Number of axles;
 - > Physical size of vehicle (length, width, and height);
 - > Type of vehicle drive train (e.g., internal combustion engine, gas hybrid, diesel hybrid, electric.);
 - > Vehicle class; or
 - > Combination of any of the above.
- **Usage**: The amount of usage based on some combination of these factors:
 - > Time:
 - Calendar (e.g. week, month, year); or
 - Engine run time. Distance:
 - Odometer reading;
 - Computations from an inertial navigation system (INS); or
 - Computations from a global positioning system (GPS.)

Figure 3-2 A Simple Road Usage Charge



More Complex Charging Policies

In addition to simple road usage, charging policies can assess charges for congestion and environmental impacts of driving, either separately or in combination.

Congestion Charging

Charging for congestion requires knowing when and where a vehicle is moving. Location and time of day can be used individually but are most effective in combination (Figure 3-3). For

example, charging based on time of day alone acknowledges that the roads are generally more congested at peak times, but not all parts of the road network experience congestion at peak times. Similarly, the system can charge more for a specific location (a dense urban neighborhood, for example), but these roads are typically not congested much of the day. Charging for congestion significantly increases the types of technology needed to assess road usage charges.

Environmental Charging

To add environmental factors to the charge calculation (Figure 3-4), there are two potential approaches, using either:

- Environmental Protection Agency (EPA) emissions ratings (or ranges of ratings), engine sizes, engine types, and other fixed characteristics.
- Actual emissions or noise measurements.

Environmental factors are commonly incorporated into European taxes for vehicles. **Another approach is to redefine the existing gas tax as an emissions tax paid based on the consumption of fuel.** This concept is analogous to taxes on non-gasoline categories of other petroleum-based products and water utilities that price both water consumption and sewage generation per household based on the amount of water used.

Figure 3-3 Road Usage Charge with Congestion Charging

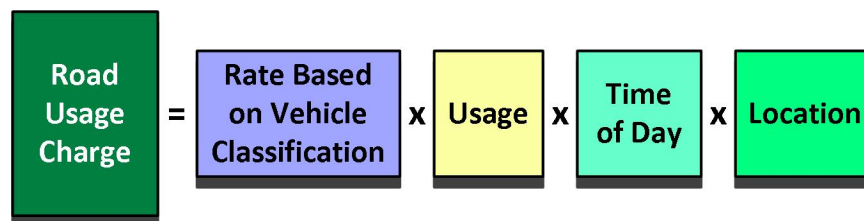
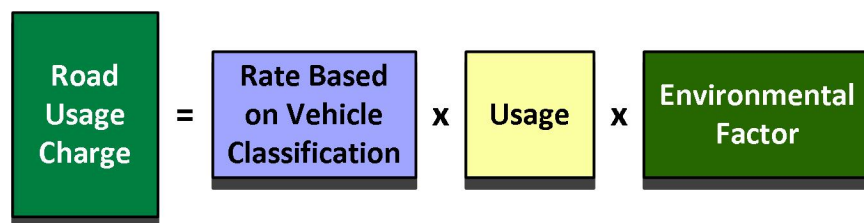


Figure 3-4 Road Usage Charge with Environmental Charging

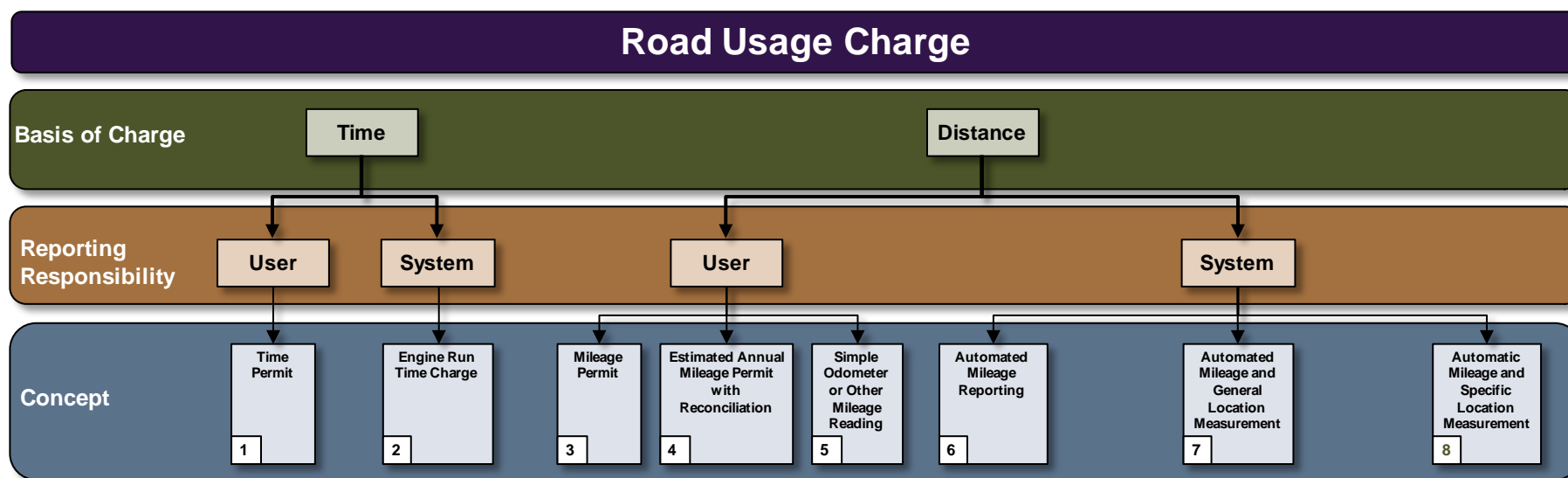


Framework for Operational Concepts

Figure 3-5 outlines a framework for eight operational concepts, each reflecting how Washington State might implement a road usage charge, consisting of the following dimensions:

- **Basis of the charge** - Either distance or time (potentially including congestion or environmental factors).
- **Reporting responsibility** - Either declared by the user or detected by the road usage charge “system,” including any component technologies.

Figure 3-5 Road Usage Charge: Framework for Operational Concepts



These eight operational concepts capture a broad range of policies—from “simple” usage charging to “more complex” congestion and environmental charging, and technologies—from no technology to non-location-based technology to location-based technology. It is possible—and probably preferable—to implement several operational concepts in parallel rather than relying on one single concept in order to achieve a range of choices for principals.

We elaborate on the technology alternatives associated with the eight operational concepts on the next page.

Enabling Technologies

We further considered technology options to implement each of the eight concepts, as illustrated in the bottom row of Figure 3-6 (next page). There is no technology required for the concepts in which the principal reports usage, while there are several technology alternatives for concepts in which the system detects usage. Please reference the report “Domestic and International Review and Policy Context” from the Steering Committee #1 Briefing Material for a more detailed treatment of the technology options and how each works.

Technology Options for Time-Based Systems

The technology for reporting engine run time is relatively simple. Vehicles emit unique vibrations that only occur when the engine is running, and there is a device that can detect this vibration. It would be a simple matter to keep track of how long the engine is running, and then communicate the information to the road usage charge authority via in-vehicle telematics, Bluetooth device to a smartphone, or built-in single-purpose device.

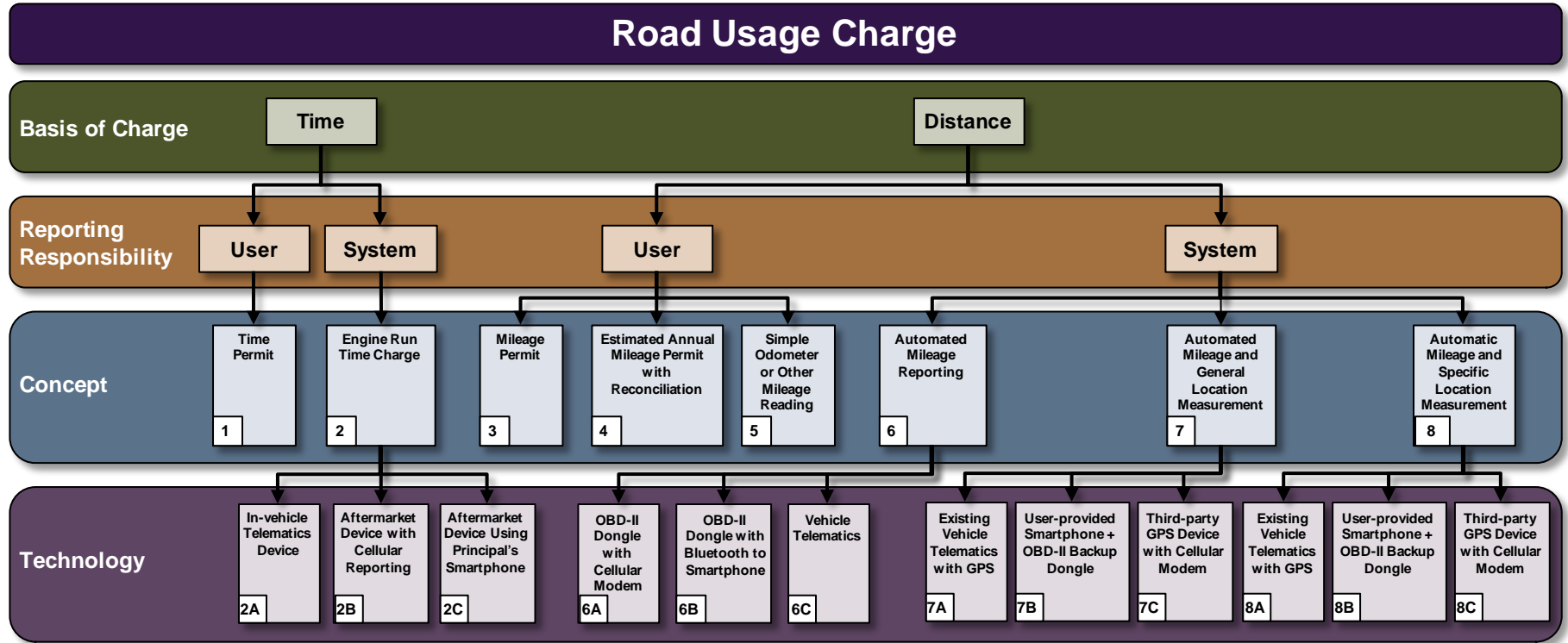
Technology Options for Distance-Based Systems

Automatic system reporting requires some technology and the technologies become more complex from left to right in the bottom row of Figure 3-6 (next page).

- **OBD-II devices** such as the Progressive insurance “Snapshot” dongle are currently used for reporting miles for pay-as-you-drive (PAYD) insurance. The dongles have built-in cellular modems that transmit data over the Internet to a central server.
- Experiments in Ohio and Oregon are testing the **OBD-II dongle with a Bluetooth interface** to a cellular telephone that runs an application to collect and report data from the vehicle.
- **Vehicle telematics** such as GM’s “OnStar” or Ford’s “SYNC” can collect the data and transmit them over the cellular network to a cloud-based application for automated reporting.
- A number of stand-alone, **third-party GPS** units exist and are field-tested. Most of these are from truck mileage systems, but can be adapted to a car.



Figure 3-6 Road Usage Charge Operational Concepts with Enabling Technology Options



Section 3B:

Road Usage Charge Operational Concepts

Introduction

In this section, we explore in greater detail the eight road usage charging operational concepts (and technology options) that Washington State could implement. Note that:

- **These are illustrative concepts** designed to provide a better understanding of the range of alternatives and the high-level requirements to implement them.
- **Some concepts require no technologies**, while others can be carried out using one or more technologies.
- **Operational concepts are not mutually exclusive.** In fact, if road usage charging advances in Washington State, it is likely that a combination of several concepts would be pursued, especially if some of the more technologically advanced concepts were included. We will discuss some potential combinations at the October 30 Steering Committee meeting.
- **Switching to a road usage charge all at once, in a “big bang”** increases the consequences of any failure in the system. A more gradual approach to introducing the road usage charge will have smaller downside risks.
- Policy choices, such as rate structure, determine whether some of these concepts can work.
- All of the eight operational concepts can be accommodated by a variety of administrative concepts, which are covered in Section 3C.

For each of the operational concepts we explore the basic concept, operations and enforcement.

In Section 4, we test each of the individual operational concepts through the lens of the feasibility criteria.

Summary of Concepts

Concept	Description
Time-Based Concepts	
1. Time Permit	Purchase unlimited road network access for a set period of time (e.g., week, month, year).
2. Engine Run Time Charge <i>Three technology alternatives: (A) In-vehicle telematics device, (B) Aftermarket device with cellular reporting, (C) Aftermarket device using principal's smartphone</i>	System detects engine run time over a set period (e.g., monthly) and reports charges automatically.
Distance-Based Concepts	
3. Mileage Permit	Purchase a license to drive a certain number of miles.
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).
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.
6. Automated Mileage Reporting <i>Three technology alternatives: (A) OBD-II dongle with cellular modem, (B) OBD-II dongle with Bluetooth to smartphone, (C) Vehicle telematics</i>	System detects mileage traveled and reports charges automatically at the end of a period (monthly, quarterly).
7. Automated Mileage and General Location Measurement <i>Three technology alternatives: (A) Existing vehicle telematics with GPS, (B) User-provided smartphone + OBD-II backup dongle, (C) Third-party GPS device with cellular modem</i>	System detects mileage traveled by geographic zone over a set period of time (e.g., monthly) and reports charges, with rates set by zone.
8. Automatic Mileage and Specific Location Measurement <i>Three technology alternatives: (A) Existing vehicle telematics with GPS, (B) User-provided smartphone + OBD-II backup dongle, (C) Third-party GPS device with cellular modem</i>	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.

Concept 1: Time Permit

Basic Concept

- This system allows unlimited road usage in Washington for a specific period, such as a year, half year, month or week.
- The European vignette systems apply this approach using **windshield stickers**, but some countries have migrated to electronic approaches where the license is credited to a particular license plate, and random checks of license plates can detect people that are driving without a permit.
- Other approaches involving smartphones, in-vehicle telematics, and cloud computing are also possible and are being tested in New Zealand.
- Washington residents will likely buy yearly passes, unless they have cash flow issues, in which case they may purchase licenses that are good for a shorter period.

Operation and Enforcement

- No account is necessary since a physical sticker is issued, or, in the case of the electronic systems, connected to a license plate.
- Licenses could be sold at retail outlets such as gas stations or convenience stores, or by phone, mail, or Internet.
- Visitors can purchase a license at the border, or by phone, mail or Internet.
- For stickers, enforcement is by visual inspection by an officer. Electronic systems will rely on random checks of license plates using cameras with optical character recognition. Other approaches are also possible.
- Electronic systems have the advantage of being able to be renewed by phone or over the Internet or via in-vehicle telematics devices.

Figure 3-7 Slovenian Vignette



Concept 2: Engine Run Time Charge

Basic Concept

- If a vehicle's engine is running, it is likely using the road system. **Engine run time, therefore, is a reasonable proxy for road usage.** It is similar to the gas tax in this way, but can apply to all propulsion systems.
- It is similar to a simple system of recording mileage, but uses engine run time instead. **The advantage of this system over a mileage system with in-vehicle recording is that there is no need to connect to the engine** – other approaches such as engine vibration sensors are simpler to install.
- People will pay more when they sit in congestion or on slower roads. However, paying more for sitting in congestion can be thought of as a proxy for congestion pricing.
- Some have expressed concerns that people might choose lower their bill by speeding. While this might be the case, the savings are likely to be low and there are existing ways to discourage speeding

Figure 3-8 Typical Telematics User Interface for Concept 2A



Operation and Enforcement

- This system would use an in-vehicle device that records the amount of time the engine is running.
- There are three potential approaches, with the principal being able to choose the approach that is right for them:
 - > **Technology 2A: In-vehicle Telematics Device.** This approach piggybacks on an existing device such as OnStar. The principal would have to install (or have installed) an application that records engine run time and then transmits the run time information to the road usage charge authority.³ See Figure 3-8 for an illustrative example.

³ The road usage charge authority may choose to outsource this function to a contractor. We cover these administrative options in Section 3C.

Concept 2: Engine Run Time Charge (continued)

- > **Technology 2B: Aftermarket Device with Cellular Reporting.** With this approach, the principal would install a dedicated device that measures engine run time, and transmits and transfers usage data to the road usage charging authority by internal cellular modem (Figure 3-9).
 - The aftermarket device could measure engine run time by detecting the unique vibration of the car while it was running, monitoring electrical patterns, or other simple technologies.
 - For electronic security, this device may also need to contain an OBD-II-interface.
 - The device may require installation by a professional mechanic.
- > **Technology 2C: Aftermarket Device using Principal's Smartphone.** This is identical to Technology 2B, except communication to the road usage charge authority is via the principal's smartphone.
 - Engine run data is transmitted to a smartphone using a Bluetooth connection and the usage data is uploaded to the road usage charge authority.

Figure 3-9 Vibration Measurement Device for Concepts 2B and 2C



Concept 3: Mileage Permit

Basic Concept

- This is similar to Concept 1, the Time Permit, except principals **purchase blocks of miles instead of blocks of time**. It is similar to the paper system that operates in New Zealand (Figure 3-10.)
- Mileage blocks could be small or large, at the option of the principal, and in line with their cash flow constraints.
- This concept is slightly more complicated however, in that the principal must provide an odometer reading.

Operation and Payment

- The road usage charge authority must establish rules for display of purchased distance, such as a windshield sticker or other proof of purchase required to be kept on-board the vehicle (similar to registration and insurance), or have a way for account information to be accessible via license plate records.
- The principal must purchase another block of miles before the odometer reaches the licensed limit.
- Principals may be able to pay online, by smartphone application, by phone, by mail, kiosk, agent (e.g., convenience store or gas station) or customer service center.
- At each purchase, the principal must verify name and account number, and choose how many miles to buy. The accounting system will locate the account, record a time stamp for the purchase, and generate the new mileage limit.

Figure 3-10 New Zealand Distance License



Concept 4: Estimated Annual Mileage Permit with Reconciliation

Basic Concept

- Similar to income taxes, principals will estimate how many miles they drive per year and pay in advance based on that amount. (Figure 3-11.)
- At the end of the year, principals will reconcile the difference between the estimated and actual amounts driven, through a refund, account credit, or additional payment.

Operation and Payment

- Principals must establish an account with a benchmark odometer reading and pre-pay based on estimated miles for the upcoming year.
- After the initial setup, the principal would not be required to interact with the system until the end of the year when the mileage would be reconciled through refund, rollover to the next year, or additional payment.
- Monthly or quarterly payment plans could be arranged for some principals to address cash flow issues.

Figure 3-11 California Estimated Income Tax Voucher

PAY ONLINE: Use Web Pay and enjoy the ease of our free online payment service. Go to ftb.ca.gov and search for **payment options**. You can schedule your payments up to one year in advance. Do not mail this form if you use Web Pay.

DETACH HERE ——— IF NO PAYMENT IS DUE, DO NOT MAIL THIS FORM ——— DETACH HERE

TAXABLE YEAR: **2010** Estimated Tax for Individuals File and Pay by April 15, 2010 CALIFORNIA FORM **540-ES**

Fiscal year filers, enter year ending month: Year 2011

Your first name Initial Last name Your SSN or ITIN

If joint payment, spouse's/RDP's first name Initial Last name Spouse's/RDP's SSN or ITIN

Address (number and street, PO Box, or PMB no.) Apt no./Ste. no.

City (If you have a foreign address, see instructions) State ZIP Code

Amount of payment .00

For Privacy Notice, get form FTB 1131. 1201103 Form 540-ES 2009

Like estimated income taxes, Concept 4 involves principals paying an estimated upfront tax for roadway usage, and then settling when the amount can be determined precisely at the end of a period. At the end of the period, individuals submit their actual odometer reading and either get a refund or pay more, depending on whether they drove more or less than their initial estimate.

Concept 5: Simple Odometer or Other Mileage Reading

Basic Concept

- This is a simple system whereby principals pay for the miles they drive at the end of a specified term, such as a month or a year.
- The principal could measure mileage using one of a number of approved methods, including manual odometer reading or advanced technology such as an OBD-II port device that provides electronic reading. Regardless of method, the principal would self-report the mileage to be used as the basis for payment, subject to auditing.

Operation and Payment

- Vehicles must be equipped with legal, trusted measurement equipment, such as a properly functioning odometer or aftermarket installed measuring device.
- At the end of each reporting period, each principal must self-report his or her mileage and pay the road usage charge.
- To avoid evasion or under-payment, periodic audits would be an appropriate enforcement mechanism.

Figure 3-12 U.S. Income Tax Form

The image shows a 2010 U.S. Individual Income Tax Return (Form 1040). The form is titled "1040 U.S. Individual Income Tax Return 2010". It includes fields for Name, Address, and SSN; Filing Status; Exemptions; and a table for Dependents. The form is partially filled out with placeholder text and checkboxes.

Like annual income taxes, Concept 5 involves payment for miles traveled in the previous tax period based on self-reported information.

Concept 6: Automated Mileage Reporting

Basic Concept

- Vehicles have equipment that measures and reports mileage automatically to a service provider—either government or private contractor—and a bill for usage is sent periodically (e.g., monthly or quarterly.) No location information is collected under this concept.

Operation and Payment

- There are several technology options.
 - > **Technology 6A: OBD-II Dongle with Cellular Modem.** OBD-II port⁴ dongles, such as those used for PAYD insurance provide a simple means of measuring distance travelled without reference to a specific location. The dongle plugs in to the OBD-II port, located under the dashboard, and contains a cellular modem to transmit data to the service provider's computer system. The service provider can detect malfunctions, or if the dongle is removed and contact the principal to provide guidance.
 - > **Technology 6B: OBD-II Dongle with Bluetooth to Smartphone.** An OBD-II port dongle equipped with Bluetooth can be paired with a smartphone to provide a simple means of distance measurement. The phone will be the primary method of distance measurement. Payment and account services can be completed over the smartphone (even when the phone is not in the vicinity of the OBD-II device) or via the Internet, or mail. When the smartphone is not present or does not have sufficient charge, the dongle measures distance traveled and transfers the usage data to the service provider. The service provider can detect if the dongle is removed and initiate appropriate remedies.
 - > **Technology 6C: Vehicle Telematics.** The built-in information/entertainment system of some vehicles, such as those with GM's OnStar or Ford's SYNC systems, are both capable of downloading and running applications, similar to a smartphone. If the telematics service allows the principal the ability to download and run a road usage charge application, then the vehicle itself could record and report mileage.

Figure 3-13 Dongles, Smartphones and In-vehicle Telematics



⁴ The OBD-II port was mandated in 1996 to measure vehicle emissions. There are two classes of vehicles that may not have a compatible port: vehicles built before the 1996 mandate and fully electric vehicles which are not required by law to have OBD-II ports.

Concept 7: Automatic Mileage and General Location Measurement

Basic Concept

- Vehicles are charged for distance with a rate that varies by general location.
 - > The zone may be the entire state of Washington (but distinct from bordering states and provinces).
 - > There could be an additional zone for the Puget Sound Region.
 - > There could be additional zones—for example, central Seattle or other congested areas.

Figure 3-14 Dongles, Smartphones and In-vehicle Telematics with Location Information



Operation and Payment

There are three technology options for this concept, similar to, but not identical to those from Concept 6. The key difference is the ability to distinguish general location.

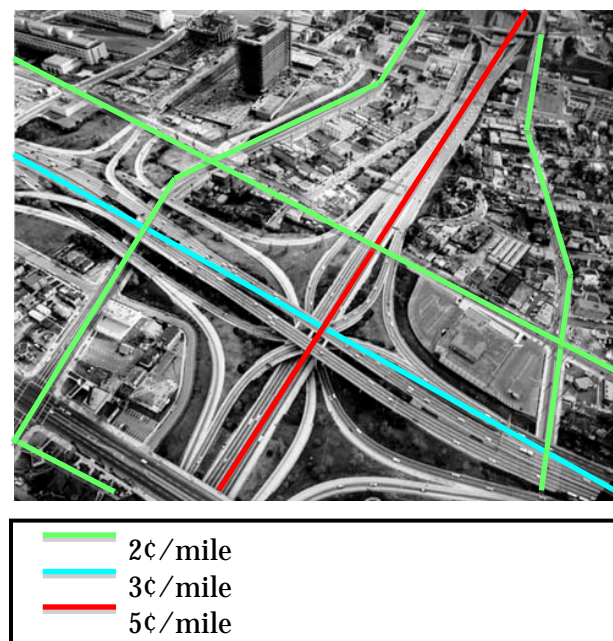
- **Technology 7A: Existing Vehicle Telematics with GPS.** Distance measured by in-vehicle telematics device. Operation similar to Concept 6C.
- **Technology 7B: User-provided Smartphone + OBD-II Backup Dongle.** Distance measured by user's smartphone, but the OBD-II dongle provides backup if the smartphone is not in the vehicle.
 - > If the charge varies by zone and the smartphone is not present, miles may be charged at the highest rate for all zones.
- **Technology 7C: Third-party GPS Device with Cellular Modem.** A dedicated GPS device measures distance traveled in each zone.
 - > For electronic security, it may need to contain an OBD-II interface as well.
 - > Those with an OBD-II interface may be powered by the OBD-II port.
 - > Those without an OBD-II interface will most likely need to be wired in to the vehicle's electrical system, which will require installation by a professional mechanic.

Concept 8: Roadway Specific Pricing

Basic Concept

- Identical to Concept 7, except the system uses specific location on roadway—not just the location within a large zone.
- Per-mile rates are differentiated by facility (Figure 3-15):
 - > Rates are different, even if the facilities intersect
 - > For example, a highway crossing over a local road might be charged at a higher rate than the local roads.
- Requires all vehicles to be equipped with a location-determining device, which include the same alternatives as for Concept 7:
 - > Technology 8A: Existing Vehicle Telematics with GPS.
 - > Technology 8B: User-provided Smartphone + OBD-II Backup Dongle.
 - When the phone is not present and functional in the vehicle, the principal would pay a penalty rate equal to the price of the most expensive facility or more.
 - > Technology 8C: Third-party GPS Device with Cellular Modem.
 - Identical to Concept 7.

Figure 3-15 Roadway Specific Pricing



Section 3C:

Road Usage Charge Administrative Concepts

Overview of Administrative Functions

In order to carry out the operational concepts presented in Section 3B, the State must take care of administrative functions in four primary categories:

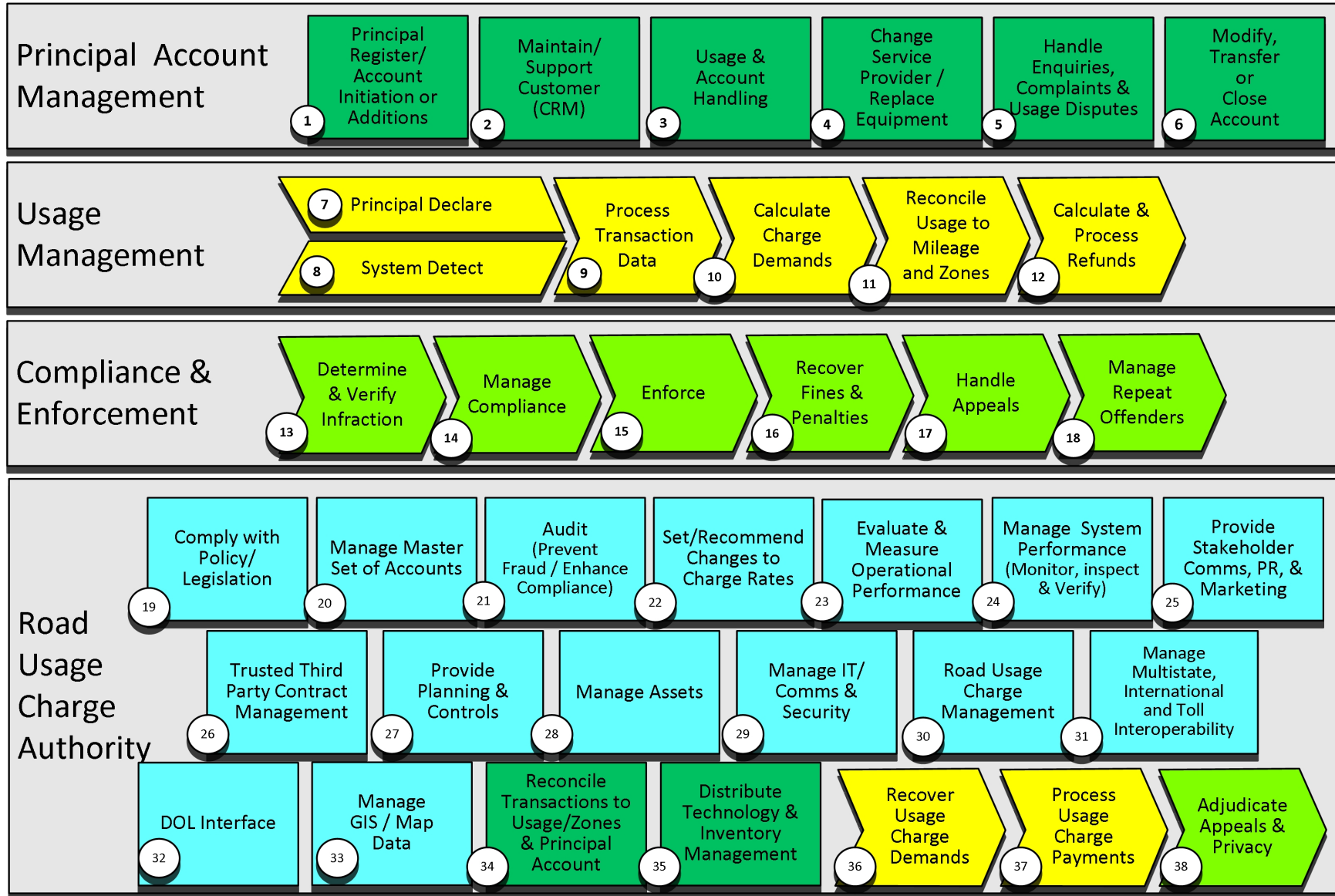
- **Principal Account Management**, covering typical customer management functions such as opening and closing accounts, customer relationship management, and handling inquiries.
- **Usage Management**, comprising identifying road usage and calculating charges (whether detected automatically or through self-reporting,) processing transaction data, and calculation and processing of eligible refunds.
- **Compliance and Enforcement** of road usage charge policy provisions for principals and vehicles. There is a fine balance between compliance and enforcement. In addition to acting as a deterrent to evasion (and associated revenue loss) comprehensive, accurate, and timely enforcement can generate additional revenues depending on the policy for fines and penalties.
- **Road Usage Charge Authority**, including all policy and management functions of the governing authority of road usage charges. The Authority manages and controls the other functional categories and their constituent functions. It holds the compliance responsibility for the State and has the authority to manage (or outsource) all other functional elements. It also has central functions that are unique to the overall running of the road usage charge that will most likely be retained by the government regardless of the degree of outsourcing in other categories.

Across these four categories, we have identified 38 administrative functions needed to carry out a road usage charge (see Figure 3-16 on the next page).⁵ The colors correspond to the four functional categories. Note that the Charge Authority incorporates some functions that relate to the other three categories. Functions represented by arrows are part of a process, while square boxes represent standalone functions.

⁵ For some operational concepts, not all 38 administrative functions will be necessary. For example, item 11 will not be necessary unless charges are differentiated by zone or segment.

Overview of Administrative Functions (continued)

Figure 3-16 Administrative Functions to Operate a Road Usage Charge



Potential Administrative Concepts

The 38 administrative functions presented above may be provided by the government directly, or they may be outsourced in whole or in part to private sector entities.

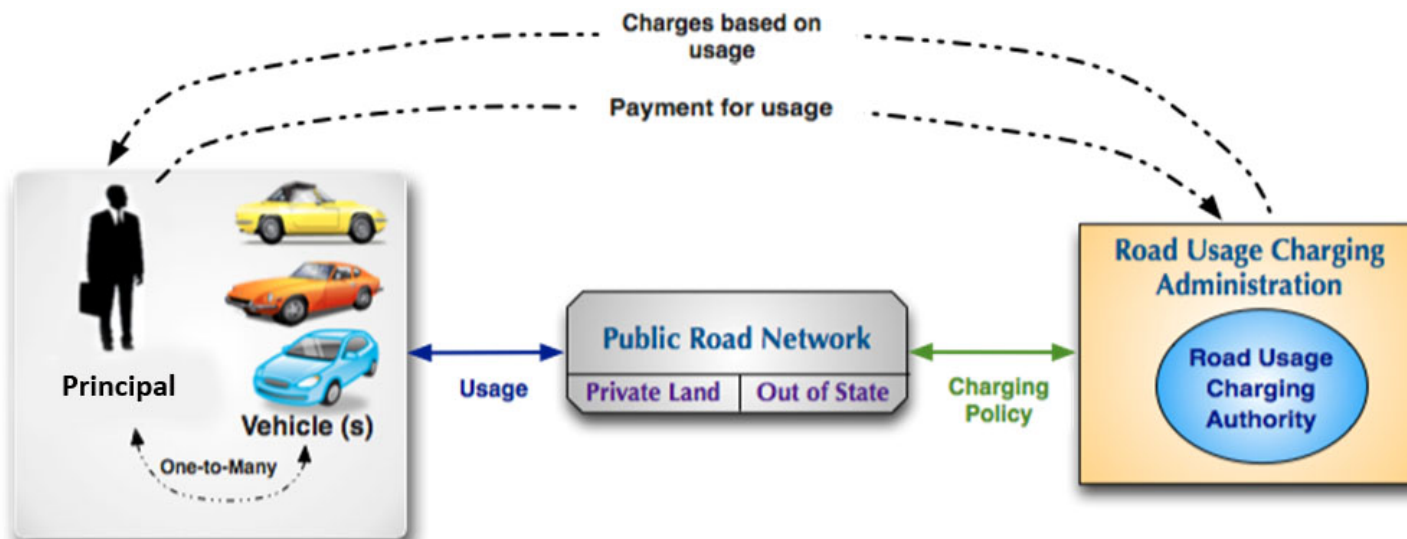
Government-centric Approach

In the government-centric approach (Figure 3-17), the road usage charging authority:

- Holds relationships with all principals and provides all services, including application of the charging policy; principal account and relationship management; providing technology, and collection and processing of payments.
- Interacts with other government agencies, including the Treasury, the Department of Licensing, and enforcement agencies.

Individual elements may be outsourced on a case-by-case basis, but principals only interact with services provided by the government road usage charging authority.

Figure 3-17 Government-centric Approach

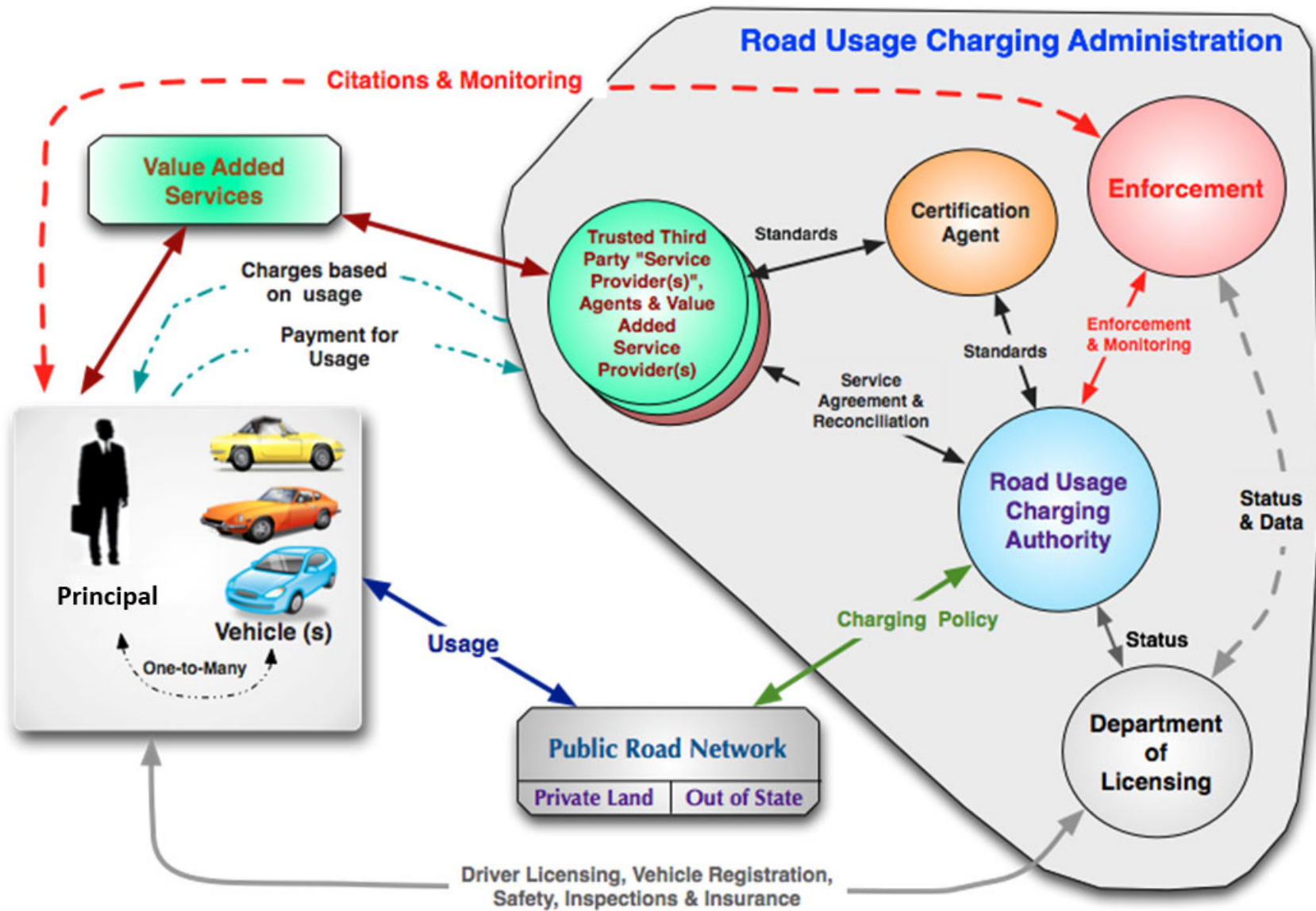


Market-centric Concept

A market-centric concept allows commercial entities called **trusted third-party service providers** to provide road usage charge services and value-added services directly to principals. Characteristics of this concept are shown in Figure 3-18, next page, and include:

- The **trusted third-party service provider acts as an agent on behalf of the principal** in managing the principal's road usage charge account, providing technology, monitoring the account and technology, collecting road usage charges, providing customer service, and providing other value-added services (e.g., traveler information, payment for parking and other services, insurance, and communications).
- The **trusted third-party service provider operates under a service agreement with the road usage charge authority**. The service provider can collect payments from principals on behalf of the government agency, transfer revenues to the government, and reconcile accounts they manage.
- In order to bring technological innovation and reduce the government risk of obsolescence, the **trusted third-party service provider will need to certify their products and services to common standards**. The government needs to set the standards that the trusted third-parties will develop their products and services to meet.
 - > A certification agent might be the independent tester and configuration manager of the products that the trusted third-party service provider wants to use. This ensures consistent and reliable testing while being at arm's length from the process. The certification process guarantees interoperability among products from different providers.
- **The government may operate a parallel system** to offer a choice to those principals who are either uninterested or ineligible for accounts with trusted third-party service providers.
- The market-centric concept also needs interaction among the Department of Licensing, enforcement entities, the road usage charge authority and the principal.

Figure 3-18 Market-centric Concept



Section 3D:

Road Usage Charge Jurisdictional Issues

Introduction to Jurisdictional Issues

When developing a road usage charge, there will be a need to coordinate and interact with people from other states and with a variety of agencies. This section addresses issues related to charging out-of-state vehicles, Washington vehicles traveling in other states, potential multistate approaches, and interoperability issues among agencies.

Out-of-State Vehicles

The survey responses from the first Steering Committee (see Section 2) indicated that there is interest in ensuring that out-of-state visitors (including out-of-country visitors) should continue to pay for their road usage in Washington State as many currently do via the gas tax. All of the road usage charge concepts presented in Section 3C have challenges associated with capturing revenue from out-of-state vehicles.

Challenges

Challenges to collecting revenue from out-of-state drivers are in three categories outlined below. We have not undertaken a full analysis of these issues, or the costs associated with them, but we believe that the costs of handling out-of-state vehicles could be substantial.

- **Compliance and Enforcement**

- > Informing out-of-state motorists of their responsibilities before, during, and after they drive on Washington roads.
- > Recovering charges and potential fines after an infraction is identified and tax demands are issued.
- > Determining the appropriate level and type of compliance/enforcement efforts.

- **Account Management**

- > What kind of burden does it impose on the agency to manage accounts that generate potentially little revenue?
- > What kind of burden does it place on principals to create an account for limited use? What happens when this burden is multiplied as more states engage in road usage charging?

Out-of-State Vehicles (continued)

• Tax and Refund Structures

- > Likely requirement for non-discriminatory rates for out-of-state vehicles.
- > Need for a common interface and harmonized approach to payment of all taxes due.
- > Eligibility and process for road user charge refunds, if eligible, including refunds for fuel tax purchases, for example.

Potential Approaches

This issue needs considerably more study. **It would make sense for Washington to cooperate with its neighbors to develop a way to capture revenue from out-of-state travel.** This would dramatically reduce the costs of enforcement and compliance while increasing revenues and preserving fairness. Furthermore, this could promote an open approach by enabling trusted third-party service providers to offer multistate charge and account management for principals. A study should consider:

- The mileage and revenue potential of out-of-state vehicles on Washington State roads.
- Estimate of the cost of recovering these revenues, including compliance and enforcement.
- Comparison of revenues and cost under several scenarios.
- Unintended consequences, such as people registering vehicles across the border to avoid taxes If Washington chooses not to go through the effort of collecting taxes from out-of-state drivers.

Tradeoffs

The main tradeoffs are:

- The potential (exorbitant) cost of full compliance for out-of-state users compared to the revenue generated.
- Perception among stakeholders and the public that “foreigners” get a free ride and the need to manage or eliminate this perception.

Out-of-State Travel

Some of the road usage charge concepts do not distinguish between travels inside Washington and travel outside. Especially for people who live near the Washington border, this can cause some to pay considerably more than their fair share.

Challenges

Efficiently adjusting a principal's road usage charge bill for out-of-state travel requires a technological solution that allows for the location of travel to be determined. Although this is technically feasible, it is this fear of "tracking" that raises people's opposition to road usage charging. It is possible to create a menu of road usage charge options that allow principals to decide whether they want to use an approach that allows for location identification or not, but if a principal that did a lot of out-of-state travel did not want their location used, they would either have to pay a higher bill, or, go through an involved process of proving their out-of-state travel.

Potential Approaches

- Given the lack of a technological solution that would allow users of non-location-based devices to be reimbursed or credited for out-of-state travel automatically, one likely approach is to disallow refunds for out-of-state travel unless it is done using a location-based technology.
- An alternative approach is to allow a paper-based refund system for non-location-based users. It would likely be onerous on both the principal claiming refunds and the agency processing them. Such paper- and records-intensive approaches (e.g., for fuel tax refunds) tend to be very lightly used in practice. However, by offering the choice, those who insist on refunds without automated location-based measurements of out-of-state travel would be satisfied.

Tradeoffs

The likelihood of public acceptance of location-based devices as the only means of receiving out-of-state travel refunds must be traded off against the potential cost, complexity, and acceptability of a paper-based refund system.

Multistate Approach

If a multistate approach were pursued from the outset, issues associated with out-of-state motorists would be simpler to address.

Challenges

There are several key challenges corresponding to a multistate approach:

- Timing of implementation and various states going live over a significant period of time.
- Multistate certification.
- How to contract, manage, and monitor the performance of trusted third-party service providers serving in a multistate (and multi-province) environment.
- Interoperability of operations.

Potential Approach

The way to offset the challenges and ensure appropriate management and coordination in a multistate environment would be to establish a **multistate coordination committee** to address and establish the most cost-effective path forward for out-of-state travel, interoperability, open market conditions, trusted third-party service provider management and monitoring, and certification issues. This could be part of a broader multistate alliance to discuss and decide the best path forward. Key benefits of such a coordinated multistate approach could include the following:

- For out-of-state users, this could significantly reduce enforcement costs and reduce leakage for each “member” jurisdiction.
- Establishment of a multistate certification entity could serve member states and future member states as they go live in a cost effective way.
- Establishment of interoperability for operations. We discuss alternative approaches in more detail on the next page.

Interoperability

With road usage charging, states and countries will need to come to consider interoperability across states (and Canada).

Challenges

- **Interoperability with road usage charges in other states and provinces.** Several aspects present challenges:
 - > The timeline for deployment of road usage charging in Washington and other jurisdictions are unknown.
 - > Harmonization of policies regarding charging for in-state vs. out-of-state users, rates, and operational concepts.
 - > Should multiple states operate a road usage charge, they would need to develop revenue sharing agreements.
- **Interoperability with existing Washington State toll systems.** In addition to the existing Washington road usage charge—the gasoline tax—drivers in Washington also pay a premium road usage charge—tolls—on certain facilities. The Tacoma Narrows Bridge, SR 520 Bridge, and SR 167 Express Toll Lanes all have tolls with the *Good-to-Go!* system of electronic toll collection.
 - > Depending on the method of collecting a general road usage charge, it may be possible or desirable to integrate the toll collection system with the road usage charge system. Such integration would pose several issues:
 - The existing (and anticipated) toll systems are at a far smaller scale than anything that would be needed for road usage charging. Simply scaling up the existing toll operations may not be the best approach to developing the systems needed for general road usage charging.
 - A road usage charge system that could also be used for tolls on particular roads would need to be capable of distinguishing specific locations. This could add cost and privacy concerns.
 - > The existing system of charging has two components—the gas tax and toll collection—so continuing with two systems should not be seen as a major impediment.

Interoperability (continued)

- > Tolling has not been offered as a technology to enable any of the eight road usage charging operational concepts presented in this report due to the high costs of covering an entire road network with traditional tolling technology. Nevertheless, under a road usage charge, Washington State motorists would be interested in harmonizing their toll and road usage charge payments and accounts. Several dimensions must be addressed including in-vehicle technologies, charging policy harmonization, and financial interoperability.

Approaches

Several approaches are summarized below. Note that it is possible to transition from a “go it alone” approach to one or more of these:

- Implementation of a “peer-to-peer network” of interoperability agreements with other jurisdictions and/or toll authorities. This would be the least complex to set up in the short term with few jurisdictions, but may be more costly in the future if many states come online.
- Implementation of a “centralized” interoperability hub at the outset would be more costly in the short term as it requires establishing a “hub” entity. However, this could lead to long term savings through shared operational costs with other jurisdictions. The International Fuel Tax Agreement and International Registration Plan (for heavy interstate trucks) are instructive models.

As a variation on the centralized interoperability hub, it is even possible for Washington State to *become* the interoperability hub for road usage charges on behalf of other jurisdictions, in exchange for a fee for the service.

Section 4:

Preliminary Feasibility Evaluation

Approach to Feasibility Evaluation

The consultant team considered the feasibility of each of the potential road usage charge concepts through the lens of the feasibility criteria developed by the Steering Committee. We rated each concept across the feasibility criteria using the scale represented by the round symbols shown below and shown in tabular form beginning on page 53:

- Completely Satisfies Criteria = 
- Mostly Satisfies Criteria = 
- Moderately Satisfies Criteria = 
- Minimally Satisfies Criteria = 
- Does Not Satisfy Criteria = 

Note that the ratings are the subjective judgement of the consultant team and are included simply to provide a starting point for the Steering Committee's consideration. Steering Committee members are encouraged to come to their own judgements or to discuss their opinions at Steering Committee meeting #2.

For several criteria there was no difference among the concepts, so we did not include these in the evaluation matrices that follow later in this section. The omitted criteria include:

- **Implementability.** We only proposed concepts that were technically implementable. All concepts would be a significant departure from current systems and be more inconvenient than the gas tax. Public opinion could be an important component of "implementability." However, initial impressions can be deceiving and we suggest that we measure public sentiment with focus groups and attitude surveys after the January 2013 report to the Legislature.
- **Transparency.** This criterion addresses transparency in rate setting, customer billing, and accounting. This is possible with all concepts, and success depends on the quality of the implementation.
- **Stability and Sustainability.** All of the concepts address the issue of declining revenue yield from the gas tax. In all cases, however, the revenue yield would still be at risk from declining value due to inflation. Legislative action would be needed to increase charges to keep up with inflation.
- **Choice.** The individual concepts do not by themselves allow for choice. However, combining concepts would allow for choice. For the most part, any of the proposed concepts can be combined to create a road usage charge system with a range of choices for the principals.

Common Themes Across all Concepts

Regardless of which road usage charge approach is applied, all eight examined concepts were found to have the following similar issues associated with them:

- **Evasion likely to increase.** Not all principals subject to the road usage charge will have a valid vehicle registration and might be able to avoid paying their road usage charges. With the gas tax, even unregistered drivers pay their road usage charge. Further analysis may be needed to determine the impacts of these free riders using the roadway system, but not paying the charges.
- **Infrequent users are problematic.** The high cost and complexity of implementing a road usage charge system that applies to infrequent users is problematic, especially given that one of the benefits of the road usage charge is making clear to users the relationship between user costs and actual road usage.
- **All solve the problem of revenue erosion equally.** Relative to the gas tax, revenue erosion is no longer an issue. However, unless road usage charge rates are indexed to some inflation index, revenue will not keep pace with inflation.
- **All will need a rate-setting rationale.** Rate structure will need to be addressed so that if a flat tax is imposed it captures external costs and can accommodate changes to those costs over time.
- **Administrative costs will be higher than with a gas tax.** An entirely new administrative system will be needed. Costs may change over time as well, especially if other states are involved.
- **All more inconvenient than the gas tax.** All systems will be more inconvenient than the gas tax, because they will require users to pay a new bill or find a way to purchase licenses of some sort. The exception would be a system that is fully integrated with the registration system and does not distinguish by miles.
- **Perception of double taxation.** To avoid a perception of double-taxation, methods for processing gas tax refunds for motorists subject to road usage charges during a potential transition phase will be necessary.

Preliminary Feasibility Evaluation

Time-Based Concepts

Convenience	Privacy	Fairness	Flexibility	Out-of-State Travel	Out-of-State Travelers
Time-Based Concept 1. Time Permit					
<p>☐</p> <ul style="list-style-type: none"> • Frequent need to purchase blocks is an inconvenience to drivers unless there is automatic replenishment. • Since the basis of the charge is time, not miles, there is no need to identify out-of-state travel. 	<p>●</p> <ul style="list-style-type: none"> • Personal travel information not collected or disclosed. 	<p>☐</p> <ul style="list-style-type: none"> • No differentiation between high and low mileage users. • Upfront payments can be done in small amounts, so lower income people can afford them. 	<p>☐</p> <ul style="list-style-type: none"> • Simple system cannot handle charging by location. • However, can be a stepping stone to more advanced systems. 	<p>●</p> <ul style="list-style-type: none"> • Since there is no differentiation between high and low mileage drivers, there is no need to differentiate out-of-state travel. 	<p>☐</p> <ul style="list-style-type: none"> • Can capture out-of-state travelers, like the European vignette system. • Stopping at the border to purchase a time license is a significant departure from U.S. culture. • Could choose to ignore out-of-state travelers.

Advantages	Disadvantages
<p>Proven implementation in Europe (vignette system).</p> <ul style="list-style-type: none"> • Simple system that can be implemented with no advanced technology, if there is no enforcement for out-of-state vehicles. • Potential stepping stone to more advanced approaches. • Privacy, both actual and perceived, is completely mitigated. • Cross border issues can be solved. • Enforcement is relatively simple for in-state vehicles, requiring only seeing a valid sticker (no odometer match needed). • Out-of-state travel not an issue, since miles are not charged. 	<ul style="list-style-type: none"> • Upfront payment inconvenient and needs to be repeated. With an electronic system, however, automatic replenishment is possible. • Cross-border issues though solvable, create a significant departure from current practice.

Preliminary Feasibility Evaluation (continued)

Convenience	Privacy	Fairness	Flexibility	Out-of-State Travel	Out-of-State Travelers
Time-Based Concept 2. Engine Run Time Charge Three technology alternatives: (A) In-vehicle telematics device, (B) Aftermarket device with cellular reporting, (C) Aftermarket device using principal's smartphone					
<ul style="list-style-type: none"> • Convenient for newer model vehicles that have in-vehicle telematics system with location determination capabilities. • Can view charges in real-time. • Can switch between location-based and non-location based technology. • Less convenient for vehicles without in-vehicle telematics system. 	<ul style="list-style-type: none"> • On-board measurement equipment can be <u>perceived</u> as intrusive to privacy. 	<ul style="list-style-type: none"> • Those that use vehicles more pay more. • Time stuck in traffic charged at the same rate as free flow. • Older vehicles need a more cumbersome system. • Greater convenience comes only with a more complex (expensive) system. • Smartphone data plan limitations may mean some users are impacted by data consumption. 	<ul style="list-style-type: none"> • Simple system cannot handle charging by location. • However, can be a stepping stone to more advanced systems. • Allows principals to view charges in real-time. 	<ul style="list-style-type: none"> • Relatively simple systems will not have location detection capability, meaning similar out-of-state issues to the simpler systems. 	<ul style="list-style-type: none"> • Can capture out-of-state travelers, like the European vignette system, but the estimated/reconciliation model would be an extra burden for out-of-state travelers. • Stopping at the border to purchase a mileage license is a significant departure from U.S. culture. • Could choose to ignore out-of-state travelers.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Automates collection of road use data, with a simpler system than collecting mileage data. • More convenient for road users. • Provides more immediate feedback to drivers on amount of driving they do (amount of time their engine is running). • Offers customer choices in technology. • Opportunity to piggyback on existing service providers. • Reflects not only cost of miles, but also environmental costs and costs of congestion (since time spent idling is charged the same as time spent moving)—similar to the gas tax. 	<ul style="list-style-type: none"> • Relationship between payment and benefit received not as close as with mileage. • Upfront equipment and costs for users. • Some vehicles may not have technology capabilities – creates a two-tiered system – those that can afford (or are willing to use) an automated system, and those that don't. • Automated equipment in cars may lead to perception of loss of privacy (though there are ways to handle this). • Will not work the same on hybrid-electric and electric vehicles.

Preliminary Feasibility Evaluation (continued)

Distance-Based Concepts

Convenience	Privacy	Fairness	Flexibility	Out-of-State Travel	Out-of-State Travelers
Distance-Based Concept 3. Mileage Permit					
<p>☐</p> <ul style="list-style-type: none"> • Frequent need to purchase blocks is an inconvenience to drivers. • If allowance is made for out-of-state travel, proof is likely burdensome. 	<p>●</p> <ul style="list-style-type: none"> • Personal travel information not collected or disclosed. 	<p>●</p> <ul style="list-style-type: none"> • All miles treated equally. • Upfront payments can be done in small amounts, so lower income people can afford them. • High mileage drivers pay more., in proportion to their use. 	<p>☐</p> <ul style="list-style-type: none"> • Simple system cannot handle charging by location. • However, can be a stepping stone to more advanced systems. 	<p>☐</p> <ul style="list-style-type: none"> • Systems can be set up to allow out-of-state travel to be exempt. • However, the burden of proof lies with principal. This burden of proof may be difficult to create. 	<p>☐</p> <ul style="list-style-type: none"> • Can capture out-of-state travelers, like the European vignette system. • Stopping at the border to purchase a mileage license is a significant departure from U.S. culture. • Could choose to ignore out-of-state travelers.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Proven implementation in New Zealand. • Simple system that can be implemented with no advanced technology. • Potential stepping stone to more advanced approaches. • Privacy, both actual and perceived, is completely mitigated. • Cross border issues can be mitigated. 	<ul style="list-style-type: none"> • Upfront payment inconvenient and needs to be repeated. • Enforcement is burdensome, requires seeing both the distance license and the odometer. • Cross-border issues though solvable, create a significant departure from current practice. • Out-of-state travel not easily refunded.

Preliminary Feasibility Evaluation (continued)

Convenience	Privacy	Fairness	Flexibility	Out-of-State Travel	Out-of-State Travelers
Distance Concept 4. Estimated Annual Mileage Permit with Reconciliation					
<p>●</p> <ul style="list-style-type: none"> • Estimation, then reconciliation is a concept used in income tax. It takes effort. • Less inconvenient than the prepaid distance blocks, as fewer transactions are potentially needed. • Compared to automated mileage recording systems, probably of equal burden to paying a monthly bill. 	<p>●</p> <ul style="list-style-type: none"> • Personal travel information not collected or disclosed. 	<p>●</p> <ul style="list-style-type: none"> • All miles treated equally. • Upfront payments could be done in smaller installments, so lower income people can afford them. • High mileage drivers pay more in proportion to their use. 	<p>●</p> <ul style="list-style-type: none"> • Simple system cannot handle charging by location. • However, can be a stepping stone to more advanced systems. 	<p>●</p> <ul style="list-style-type: none"> • Systems can be set up to allow out-of-state travel to be exempt. • However, the burden of proof lies with principal. This burden of proof may be difficult to create. 	<p>●</p> <ul style="list-style-type: none"> • Can capture out-of-state travelers, like the European vignette system, but the estimated/reconciliation model would be an extra burden for out-of-state travelers. • Stopping at the border to purchase a mileage license is a significant departure from U.S. culture. • Could choose to ignore out-of-state travelers.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Simple system that can be implemented with no advanced technology. • Privacy, both actual and perceived, are completely mitigated. • Potential stepping stone to more advanced approaches. • Cross border issues can be solved. 	<ul style="list-style-type: none"> • Upfront payment inconvenient, needs to be repeated, and introduces reconciliation process, another step. • Cross-border issues though solvable, create a significant departure from current practice. • Out-of-state travel not easily refunded.

Preliminary Feasibility Evaluation (continued)

Convenience	Privacy	Fairness	Flexibility	Out-of-State Travel	Out-of-State Travelers
Distance Concept 5: Simple Odometer or Other Mileage Reading					
<ul style="list-style-type: none"> • Users will have to fill out a statement and pay a bill, at some periodic basis. Automated equipment can mitigate this. • Audits of travelers will be needed to ensure compliance, which could be an inconvenience. 	<ul style="list-style-type: none"> • On-board measurement equipment can be <u>perceived</u> as intrusive to privacy. • Those that choose to manually report have the same privacy as the fully user-reported systems. 	<ul style="list-style-type: none"> • All miles treated equally. • High mileage drivers pay more, in proportion to their use. • Those willing or able to opt in to an automated system can get have a more convenient system than those who don't. 	<ul style="list-style-type: none"> • Simple system cannot handle charging by location. • However, can be a stepping stone to more advanced systems. 	<ul style="list-style-type: none"> • Relatively simple systems will not have location detection capability, meaning similar out-of-state issues to the simpler systems. 	<ul style="list-style-type: none"> • Can capture out-of-state travelers, like the European vignette system, but the estimated/reconciliation model would be an extra burden for out-of-state travelers. • Stopping at the border to purchase a mileage license is a significant departure from U.S. culture. • Could choose to ignore out-of-state travelers.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Simple system that can be implemented with no advanced technology. • Potential stepping stone to more advanced approaches. • Privacy, both actual and perceived, is completely mitigated. • Cross border issues can be solved. • No need for reconciliation, saves a step. 	<ul style="list-style-type: none"> • Government cash flow – revenue not received until after travel is completed. • Cross-border issues though solvable, create a significant departure from current practice. • Out-of-state travel not easily refunded.

Preliminary Feasibility Evaluation (continued)

Convenience	Privacy	Fairness	Flexibility	Out-of-State Travel	Out-of-State Travelers
Distance Concept 6. Automated Mileage Reporting: Three technology alternatives: (A) OBD-II dongle with cellular modem, (B) OBD-II dongle with Bluetooth to smartphone, (C) Vehicle telematics					
<ul style="list-style-type: none"> • Convenient for those with post-1995 vehicles with an OBD-II port, and smartphones or existing vehicle telematics. • Inconvenient for principal of some older model vehicles and electric vehicles without an OBD-II port. 	<ul style="list-style-type: none"> • On-board measurement equipment can be <u>perceived</u> as intrusive to privacy. • Potential for privacy breach of cellular accounts. 	<ul style="list-style-type: none"> • High mileage drivers pay more, in proportion to their use. • Older vehicles need a more cumbersome system. • Many vehicles will not have in-vehicle telematics system, and some people may not have smartphones necessitating additional equipment or opting for a self-declare alternative that may be more expensive. • Smartphone data plan limitations may mean some users are impacted by data consumption. 	<ul style="list-style-type: none"> • Cannot handle charging by location. • However, can be a stepping stone to more advanced systems. • Offers drivers several options for deployment. 	<ul style="list-style-type: none"> • More complex system than self-declaration, but without general location detection, cannot identify out-of-state travel. • Burden of proof lies with principal. 	<ul style="list-style-type: none"> • Technology requirement means that capturing out-of-state drivers would be nearly impossible. • Mitigated if deployed within neighboring states and/or with multistate interoperability and reconciliation.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Automates collection of road use data. • More convenient for road users. • Provides more immediate feedback to drivers on amount of driving they do and related costs. • Offers customer choices in technology. • Opportunity to piggyback on existing service providers. 	<ul style="list-style-type: none"> • Upfront equipment and costs for some users. • Some vehicles may not have technology capabilities – creates a two-tiered system – those that can afford (or are willing to use) an automated system, and those that don't. • Automated equipment in cars may lead to perception of loss of privacy (though there are ways to handle this).

Preliminary Feasibility Evaluation (continued)

Convenience	Privacy	Fairness	Flexibility	Out-of-State Travel	Out-of-State Travelers
Distance Concept 7. Automated Mileage and General Location Measurement Two technology alternatives: (A) Existing vehicle telematics with GPS, (B) User-provided smartphone + OBD-II backup dongle, (C) Third-party GPS device with cellular modem					
<ul style="list-style-type: none"> • Convenient for newer model vehicles that have in-vehicle telematics system with location determination capabilities. • Can view charges in real-time. • Can switch between location-based and non-location based technology. • Less convenient for vehicles without in-vehicle telematics system with location determination capabilities or vehicles that will require installation of a GPS-based device. 	<ul style="list-style-type: none"> • Location-detection may be perceived as intrusive to privacy. • There are reliable ways to protect privacy of location data. 	<ul style="list-style-type: none"> • High mileage drivers pay more, in proportion to their use. • Good connection between use and benefits received/impacts imposed. • Older vehicles need a more cumbersome system. • Smartphone data plan limitations may mean some users are impacted by data consumption. • Cost of GPS-based equipment and installation by a professional mechanic could impact low-income users. 	<ul style="list-style-type: none"> • Offers several options for deployment • Provides functionality to incorporate social objectives that depend on location (such as time of travel in a congested region). • Allows principals to view charges in real-time. 	<ul style="list-style-type: none"> • Can distinguish out-of-state travel and travel on private lands. 	<ul style="list-style-type: none"> • Technology requirement means that capturing out-of-state drivers would be nearly impossible. • Mitigated if deployed within neighboring states and/or with multistate interoperability and reconciliation.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Adds ability to differentiate miles driven in different locations to address in-state/out-of-state concerns and rudimentary congestion pricing. • Automates collection of road use data. • More convenient for road users. • Provides more immediate feedback to drivers on amount of driving they do and costs. • Offers customer choices in technology. • Opportunity to piggyback on existing service providers. 	<ul style="list-style-type: none"> • Upfront equipment and costs for users. • Some vehicles may not have technology capabilities – creates a two-tiered system – those that can afford (or are willing to use) an automated system, and those that don't. • Automated equipment in cars may lead to perception of loss of privacy, especially with general location component (though there are ways to handle this). • General location component allows for differential pricing by region—something that some populations may not appreciate.

Preliminary Feasibility Evaluation (continued)

Convenience	Privacy	Fairness	Flexibility	Out-of-State Travel	Out-of-State Travelers
Distance Concept 8. Automatic Mileage and Specific Location Measurement Two Technology Alternatives: (A) Existing vehicle telematics with GP, (B) User-provided smartphone + OBD-II backup dongle, (C) Third-party GPS device with cellular modem					
<ul style="list-style-type: none"> • Convenient for newer model vehicles that have in-vehicle telematics system with location determination capabilities. • Can view charges in real-time. • Can switch between location-based and non-location based technology. • Less convenient for vehicles without in-vehicle telematics system with location determination capabilities or vehicles that will require installation of a GPS-based device. 	<ul style="list-style-type: none"> • Specific location-detection may be perceived as intrusive to privacy. • There are reliable ways to protect privacy of location data. 	<ul style="list-style-type: none"> • High mileage drivers pay more, in proportion to their use. • Good connection between use and benefits received/impacts imposed. • Older vehicles need a more cumbersome system. • Smartphone data plan limitations may mean some users are impacted by data consumption. • Cost of GPS-based equipment and installation by a professional mechanic could impact low-income users. 	<ul style="list-style-type: none"> • Offers several options for deployment. • Allows principals to view charges in real-time. • Can stratify rates based on facility, time of day, etc. 	<ul style="list-style-type: none"> • Can distinguish out-of-state travel and travel on private lands. 	<ul style="list-style-type: none"> • Technology requirement means that capturing out-of-state drivers would be nearly impossible. • Mitigated if deployed within neighboring states and/or with multistate interoperability and reconciliation.

Advantages	Disadvantages
<ul style="list-style-type: none"> • Adds ability to differentiate miles driven on specific roads to allow for differential pricing by road or congestion pricing. Also handles in-state/out-of-state concerns and rudimentary congestion pricing. • Automates collection of road use data. • More convenient for road users. • Provides more immediate feedback to drivers on amount of driving they do. • Offers customer choices in technology. • Opportunity to piggyback on existing service providers. 	<ul style="list-style-type: none"> • Upfront equipment and costs for users. • Some vehicles may not have technology capabilities – creates a two-tiered system – those that can afford (or are willing to use) an automated system, and those that don't. • Automated equipment in cars may lead to perception of loss of privacy, especially with general location component (though there are ways to handle this). • Specific location component allows for differential pricing by specific road—something that some populations may not appreciate – potentially even more than general location.

Section 5:

Other Important Considerations

The previous sections described potential road usage charge systems that fulfill Washington State's policy motivations and compare them to the feasibility criteria we developed with the Steering Committee. However, implementing a road usage charge system will involve many other important considerations. We explore the most important of these in this section. These issues do not have to be solved before the January 2013 report to the Legislature, but will need to be addressed in any road usage charge implementation.

Toll Interoperability

In addition to the gasoline tax, drivers in Washington also pay a premium road usage charge—tolls—on certain facilities. The Tacoma Narrows Bridge, SR 520 Bridge, and SR 167 Express Toll Lanes all have tolls with the *Good-to-Go!* system of electronic toll collection.

Depending on the method of collecting a general road usage charge, **it may be possible or desirable to integrate the toll collection system with the road usage charge system.** Such integration would pose several issues:

- The existing (and anticipated) toll systems are at a far smaller scale than anything that would be needed for road usage charging. Simply scaling up the existing toll operations may not be the best approach to developing the systems needed for general road usage charging.
- A road usage charge system that could also be used for tolls on particular roads would need to be capable of distinguishing specific locations. This could add cost and privacy concerns.
- The existing system of charging has two components—the gas tax and toll collection—so continuing with two systems should not be seen as a major impediment.

Data Standards

Whichever way a road usage charge might be implemented, there will be a need for data to migrate from principals (and their vehicles) to organizations that process the data, organizations that generate invoices, and those responsible for collection. These may be some combination of government agencies and private contractors. It will be government's responsibility to set data standards so that all interested parties can work effectively together.

Rate-Setting

Road usage charge rates will need to be set based on the final set of policy objectives as agreed by the Legislature and Governor. Rates can be simple, based solely on:

- Miles driven;
- Time driven; and
- Time licensed to drive (as in the European vignettes).

They can also be more complex, also taking into account factors such as:

- Vehicle configuration;
- Vehicle weight;
- Vehicle engine size;
- Vehicle emissions; and
- Vehicle energy source.

Underlying these metrics would be the evaluation of the amount of the rates themselves. Ideally, rate-setting should be transparent, with oversight and guidance by a working group. A cost allocation model can help to determine the costs imposed by vehicles, and how these costs compare with user payments. The analysis can take into account different factors (e.g., vehicle type, roadway classification, time of day, etc). This analysis can help determine equity-ratios to inform a road usage charge rate.

Legal

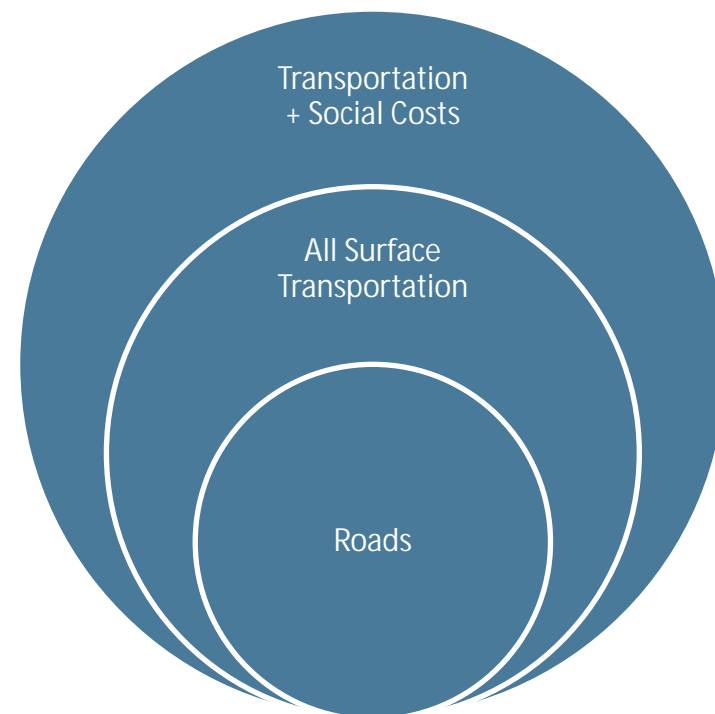
A variety of legal issues would need to be resolved should Washington decide to pursue road usage charges, but do not need to be resolved in this feasibility assessment, such as:

- The instrument for measurement would need to be legally recognized. Odometers, GPS systems, cell phones or other devices may or may not qualify as legal measurement instruments, unless specifically recognized as such.
- There could be issues to resolve with the 18th Amendment, which says that “all fees collected by the State of Washington as license fees for motor vehicles and all excise taxes collected by the State of Washington on the sale, distribution or use of motor vehicle fuel and all other state revenue intended to be used for highway purposes, shall be paid into the state treasury and placed in a special fund to be used exclusively for highway purposes.”
- Commerce Clause of the Constitution may need to be considered should the system evolve into a cooperative multistate road usage charge system.

How to Spend Road Usage Charge Revenue

A road usage charge could be spent on: roads, like the gas tax; all surface transportation; or surface transportation, plus additional amounts to pay for environmental impacts. Whether revenue spending on other surface transportation needs would violate the restrictions of the 18th Amendment is an open question. A further broadening of the use of funds would be to pay for social costs, such as environmental degradation and safety.

Whether a road usage charge replaces or supplements the gas tax and the question of how the revenue is used are important topics, and will have to be addressed at some point. **However, these questions are not critical to the immediate question of feasibility.**



Burden of Proof of Out-of-State Travel

As demonstrated through the preliminary feasibility assessment, **the burden of proof for out-of-state travel lies with the principal. While it is possible to overcome this issue, public acceptance complications are likely.** Some options are:

- The principal is charged on total miles driven regardless of where they are driven. Refunds could potentially be subject to:
 - > An exact mileage reading of the vehicle odometer when exiting and re-entering the state.
 - > Minimum number of receipts verifying proximate location (e.g., hotel receipts, food and beverage receipts). Receipts should match the dates and times of the period from which mileage was reported to have been accrued.
 - > Mileage can be cross-checked using a trusted reference, such as Rand McNally.

Vehicle Identification

The types of vehicles a road usage might apply to will need to be determined. While the road usage charge may eventually apply to all vehicles in the State, making the charge apply to all vehicles at once increases the consequences of any failure in the system. Staging, or phasing in, a road usage charge will have smaller consequences. Depending on the policy objective, some examples vehicles that could be subject to a charge include those that:

- Have fuel economy above a set threshold;
- Are newer than a certain model year;
- Are newer than a certain model year and have fuel economy above a set threshold; and
- Have a certain power train type or types (e.g., electric vehicles and/or plug-in hybrid electric vehicles).

Transition

A “big bang” conversion to road usage charging has never happened. All existing road usage charge programs moved in small, evolutionary steps rather than large, revolutionary leaps.

Potential Department of Licensing Involvement

Regardless of any possible role for the Department of Licensing (DOL) in road usage charging operations, there are several critical areas in which DOL's participation and interfaces would likely be *essential* to the proper functioning of a road usage charge.

- **Licenses and fuel tax collection** including fuel tax refunds (e.g., should payers of a road usage charge be exempt from the gas tax).
- **Central reference point for registered vehicles.** The DOL registry will very likely be the starting point for determining vehicles subject to any charges and for maintaining accurate records of these vehicles over time.
- **Links to dealerships for new and used vehicle sales.** DOL has relationships with vehicle dealers to help car buyers transfer ownership, receive titles, and register vehicles in a timely manner. These dealer relationships could be integral to establishing road usage charge accounts for principals whose vehicles are subject to road usage charges. It is also possible to contract out such support to sub-agencies as point-of-sale channels that can do vehicle licensing, road usage charging, hunting licenses, etc.
- **A "store front" presence** consisting of dozens of offices where customers can conduct DOL business in person. Under any operational concept, for road usage charge customers in need of personal attention, these DOL venues may offer a convenient, low-cost, familiar conduit for delivery of road usage charging customer service.
- It may be desirable for some or all of the operational concepts to be **partly or fully enforced as part of the annual DOL registration tab renewal process.** Successful renewal could be conditional on having an up-to-date road usage charge account. At renewal, an annual road usage charge fee can be assessed. However, odometer check could only be verified if vehicle registration tabs are renewed in person. DOL is advocating online renewal, which would lend itself to self-declaration of odometer readings.
- Depending on the operational concepts pursued, **it may be necessary to obtain verifiable odometer readings,** which are possible through a number of means, including visual inspections. These could be accomplished either by the road usage charge authority or by a third-party, but in either case could utilize the existing network of in-house and outsourced DOL licensing and registration service providers.

Section 6:

Next Steps

Steering Committee Meeting #2

The consultant team will refine the evaluation of the eight concepts presented at Steering Committee meeting #2 (October 2012) through a facilitated discussion with the Committee. The Steering Committee will have an opportunity to share what they like and do not like about the potential operational concepts. We anticipate that this discussion will address:

- Relationship between the policy objectives and potential concepts;
- Feasibility assessment;
- Opportunities to combine concepts that take advantage of the attractive features of each and minimize the negative; and
- Other important considerations that may not need to be addressed now, but will in the future if a road usage charge is determined to be feasible.

Discussions at Steering Committee meeting #2 will serve as the basis for drafting preliminary Steering Committee recommendations. The consultant team will advance the assessment using feedback from the Steering Committee and may even conduct another online survey to clarify or gather input.

Draft Preliminary Feasibility Assessment

During November, the consultant team, with guidance from WSDOT and WSTC, will draft a preliminary Feasibility Assessment Report for distribution prior to the December 4 Steering Committee meeting.