Washington State Road Usage Charge Assessment

Briefing Materials for Discussion at Steering Committee Meeting #7

Document #5
September 6, 2013
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Section 1: Introduction

This report provides briefing materials for the Steering Committee’s seventh meeting in September 2013. It builds on previous work, including some familiar items to help provide context for our current effort – the business case evaluation. This report first presents an overview of the legislative directives that have guided our work to date. Next is a description of the policy framework underpinning a potential road usage charge assessment system as agreed to by the Steering Committee. Section 3 describes in detail the three potential operational concepts for a road usage charge system and how the concepts might be combined, while Section 4 addresses the administrative functions. Section 5 lays out our approach and the model structure that we will employ for the business case evaluation. Finally, we presented our work to the Washington State Transportation Commission (the Commission) in late July and a number of questions were raised at that time. Our response, which has been provided to the Commission, is provided in Section 6.

FY2013 Work Plan and Outcome

The 2012 Regular Session of the 62nd Legislature passed a Supplemental Transportation Budget, providing funding to the Commission “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 were conducted under the guidance of a Steering Committee.

The Steering Committee recommended to the Commission, and the Commission agreed that road usage charging was feasible and that further work was needed to get to the “ready to implement” stage. The Commission provided a report to the Legislature on January 23, 2013 that documented the feasibility analysis and that provided a two-phase, multi-year work plan to get road usage charging to be “ready to implement”. The first phase of the proposed work plan would have evaluated policy issues, explored operational concepts, evaluated the business case, and conducted outreach, with a potential second phase focusing on further detailing operational concepts and preparing for a potential pilot program. The Legislature did not fund the work plan as proposed.

FY2014 Work Plan

The 2013 Regular Session of the 62nd Legislature provided funding for the Commission solely for the development of the business case for the transition to a road usage charge system as the basis for funding the state transportation system, for fiscal year 2014 only. The goal is to provide the business case to the Governor and the transportation committees of the Legislature in time for inclusion in the 2014 supplemental omnibus transportation appropriation act. The Commission was directed to:\(^2\)

\(^1\) Engrossed Substitute House Bill 2190, 62\(^{nd}\) Legislature, 2012 Regular Session.

\(^2\) ESSB 5024 Section 205(3)
• Develop preliminary road usage charge policies that are necessary to develop the business case, as well as supporting research.

• Develop the preferred operational concept(s) that reflect the preliminary policies.

• Evaluate the business case and assess likely financial outcomes.

• Identify and document policy and other issues that are deemed important to further refine the preferred operational concept or concepts and to gain public acceptance. These issues should form the basis for continued work beyond this funding cycle.

The Legislature’s budget of $400,000 to be carried out by December 2013 was considerably scaled back from the $1,600,000 recommended by the Steering Committee and the Commission to be completed by June 2015. Figure 1 provides an overview of the 2012 and 2013 legislative directives and outcomes.

Figure 1: Overview of Legislative Directives

Spring 2012 - Legislature directs:
> Transportation Commission to “assess the feasibility of transitioning from the fuel tax to a road user assessment method”
> Department of Transportation to evaluate “operational feasibility”

• Finding: Road Usage Charging is Feasible
• Commission recommends 2-year work plan to get to “ready to implement”

Spring 2013 - Legislature directs:
> Transportation Commission to evaluate the business case for road usage charging, and report by December 15, 2013
> Department of Transportation to continue operational investigations

• Develop operational concepts
• Develop business case model
• Develop policy research

The current work plan focuses on evaluating the business case for road usage charges in Washington State. Specific work activities are built around the following core tasks shown in Table 1.
### Table 1: June 2013 – February 2014 Work Plan

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Description</th>
<th>Status/Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1 - Develop Road Usage Charge Policy Statements</td>
<td>Develop road usage charge policy statements for use in refining road usage charge concepts in Task 2.</td>
<td>Policy statements were developed at the June 2013 Steering Committee meeting and reported to the Commission in July 2013. Comments from the Commission are provided in this Report.</td>
</tr>
<tr>
<td>Task 2 - Refine Operational Concepts</td>
<td>Develop operational concepts that reflect the policies developed in Task 1.</td>
<td>Proposed operational concepts are detailed in Section 3.0 of this Report, with administrative concepts in Section 4.0. The concepts have been developed in sufficient detail to allow for cost estimates.</td>
</tr>
<tr>
<td>Task 3 - Evaluate the Business Case</td>
<td>Evaluate the value proposition of potential road usage charging systems developed in Task 2 compared to the existing gas tax.</td>
<td>The approach to the business case evaluation is described in Section 5.0. The evaluation itself will be prepared in advance of the Steering Committee's October 14, 2013 meeting.</td>
</tr>
<tr>
<td>Task 4 - Documentation and Budget Preparation</td>
<td>Document the findings resulting from the work conducted in Tasks 1 through 3, culminating in a Final Report from the Commission to the Governor and Legislature, including documenting policy and other issues important to further refine the preferred operational concept(s) and to gain public acceptance; and a workplan and budget for the next year.</td>
<td>To be prepared in advance of the Steering Committee's November 18, 2013 meeting, with the Final Report due to the Governor and Legislature on December 15, 2013.</td>
</tr>
</tbody>
</table>
The meeting schedule for the Steering Committee, the Subcommittees of the Steering Committee, and the Joint Transportation Committee (JTC) where we will present a progress report on this effort is shown in Table 2.

**Table 2: Washington Road Usage Charge Assessment Meeting Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Type</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 12, 2013 (SeaTac)</td>
<td>Steering Committee</td>
<td>More detailed operational concepts and cost estimates.</td>
</tr>
<tr>
<td>September 2013 (dates to be determined) via conference call or web</td>
<td>Steering Committee Subcommittee: Business Case Model Subcommittee</td>
<td>Review business case model and assumptions.</td>
</tr>
<tr>
<td>October 9, 2013 (Tacoma City Hall)</td>
<td>Joint Transportation Committee</td>
<td>Legislatively mandated progress report.</td>
</tr>
<tr>
<td>October 14, 2013 (SeaTac)</td>
<td>Steering Committee</td>
<td>Review business case and policy/other issues.</td>
</tr>
<tr>
<td>November 4-8, 2013 (date to be determined) via conference call or web</td>
<td>Steering Committee Subcommittee: Final Report Subcommittee</td>
<td>Review report work in progress.</td>
</tr>
<tr>
<td>November 18, 2013 (SeaTac)</td>
<td>Steering Committee</td>
<td>Draft report and draft proposed work plan/budget for next year, potentially including a pilot.</td>
</tr>
<tr>
<td>January or February 2014 (dates to be determined) (Olympia)</td>
<td>Transportation Committees of Legislature</td>
<td>Present final report and recommendations.</td>
</tr>
</tbody>
</table>
Section 2: Policy Framework

Steering Committee’s Recommended Policy Framework

At the June 2013 meeting, the Steering Committee developed the following goal, guiding principles, and additional considerations for a road usage charge assessment system.

Recommended Goal

The Steering Committee recommended one goal that answers the question, “why are we doing this?”:

- **Sustainable Revenue Source.** Identify and develop a sustainable, long-term revenue source for Washington State’s transportation system to transition from the current motor fuel tax system.

Recommended Guiding Principles

To support the goal for a road usage charging system, the Steering Committee recommended several guiding principles that provide guidelines on how we would implement the goal:

- **Transparency.** A road usage charge system should provide transparency in how the transportation system is paid for.

- **Complementary policy objectives.** A road usage charge system should, to the extent possible, be aligned with Washington’s energy, environmental, and congestion management goals.

- **Cost-effectiveness.** The administration of a road usage charge system should be cost effective and cost efficient.

- **Equity.** All road users should pay a fair share with a road usage charge.

- **Privacy.** A road usage charge system should respect an individual’s right to privacy.

- **Data Security.** A road usage charge system should meet applicable standards for data security, and access to data should be restricted to authorized people.

- **Simplicity.** A road usage charge system should be simple, convenient, transparent to the user, and compliance should not create an undue burden.

- **Accountability.** A system should have clear assignment of responsibility and oversight, and provide accurate reporting of usage and distribution of revenue collected.

- **Enforcement.** A road usage charge system should be costly to evade and easy to enforce.

- **System Flexibility.** A road usage charge system should be adaptive, open to competing vendors, and able to evolve over time.
• **User Options.** Consumer choice should be considered wherever possible.

• **Interoperability and Cooperation.** A Washington road usage charge system should strive for interoperability with systems in other states, nationally, and internationally, as well as with other systems in Washington. Washington should proactively cooperate and collaborate with other entities that are also investigating road usage charges.

• **Phasing.** Phasing should be considered in the deployment of a road usage charge system.

**Important Considerations**

These are some things that the Steering Committee thinks are important, but were not in a position to incorporate into a principle until the business case work is completed:

• Ability to distinguish between travel on Washington public roads and private roads.

• Ability to charge non-Washington residents. Should a potential system have to be able to collect revenue from out-of-state drivers, since this could add considerably to the cost of operation, but not very much to the revenue.
Section 3: Operational Concepts

Introduction and Purpose

This Section describes three preliminary operational concepts for which we will evaluate a simplified business case. These concepts are a subset of the eight operational possibilities previously presented to the Steering Committee, but are now at a level of detail sufficient for the Steering Committee to get a basic understanding of how each concept would work, and for the study team to prepare cost estimates. We will discuss these details at the September 12, 2013 Steering Committee meeting, and the Steering Committee will have an opportunity to shape these concepts before we undertake the business case evaluation.

The purpose of presenting these operational concepts in this Report is for the Steering Committee to provide feedback to the consultant team that these are appropriate for use in the business case evaluation. These three operational concepts represent a reasonable spectrum of ways that road usage charging might be implemented in Washington State, but they are by no means the entire universe of possibilities. Were road usage charging to be implemented in Washington, there would almost certainly be differences from what is presented here.

The concepts presented here leave room for flexibility and refinement as the policy development process continues. The level of detail supports the business case analysis, but saves detailed engineering and operational design decisions as well as decisions regarding administrative concepts for later, should Washington decide to pursue road usage charging further after the results of the high-level business case are reviewed.

Contents of this Section

This Section explains three potential operational concepts for a road usage charge system—a description of how the system would work at a high level. These descriptions are not a formal Concept of Operations, nor detailed requirements and specifications, but do provide sufficient information for making initial policy choices. Should Washington decide to proceed with further development of road usage charging, the formal systems engineering documents can be developed based on these descriptions.

We refer to the individual responsible for paying the road usage charge as the “Principal,” consistent with prior reports. This term recognizes that the person responsible for paying the road usage charge may not be the vehicle owner (in case of a leased vehicle) or the motorist (in case the motorist is not the vehicle owner or lessor). Because neither motorist nor owner was appropriate, the consulting team used the word “Principal” to refer to the person responsible for paying the road usage charge for the vehicle.
Three Operational Concepts

The following pages present details of three standalone operational concepts:

- **Concept A: Time Permit.** Principals buy a permit for an unlimited number of miles for a given period of time (such as a year, half-year, quarter, or month). It is a relatively simple system that can be easily tied to vehicle registration transactions.

- **Concept B: Odometer Charge.** Principals pre-pay for the amount of miles they expect to drive over a given period (year, half-year, quarter, or month), with the actual number of miles reconciled at the end of the period. This is also relatively simple, in that it involves self-reporting, but accounting for the amount of travel makes it more complex to implement than the time permit (Concept A). This allows the road usage charge to vary with the amount of road usage, but this system does not distinguish miles driven in Washington from those outside of Washington.

- **Concept C: Differentiated Distance Charge.** Concept C involves an in-vehicle device that records miles differentiated by those inside of Washington State and outside. The devices would most likely be provided as complements to other in-vehicle services, such as pay-as-you-drive insurance, navigation, and concierge, and billing would be handled by the companies providing these services. This is the most technically involved of the three concepts.

We describe each of these concepts in more detail in the remainder of this Section, following the two clarifications below. Each description includes an introduction, followed by descriptions of: the operational concept, compliance and enforcement procedures, potential ways to handle out-of-state motorists.

How We Propose to Handle Transitions in the Business Case Evaluation

Any of these proposed operational concepts would involve a potentially substantial effort to transition from the gas tax. Given the schedule and resource constraints of this simplified business case evaluation, and in the interest of keeping the comparisons of alternatives as understandable as possible, we propose to evaluate the alternatives in their “end state,” that is, after transition from the gas tax is complete.

The rationale for this approach is that if there is a business case to be made for a road usage charge concept in its end state, then we can look at the implications of the transition, and how that transition would impact the revenues and costs of the system in the next phase of work. We understand that the transition itself could have substantial costs, but that these costs might be minimized through careful planning. The current effort does not have the time or resources to conduct that planning.

We also recognize that there is a high probability that the gas tax would still remain while one or more of the operational concepts is implemented. Therefore, there are many places in this discussion where we suggest some of the procedures that would be needed to accommodate a dual system.

How We Propose to Handle Out-of-State Vehicles

Washington may or may not decide to charge out-of-state vehicles a road usage charge in lieu of the existing gas tax, but we have outlined the procedures that might be followed to accomplish this goal. An interstate agreement between Washington and other states that might collect a road usage charge could significantly change the approach. We will not assume interstate agreements in our analysis, but such agreements could change the costs and concepts of operations considerably.
Concept A – Time Permit

Introduction to Concept A

The time permit is a type of road usage charge that would allow unlimited use of Washington’s roads for a specified period. Principals would be encouraged to buy a permit that covers a full year (although installment plans would be available), and they would receive a decal with an expiration date. The payment status of each vehicle would also be recorded in a database for easy verification by enforcement officers. Principals with out-of-state vehicles could purchase permits for a week or a month if Washington chooses to charge them.

Operational Concept for Concept A

Experience from the Principal’s perspective:

- Acquisition. Principals would purchase a valid permit for 1 year at the time of vehicle registration through the same methods used today: in person at the Department of Licensing, through a Department agent or subagent, online, or via mail. A time permit could also be issued for a shorter length of time, such as 1, 3, or 6 months, but 1 year would create the lowest administrative costs as it could be synchronized with vehicle registration renewal.

- Usage (driving). Principals drive their vehicles. Valid vehicle tabs indicate payment for the time permit, so enforcement would work just as it does today for registration.

- Paying (refreshing). Principals could pay for the upcoming year’s permit at time of registration renewal. Principals could also pay their permit in installments over the course of the year, for example, paying 25 percent of the cost each quarter.

- Cancelling (selling car, switching). Depending on policy choices, Principals could be allowed to apply for refunds of the unused portion of the permit (fraction of year) upon canceling vehicle registration.

Experience from the agency’s perspective:

- Distribution:
  > New vehicles. Owners of vehicles purchased or leased in Washington State would be given information about the road usage charge at the time of vehicle purchase. The road usage charge purchase would be completed at the time of registration – registration would not be possible without purchase of a road usage charge time permit.
  > Vehicles moving into State. Owners of vehicles moving into Washington State would be given information about the road usage charge at the time of vehicle registration. Registration would not be possible without purchase of a time permit.

- Operation:
  > Monitoring of usage. Vehicle usage would not be monitored.
  > Collection of payments. Payments would be collected by the same means as vehicle registration. Payment by installment plan could be possible: for example, Principals could be sent a bill each
quarter for 25 percent of the cost of the permit. The agency could charge users an additional fee for payment by installment plan, to encourage less frequent transactions.3

- **Cancelling** (car sale, transfer out-of-state):

  > It would be the Principal's responsibility to notify the State that the vehicle is decommissioned. Upon cancellation of registration, the road usage charge permit would be cancelled with it. Principals could apply for refund of unused portion of permit (fraction of year). It is fairly common for people to neglect to cancel their vehicle registrations when they move out-of-state, or sometimes even when they sell a car. However, Principals should be charged for all time that a time permit is valid up until they cancel their registration—they should not be allowed to apply for a refund of any time prior to cancellation, because it would be very difficult to verify that the Principal had indeed left the State, and would thus create a significant potential for fraud. Principals should be clearly informed of this fact when they enroll in the road usage charging program.

- **Accounting:**

  > Verifying that all vehicles are included in system. Vehicles subject to the charge would be unable to register without purchasing a time permit.

  > Verifying that payments are correct. Payments would be verified for accuracy at time of registration payment by agents of the government.

**Compliance and Enforcement for Concept A**

Compliance mechanisms, or mechanisms to deter/discourage attempts at cheating, are fairly straightforward with a time permit: it would be impossible to obtain legitimate vehicle registration tabs or register an eligible vehicle without purchasing a time permit.

Compliance can be encouraged through some combination of the following enforcement mechanisms:

- **Detecting Fraud:**

  > Time permits that are not up to date or for which a Principal has failed to pay an installment payment could be detected via regular database operations.

  > Traffic stops already include checking for valid tabs. For Principals that choose the installment method of paying a road usage charge, enforcement officers would have to take an extra step to make sure their road usage charge payment is up to date. Since officers may not know if a given Principal is on the installment plan, this means that traffic stops would simply involve looking up the license plate number in a database to see if there are any outstanding issues, which is typically done anyway.

  > Automated enforcement could be used to match license plates to valid time permits via license plate camera scanners in police vehicles or roadside mounted cameras. Such a system could provide enforcement for out-of-state vehicles. License plate scanners already exist in many police cars, but roadside mounted cameras with license plate recognition are not used in Washington State. Should

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3 A for-profit business would likely charge customers for spreading their payments out over time (e.g., insurance companies typically offer payment spread out over time at an additional fee to cover their additional processing costs). However, the main reason to allow Principals to spread their payments over time would be to acknowledge that a larger (likely several hundred dollar) up-front payment may be a hardship for some people. Charging people that have difficulty affording the full amount extra is a dilemma that will need to be addressed.
this concept move forward, decisions would be needed regarding the tradeoffs of better compliance and potential concerns about privacy intrusion.

> One enforcement challenge would occur if a road usage charge applied to only one group of vehicles. This could be the case in a transition strategy where, for example, only vehicles with high fuel efficiency are charged by time permit. In this case, enforcement officers would have to determine if a given vehicle is part of the special group, and then assess whether the time permit is up to date and valid.

> Fake tabs could be detected in the same manner as fake tabs are detected for vehicle registration.

- **Grace Tolerance.** Washington State could choose to allow a grace period for a Principal to secure additional time permits. A grace tolerance of 10 or 15 days could be implemented to allow Principals the time to secure additional time of validity to their account and not to be deemed “cheating” the system. The grace tolerance would be especially critical for Principals who procure lower level of time permits, such as monthly or quarterly duration.

- **Issuing Penalties:** Penalties could be issued in the same manner as penalties issued for failure to register a vehicle. Fines/penalties for failure to pay a road usage charge would be in addition to fines/penalties for failure to pay registration. The level of fines or penalties would need to be set later. They could potentially be more stringent than penalties for failure to register a vehicle, since they could involve violations that imply an attempt to defraud the State of a greater sum of money.

**Handling Out-of-State Vehicles for Concept A**

Washington may or may not decide to charge out-of-state vehicles a road usage charge in lieu of the existing gas tax, but if they are charged, the following procedures could be adopted:

- **Distribution** to out-of-state vehicles:

  > Time permits for out-of-state vehicles could be sold at roadside kiosks at border crossings as well as at an agent network of gas stations, convenience stores, post offices and banks, especially in border communities. Principals could also purchase permits online and through smartphone applications. Permits would be either a physical window decal (sticker), a printed unique bar code and/or an electronic registration of the license plate number. Physical permits would be connected to a specific vehicle/license plate combination to enable spot-checking and enforcement.

  > Signs would be erected at the borders to advise of the requirement to purchase a time permit. These signs could also include a telephone number and web address for online purchasing.

  > Several durations of permit could be offered (daily, weekly, monthly, quarterly, semi-annual, or annual), priced to encourage people to get the longest duration that makes sense for them.

- **Operation** (monitoring and collection): Unlike Concepts B and C, monitoring of usage would not be needed since these are infrequent transactions. Collection would occur at the time a road usage charge time permit is purchased.

- **Accounting:** Accounting for a time permit would involve tallying the number, value, and duration of permits purchased, ensuring the total revenues collected from all sales of permits were paid into the State treasury, minus any fees paid to permit distributors.
• **Enforcement** on out-of-state vehicles: via automated enforcement cameras (mounted roadside, in police vehicles), checks by parking officers on foot in cities, via checks during routine traffic stops or at or on toll roads.

**Privacy Considerations Related to Concept A**

In the time permit, privacy is protected by these means:

- The agency does not record any information about the driver or the vehicle beyond what is already recorded for vehicle registration purposes.
- There is no need for spot enforcement and/or inspection of odometers.
- Any screening of vehicles to identify potential violators will only retain records of potential violators, which will be defined much like the existing process for toll violations.

The only potential privacy concern might be the enforcement measures employed for out-of-state vehicles—the use of automated enforcement cameras, checks by parking officers on foot in cities, or via checks during routine traffic stops.

**Concept B – Odometer Charge**

**Introduction to Concept B**

With an odometer charge a State agency would charge per-mile fees based on readings of the vehicle’s odometer—a simple system in which the user self-reports mileage traveled, but is subject to random checks. Several other approaches are also plausible, and are discussed later in this Section. The concept described here assumes pre-payment for an estimated year’s worth of driving by the Principal. The consultant team chose this option because it will cause minimum cash flow disruption when compared with the gas tax. However, post-payment is also possible. This and other options are mentioned at the end of this Section.

**Operational Concept for Concept B**

Principals would experience the odometer charge concept as follows:

- **Acquiring**: Principals would prepay for estimated road usage for a year based on an estimate or a standard amount (e.g., 12,000 miles). Their payment for the year would be entered in a road usage charging database that would link to their license plate number. The system might also benefit from having a sticker indicating that they had paid their estimated charges. Principals could pay for all miles at once, or Principals could choose to pay in installments (e.g., monthly or quarterly) to avoid the need for large individual payments, in which case they could receive a sticker that indicates this choice, and could be potentially subject to additional compliance/enforcement methods.

- **Usage (driving)**: Valid vehicle tabs and/or a sticker indicate payment for an estimated year’s worth of miles. No action is needed by the Principal during driving.

- **Paying (refreshing):**
The Principal would self-report miles at time of vehicle registration renewal. (Annual reporting is the option that will be modeled, but periodic reporting is also possible.) The Principal would be subject to random selection to present their vehicle odometer for inspection. The Principal would reconcile their charges based on the actual amount of driving – more miles would result in a payment due, and lower miles would result in a refund or application of funds to next year’s estimated amount.

If at the end of the year a Principal has driven a substantially greater number of miles than he/she estimated for the year, that Principal may be compelled to pay a penalty. However, in case the Principal underestimates the mileage he/she will drive in a given year, and the Principal realizes this fact long before the end of the year, the State could make it possible for the Principal to buy additional miles. In this case, the State might require Principals to buy a minimum number of miles (e.g. 2,000). Repeated underestimation and additional purchases could result in Principals being charged an additional fee.

Principals who choose the installment plan would pay their installment at an authorized location or online.

- **Cancelling** (selling car, moving out-of-state): Principals would remove the vehicle from the road usage charge program at the time of selling a vehicle or moving out-of-state. Principals could apply for refund of unused portion of the odometer charge (number of miles) at time of canceling vehicle registration.

The experience from the agency’s perspective would be as follows:

- **Distribution:**
  - **New vehicles.** Owners of vehicles purchased or leased in Washington State would be given information about the road usage charge at the time of vehicle purchase and the road usage charge purchase would be completed at time of registration. Registration would not be possible without the purchase of a mileage permit. An official “start” odometer reading would be required for new vehicles, and for newly acquired used vehicles. The starting odometer reading should not be self-reported — an officer should verify them.
  - **Vehicles moving into State.** Owners of vehicles moving into Washington State would be given information about the road usage charge at the time of vehicle registration. Registration would not be possible without purchase of road usage charge mileage permit. The official start odometer reading should not be self-reported—it should be verified by an officer.

- **Operation:**
  - **Monitoring of usage.** Usage would be monitored through annual self-reports, annual checks where an officer is present (not necessarily required for all vehicles), and possible spot-checks. (Annual reporting is the option that will be modeled, but periodic reporting is also possible.)
  - **Collection of payments.** In Concept B as described, payment would occur at annual reconciliation, which would typically be the time of vehicle registration renewal. At that time, unused miles would be credited towards the charge for the next year, and payment for any additional miles driven in the previous year (miles driven in addition to the estimate) would be required. Payment would typically be for a year in advance, but installment plans would also be offered, potentially for an administrative fee.\(^4\)

\(^4\) As with the time permit, the issue of whether to charge for allowing installment payments is an important decision.
• **Cancelling** (car sale, moving out-of-state): It would be the Principal’s responsibility to notify the State that the vehicle is decommissioned, at which time the road usage charge permit would also be canceled. Principals could apply for a refund of unused miles at that time.

• **Accounting:**
  > Verifying that all vehicles are included in system. During a transition period, or with a system that has multiple road usage charge options, the accounting function would have to determine whether a particular vehicle had to pay the odometer charge. Vehicles subject to road usage charges would be unable to register without purchasing road usage charge miles.
  > Verifying that payments are correct. The odometer reconciliation process would be employed to ensure payments are correct, and spot checks of some vehicles that are self-reporting will be employed.

**Alternative Approaches to Odometer Reading**

For purposes of the business case evaluation, we chose one operational approach for odometer reading – self-reported mileage with spot-checks for a substantial number of vehicles. Other approaches are possible, but the Legislature did not allocate sufficient funds for a complete examination of all of these. Alternative approaches include the following:

• **Mandatory annual inspection of the odometer.** This concept would be similar to the concept described in detail above, but eliminates self-reporting—all vehicle odometers would be required to be inspected by an authorized agent each year. This could involve Principals bringing their cars to a government facility to have their mileage read, or outsourcing this work to private facilities (e.g., gas stations or mechanics). In jurisdictions that require safety or environmental inspections, such odometer readings are already being done, so this approach would be relatively easy to accomplish, but Washington does not have such inspections Statewide.

• **Purchase of mileage blocks** in increments of miles (e.g., 1,000 miles, 3,000 miles, 5,000 miles, 10,000 miles, etc.). In this case the Principal pre-purchases the miles in the mileage blocks. A grace tolerance safety margin, for example 500 miles, can be considered. Each time the Principal purchases a mileage block, he/she provides the odometer reading (by Internet, smartphone application, or regular touch-tone phone to an automated number). Periodically, an authorized agent might check the vehicle odometer to ensure the vehicle is compliant with the system.

• **Pay-at-the-Pump** could be a way to pay for mileage at the time of refill or recharge (for electric vehicles). Under this option, the Principal would pay periodically when refilling or recharging the vehicle. Mileage could be self-reported by keypad at a gas pump, or authorized agents at gas stations could verify odometer readings. In a self-reported system, vehicles should occasionally be subject to spot checks.

• **A basic on-board mileage recording device** could record, store and communicate the mileage to the agency with annual or periodic inspection of the odometer. This is a simplified version of Concept C. We chose to keep Concept B as simple as possible, so did not evaluate this approach.

Based on discussion with and feedback from the Steering Committee, we can adapt the precise odometer reading concept we use for modeling the business case.
Compliance and Enforcement for Concept B

- **Compliance** (mechanisms to deter/discourage attempts at cheating): It would impossible to obtain legitimate vehicle registration tabs or register a road usage charge-eligible vehicle without paying the road usage charge. Annual odometer reporting would be obtained through self-reporting, as with Federal income taxes, and compliance encouraged through spot enforcement – also as with Federal income taxes – although spot enforcement may only be needed in cases where suspicious circumstances exist, but could occur for a random subset of vehicles.

- **Enforcement:**
  > **Detecting Fraud.** Odometer fraud (setting the odometer to a false value) is possible, even with many modern vehicles with digital odometers. Spot enforcement (checks by police while issuing other traffic stops) would be possible. Cross-referencing current odometer values with odometer values for that vehicle from other sources (e.g., CARFAX reports, records of vehicle repair shop manifests and records) could be another means of detecting fraud. Large deviations from predicted mileage either on a yearly average or dividing that yearly average over quarterly statistical metrics would also be indicators of potential fraud, and could trigger audit requests.

  > **Issuing penalties.** Penalties for failure to pay the road usage charge would be issued at the same time as failing to register, but would be in addition to registration violations. Odometer tampering is already illegal, and penalties for odometer tampering already exist at the Federal level (in the Odometer Act). Further penalties should be considered as it relates to road usage charge avoidance, and odometer laws should be reviewed to verify that they are sufficient.

- **Grace Tolerance** Washington could choose to allow a grace period for a Principal to secure additional mileage permits. A grace tolerance of 500 miles could be implemented to allow Principals the time to secure additional mileage to their account and not to be deemed “cheating” the system.

Handling Out-of-State Vehicles for Concept B

There are two potential approaches to handling out-of-state vehicles:

2. Let out-of-state vehicles travel without charge. If the gas tax is not phased out, out-of-state vehicles continue to pay the gas tax.

Privacy Considerations Related to Concept B

The odometer charge concept requires:

- The State to record how many miles vehicles are driving each year—a data point not previously recorded.

- Principals to be subject to planned and/or random odometer spot checks.

The odometer charge concept does not involve any measuring or recording of vehicle location data, and most implementation options do not involve in-vehicle hardware.
**Concept C – Differentiated Distance Charge**

*Introduction to Concept C*

With a differentiated distance charge, miles driven within Washington State would be charged, while miles driven outside of the State would not. Concept C would require advanced location sensing, an on-board unit with memory for storage of data and communications technology that can distinguish whether miles driven are inside or outside of Washington. This usage data can be handled securely. However, the perception of data security and privacy issues may remain a concern for some. Ideally, Concept C would involve integration with other in-vehicle technology related to location, such as Toyota’s Entune telematics system or pay-as-you-drive insurance. In this way, the cost of implementation might be kept low, and government does not have to create, manage, and update rapidly changing technology offerings. Over time, it might be possible (though not necessarily assured) that such systems could be available at no charge to the State. Concept C would also involve data handling, accounting, and auditing that is more complex than Concepts A or B.

We do not propose that Concept C be the exclusive method for collection of road usage charge for the following reasons:

- It is not possible to install an on-board unit on vehicles without an OBD-II port. Vehicles manufactured before 1996 typically did not have these ports and some electric vehicles do not have these ports.
- Some Principals will object to a solution that uses vehicle location data in any way.
- Some Principals may not be accepted by certified service providers because of credit history or other issues, which would require the State to become the “provider of last resort” and be responsible for taking on Principals with a high risk of defaulting on their payments. The State may prefer to handle such individuals with concepts A or B above.

Concept C as described below involves Principals being invoiced for their mileage on a regular (monthly or quarterly) basis. But it could also, optionally, include pay-at-the-pump service in addition to or instead of monthly invoicing.

Concept C would involve account management services being provided by private sector certified service providers. Certified service providers are private companies who collect taxes on behalf of the government. Certified service providers have the opportunity to sell taxpayers additional services and may be able to retain a fee for collection of taxes. Certified service providers typically have technology expertise not currently available in government run agencies. A government-mandated system of certified service providers is employed to collect road usage charges or tolls in New Zealand, Ireland, and Portugal, and is used in other industries in the U.S. and abroad. In the U.S., one example of the use of certified service providers is in online sales tax collection. Such providers provide software (or software as a service) to online retailers who need help collecting and remitting the right amount of sales tax based on the state and locality where a customer lives. These providers are certified by the Streamlined Sales Tax Governing Board, an association of 44 states and the District of Columbia. One major sales tax Certified Service Provider is Avalara, located on Bainbridge Island in Washington State.

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5 OBD-II ports are on-board diagnostic ports—electronic ports usually under the dashboard of vehicles that allow mechanics to read trouble codes.
We assumed that certified service providers would handle account management services (rather than a government agency), because our analysis shows that they could potentially provide lower system costs at a large scale (over a million users). Certified service providers can be active in multiple states and can offer value-added services to Principals in order to make a profit on their other products, resulting in economies of scale. Certified service providers are an alternative to a direct procurement of private industry services by a government agency that typically results in lower costs over a sufficiently long time period.

Concept C could also, optionally, involve a public agency providing these services instead of or in addition to private certified service providers, but the concept presented here assumes certified service providers for purposes of the business case evaluation.

**Operational Concept for Concept C**

The experience of a differentiated distance charge from the Principal’s perspective would be as follows:

- **Acquiring**:
  - The Principal would register with the responsible government agency or a certified service provider who would be essentially a private account manager that agrees to collect road usage charges from the Principal, possibly in addition to a range of other value-added services such as parking, insurance, or concierge services. The system would support multiple certified service providers that compete for Principals’ business.
  - The Principal would acquire an on-board unit—a small electronic device that mounts in a vehicle and measures the miles driven by zone—with the zones being in-state and out-of-state. The on-board unit may be provided by certified service provider or may be acquired independently. Instead of acquiring a separate electronic device, the on-board unit could also be an application that runs on the Principal’s in-vehicle telematics device.
  - Certified service providers would notify the State’s Road Usage Charge Authority of all vehicles registered with them, so the Road Usage Charge Authority can verify all vehicles subject to the road usage charge are registered.

- **Usage (driving)**:
  - The Principal would drive and the on-board unit would measure distance driven, differentiating travel in priced and non-priced zones. For purposes of our analysis we have assumed two zones—with Washington State and outside—but it is also possible to distinguish between other zones, for example, between travel on public roads, private roads, and off-road. It would use electronic location data (GPS) to determine what zone the vehicle is in, and sum up miles travelled in each zone. To protect privacy, the onboard unit software should be specified to never record coordinates of where the vehicle is located at any time. The on-board unit could also measure fuel consumed and/or fuel added to the vehicle to compute fuel tax credit if this is necessary during a transition period.
  - The Principal would be free to change certified service providers.

- **Paying (refreshing)**:
  - The certified service providers would periodically (monthly or quarterly) invoice customers for whatever services it provides (e.g., insurance, navigation) in addition to the road usage charges, and would process payments.
> Principals would be provided credits for fuel taxes paid, if gas taxes remain during a transition period. If gas stations are equipped with payment equipment (and possibly act as certified service providers), payment and refunds would be possible there as well.

> Periodically, the certified service providers would remit the amounts due from their customers to the Road Usage Charge Authority.

> Certified service providers would be responsible for collecting the funds due to government. This is a risk that certified service providers agree to take when they sign up for the program. Certified service providers would guarantee the revenues to the Authority. If they could not collect funds, they would assume the loss. This will reduce costs of collection for the State. The Authority retains the right to audit both service providers and individual accounts.

• **Cancelling** (selling car, moving out-of-state):

> The Principal would inform the certified service provider of account closure. The certified service provider would offer the Principal the opportunity to de-register the vehicle and inform the Road Usage Charge Authority. However, the Principal could also carry out de-registration directly with the Road Usage Charge Authority.

> The Principal would still solely be responsible for de-registering the vehicle from the road usage charging system. If the Principal de-registers from certified service provider but not from vehicle registry, the Principal would still be responsible for miles travelled until the vehicle is de-registered.

The agency's perspective on operations for the differentiated distance charge would be as described below.

• **Distribution:**

> New vehicles:

  – Principals would be informed of certified service provider options (and possibly separate on-board unit options) at the time of vehicle purchase by vehicle sales representatives. Principals would obtain on-board units from the certified service provider or, possibly, from a retailer.

  – Principals would be allowed to drive the vehicle away without certified service provider registration and/or on-board unit purchase; the Principal would be informed that certified service provider registration must be completed within a certain number of days or Principal will face penalty (or be converted to alternate system such as time permit or mileage permit if available).

  – The vehicle sales representatives would inform the Road Usage Charge Authority when a vehicle was sold.

> Owners of vehicles moving into Washington State would be given information about the road usage charge at the time of vehicle registration. The official “start” odometer would be required by the State (start odometer reading should not be self-reported—it must be verified by an officer). Registration with a certified service provider would need to be completed within a certain number of days or the Principal would face a penalty (or be converted to alternate system such as time permit or mileage permit if available).

• **Operation:**

> The certified service provider would send usage data in monthly reports to the Road Usage Charge Authority for accounting purposes.
> The certified service provider would be responsible for collecting payments from the Principal and transferring them to the State. The certified service provider would be responsible for paying the Road Usage Charge Authority for all miles traveled, even if the Principal does not pay the certified service provider.

- **Cancelling** (car sale, transfer out-of-state):
  > The Principal would inform the certified service provider of account closure. The certified service provider would offer the Principal the opportunity to de-register the vehicle and inform the State of vehicle deletion from the road usage charge eligible list, but cannot compel the Principal to accept.
  > The Principal would still solely be responsible for de-registering the vehicle. If the Principal de-registers from the certified service provider, but not from the vehicle registry, the Principal would still be responsible for miles travelled until vehicle is de-registered.

- **Accounting**:
  > Verifying that all vehicles are included in system. Certified service providers would periodically (weekly or monthly) send reports to the State that list all vehicles that are registered with them. The on-board units would transmit vehicle identification numbers to the certified service provider to make this report easy to compile. These reports would highlight vehicles newly registered with the certified service provider, and also include a list of vehicles that have de-registered with the certified service provider in that time period. Government road usage charge accounting would maintain a list of all vehicles that should be registered with the road usage charge, and cross-reference this list with the reports from the certified service providers.
  > Verifying that payments are correct. Certified service providers would periodically send reports to the agency listing aggregate mileage by zone by month for each vehicle, as well as aggregate miles by zone, and total road usage charges owed by zone (precise mileage by zone by day would not be listed, except in cases that the Road Usage Charge Authority suspects fraud and makes a specific audit request on given vehicle).
  > Certification. Each certified service provider would be subject to initial certification, periodic focused audits, and periodic recertification. Each on-board unit would be subject to certification and would include anti-tampering measures including transmitting records of whenever it is disconnected.

**Compliance and Enforcement Related to Concept C**

- **Compliance** (mechanisms to deter/discourage attempts at cheating): Each on-board unit would include significant fraud detection measures (listed immediately below under detecting fraud) that encourage compliance.

- **Enforcement**:
  > Detecting fraud by Principals. Each on-board unit would include anti-tampering measures including transmitting records of whenever it is disconnected, cross-referencing vehicle speed and odometer data with GPS data, measures to determine when the on-board unit has been opened, security measures to determine if the on-board unit has been hacked, and security measures to ensure only legitimate communications with the government/certified service provider. The Road Usage Charge Authority could demand detailed records of individuals in cases of suspected fraud. A certified service
provider would be motivated to ensure compliance because it would still owe government for miles travelled even if the Principal does not pay.

> Detecting fraud by certified service providers. Certified service providers would be subject to initial certification, periodic recertification, monthly reporting, and periodic focused auditing to ensure that any attempt at fraud would be detected. Certified service providers could be issued a grade (green, yellow, or red) based on their past performance, and the level of scrutiny given to certified service providers could be a function of their grade.

> Issuing penalties:
  - Individuals could be subject to penalties by certified service providers and/or penalties by the State. Certified service providers may issue penalties for late payment if legally empowered to handle such penalties. Alternatively, a certified service provider may not be empowered, but the terms of their agreement with the State would prescribe a process for them to identify any Principal who is suspected of a penalty to the State with supporting information. A further method is for certified service providers to handle penalties by terminating the Principal’s service agreement and transferring the account to the State for handling. The State may issue penalties for attempts to defraud or noncompliance. The legislative mandate should list the specific penalties and their value and the method of appeal or resolution.
  - Certified service providers would be subject to certification being revoked and financial penalties in case of fraud.
  - Since mileage would be automatically read, there is no need for a grace tolerance in the differentiated distance concept.

Handling Out-of-State Vehicles with Concept C

Asking out-of-state motorists to put road usage charge equipment in their cars is unlikely to be acceptable. There are three potential approaches to handling out-of-state vehicles:

1. Charge out-of-state vehicles using another concept such as Concept A – a time permit;
2. Out-of-state vehicles continue to pay gas tax; and

The first approach is evaluated later in this Section where we evaluate combination approaches. For purposes of this evaluation, we have assumed approach 2 – letting out-of-state vehicles travel and pay for use through continued gas tax collections. Also, if several states implement a road usage charge like Concept C, reciprocal agreements could be developed, but we will not assume such agreements for this business case evaluation.

Privacy Considerations for Concept C

Experience from studies and demonstrations in other places has indicated that the differentiated distance charge is likely to be perceived as an invasion of personal privacy by some people. The mitigation for this concern would be to allow Principals to opt for a concept that does not measure location at all.
For those who do choose this option, a strict privacy policy should be enacted, which would describe what data should be stored, how the data should be secured, and for how long specific transaction data can be archived.

**Combinations of Operational Concepts**

The following pages describe the rationale for using each possible combination of operational concepts, as well as the advantages and disadvantages of the various combinations of operational concepts.

**Combination 1: Time Permit (A) + Odometer Charge (B)**

**Rationale.** The time permit is simple and non-invasive. The odometer charge would appeal to those who drive less and don’t want to pay the relatively high flat fee of the time permit.

**Implications:**
- A database would need to list all Principals enrolled in the system, and enforcement officers would need to be able to quickly determine whether a Principal was using a time permit or an odometer charge.
- Both charges could be paid/renewed at the same time as a vehicle license fee, as they are both based on annual payments.
- Accounting for both concepts could be accomplished in a similar manner. The account record for vehicles on the odometer charge would simply have additional fields for odometer readings.
- Only Principals using the odometer charge would be subject to random spot checks of mileage, as those on the time permit would be allowed unlimited mileage.
- In order to discourage large numbers of Principals from taking advantage of the unlimited nature of the time permit (and potentially driving more than is currently experienced under the gas tax), the time permit would need to be based on a relatively high number of miles per year (e.g., 30,000).

**Combination 2: Odometer Charge (B) + Differentiated Distance Charge (C)**

**Rationale.** The odometer charge would be proportional to usage, while the differentiated distance charge is a technology option that is proportional to usage and allows distinguishing in-state versus out-of-state miles.

**Implications:**
- A database would need to list all Principals enrolled in the system, and enforcement officers would need to be able to quickly determine whether a Principal was using an odometer charge or differentiated distance charge.
- Odometer charges could be paid/renewed at the same time as a vehicle license fee. Principals using Concept C would simply pay their invoice from the certified service provider and pay nothing extra at the time of registration renewal.
- Accounting for the two concepts would be very different. From the government’s side, there will be a need to make sure everyone is registered under one of the two systems, and also to make sure the
certified service providers' systems are compliant with standards. The certified service providers would also have to maintain a database of records to generate the invoices to their customers.

- Individuals who are unable to register with a certified service provider (e.g., because of bad credit history) would have Concept B as a fallback.
- Spot checks could be used for enforcement for all Principals, though spot checks would be different for those on Concept B and those on Concept C.

**Combination 3: Time Permit (A) + Differentiated Distance Charge (C)**

**Rationale:** The time permit would be offered for those who are opposed to the technology or who wish to just pay one lump sum fee per year.

**Implications:**

- A database would need to list all Principals enrolled in the system, and enforcement officers would need to be able to quickly determine whether a Principal was using a time permit or a Differentiated Distance charge.
- The time permit could be paid/renewed at the same time as a vehicle license fee, but Principals using Concept C would pay their invoice from the certified service provider and pay nothing extra at the time of registration renewal.
- Accounting for the two concepts would be very different. From the government's side, there will be a need to make sure everyone is registered under one of the two systems, and also to make sure the certified service providers' systems are compliant with standards. The certified service providers would also have to maintain a database of records to generate the invoices to their customers.
- Individuals who are unable to register with a certified service provider would have the Concept A time permit as a fallback option.
- Only Principals using the differentiated charge would be subject to random spot checks, as those on the time permit would be allowed unlimited mileage.
- In order to discourage large numbers of Principals from taking advantage of the unlimited nature of the time permit (and potentially driving more than is currently experienced under the gas tax), the time permit would need to be based on a relatively high number of miles per year.

**Combination 4: Time Permit (A) + Odometer charge (B) + Differentiated Distance Charge (C)**

**Rationale:** Offering all three concepts provides the most user choice, and covers everyone.

**Implications:**

- Offering all three concept options would likely be the most complex system operationally, but would provide the greatest user choice.
• A database would need to list all Principals enrolled in the system, and enforcement officers would need to be able to quickly determine which concept a Principal was using.

• Time permits and odometer charges could both be paid/renewed at the same time as a vehicle license fee, as they are both based on annual payments (assuming they are annual payments), but Principals using Concept C would pay their invoice from the certified service provider and pay nothing extra at the time of registration renewal.

• From the government's side, there will be a need to make sure everyone is registered under one of the three systems, and also to make sure the certified service providers' systems under Concept C are compliant with standards. The certified service providers would also have to maintain a database of records to generate the invoices to their customers.

• Individuals who are unable to register with a certified service provider would have two fallback options: Concepts A and B.

• Spot checks could be used, but Principals using the time permit would not be subject to spot checks because they are allowed unlimited mileage.

• In order to discourage large numbers of Principals from taking advantage of the unlimited nature of the time permit (and potentially driving more than is currently experienced under the gas tax), the time permit would need to be based on a relatively high number of miles per year.
Section 4:
Administrative Considerations

Introduction and Purpose

The purpose of this chapter is to identify the administrative functions for road usage charging, and the opportunities for carrying them out within or across several existing Washington State agencies. Implementation of road usage charging will require engagement with these agencies, regardless of which operational concept or concepts are selected for further study and detailed design. We are not making specific recommendations regarding which agency or agencies should be responsible for road usage charging in Washington, should it be implemented. Rather, we used this research to provide a basis from which to estimate the costs of road usage charging.

To undertake this analysis, the project team began by describing four categories comprising 38 administrative functions and processes that cut across all three operational concepts. Next, the team identified several agencies that may play a significant role in road usage charge implementation: the Departments of Revenue (DOR), Licensing (DOL), and Transportation (WSDOT). Finally, the team conducted a series of interviews with staff across the three departments in order to assess capabilities and fit for executing the various functions and processes.

We also consider the notion of private involvement via certified service providers in this Section. Certified service providers are private entities that support some of the functions required to collect a road usage charge. Road usage charging need not rely on such entities—there are several scenarios by which one or more agencies of Washington State government can implement and operate road usage charging as a fully public system. Even in the case that the state allows some degree of involvement of certified service providers, it is important to note that the state has a major role to play as the ultimate owner of both the road usage charge policy and its implementation and operation.

In this Section, we present the four functional categories and 38 administrative functions associated with road usage charge collection, followed by a description of initial comments regarding each of the three departments (DOR, DOL, and WSDOT), brief descriptions of other departments, description of the optional range of roles possible for certified service providers, and finally summary considerations.

Four Functional Categories and 38 Administrative Functions

The project team identified four functional categories comprising 38 administrative functions and processes for executing a road usage charge program (see Figure 2):

- **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**, covering 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.

Each of these four categories comprises several functions and processes. To facilitate cross-referencing, the functional categories are presented with their respective administrative functions (rectangles) and processes (arrows), numbered 1 through 38 in Figure 2.

The range of possibilities is broad, and depending on the type of concept pursued, spans the following:

- A system fully operated by state agencies.
- A system operated by state agencies with outsourcing of some specific functions, each to a single vendor contracted by the state, and other functions operated in house.
- A system with multiple outsourced functions, all operated by a single outsourced vendor contracted and overseen by the state, and other functions operated in house.
- A system overseen by the state in which multiple vendors compete with one another for contracts with taxpayers to operate functions in categories 1 and 2. The State, meanwhile, retains responsibility for all functions in categories 3 and 4.

In each case the state would retain a role of, at minimum, oversight and management functions of the fourth category (Road Usage Charge Authority). The heading entitled, “Account Management by Certified Service Providers” further elaborates on the optional certified service provider model.

Appendix A includes a more detailed description of each of the four functional categories comprising the 38 functions and processes, numbered and organized by category 1 through 38.
Assessment of Existing State Agencies

Below is our team’s assessment of the ways different agencies could take on some of the functions needed to carry out a road usage charge.

**Department of Licensing**

**Agency Description.** The DOL handles a wide range of functions including driver licensing, vehicle and vessel registration, fuel tax collection, business and professional licensing, and other services. For purposes of road usage charging, our analysis focuses on vehicle registration.

DOL oversees vehicle registration through a network of county auditor offices and subagents appointed by the county auditors. Both the county auditors and the subagents can conduct a range of DOL-related transactions for customers on a fee-for-service basis, including vehicle tab (registration) renewal and titling. Because the road usage charge operational concepts focus on vehicle owners and lessees (Principals), the most logical existing DOL process to consider is vehicle registration.
Vehicle registration renewal occurs annually. Customers have several choices for completing their vehicle registration or renewal as follows:

- **Online.** Through the DOL website, customers can renew their tabs annually with no requirement to visit a DOL, county auditor, or subagent location in person. Vehicle renewals can be conducted online indefinitely. Currently about 30% of renewal transactions are performed online.

- **County auditors (referred to as agents).** Each county auditor’s office serves as a vehicle licensing agent on behalf of DOL. Customers can conduct transactions for vehicle registrations and renewals for a filing fee of $3.00. Transactions involving a title are $4.00. These fees are in addition to the actual cost of registration and titling, which varies depending on the type of vehicle and location of the customer’s residence.

- **Subagents.** Customers can renew vehicle registration through a network of subagents for a fee of $5.00. If a title is involved, the transaction fee is $12.00. These fees are in addition to the actual cost of registration and titling, which varies depending on the type of vehicle and location of the customer’s residence.

- **Mail.** Customers can renew vehicle registration through the mail for the cost of a postage stamp.

The management of vehicle records is an ongoing challenge for DOL. The vehicle records system has two primary components:

- The “**back end**” is a COBOL program with SQL known as the Vehicle Headquarters System. The database includes 480 fields for each vehicle record, with free-form entry, but no field for miles per gallon for each vehicle. The database currently contains between 7 and 8 million vehicle records.

- The “**front end**” is a graphical user interface known as the Vehicle Field System. Agents, subagents, and some DOL headquarters staff have restricted access to the Vehicle Field System for purposes of accessing records in the database, calculating fees, processing vehicle-related transactions (registration and titling), and updating records. The Information Systems Division of DOL updates the Vehicle Field System monthly in response to numerous requests for information from internal and external stakeholders as well as to accommodate new features.

Both system components are labor intensive and costly to operate. DOL is in the beginning stages of a large-scale modernization to the vehicle records system that will likely take between 5 and 10 years to complete. Thus far, DOL has not developed objectives or requirements, but DOL has made clear its belief that the modernization effort should provide a flexible information technology platform on which the agency could accommodate the numerous policy requests it currently receives as well as future unforeseen policy requirements, potentially including but not limited to road usage charging.

**Analysis of road usage charge capabilities.** Because the vehicle registration process occurs annually, it is conceivably possible to integrate some of the road usage charge operational concepts with it. Otherwise, DOL would need to build separate processes to accommodate road usage charging.

**Concept A (time permit):**

- Perhaps the most straightforward implementation of a time permit would be to include the charge at the time of vehicle registration renewal (referred to as tab renewal). DOL would process an additional charge...
at the time of tab renewal to reflect the time permit. DOL already processes a variety of fees at the time of registration on behalf of the state and local jurisdictions.

- DOL does not have periodic billing capability, an important part of Concept A.
- Should it apply to out-of-state vehicles, DOL does not have the capability to collect fees from out-of-state drivers.
- If DOL maintained accounts, then from the customer’s perspective, DOL would be a one-stop-shop for driver licensing, registration, and road usage charges.

Concept B (odometer reading):

- Odometer reading could be included as part of tab renewal process, whether read by an officer or self-reported. DOL would calculate the charges owed based on the current reading and previous readings. DOL agents and subagents could also serve among the verified odometer readers for enforcement or audit purposes.
- For customers, this would integrate easily with the existing tab renewal process. However, there are some customer issues to resolve from DOL’s perspective:
  > For some customers who do not have vehicles in their possession (e.g., parents of students, military spouses, and fleet vehicles stored at employees’ residences), odometer reporting would be an added inconvenience.
  > There would be additional workload at DOL for reconciling odometer disclosure errors. On title transactions, customers often misplace the decimal and report tenths of a mile as ones. In these cases, DOL staff must conduct research, collect documentation, and fix the records.
- Transactions are relatively straightforward to calculate, and compliance can be audited using business rules about expected annual mileage to flag for underreporting. However, there are limitations to this approach:
  > To calculate the fees for the registration renewal notice, customers would have to report the odometer reading at least three months in advance of the vehicle registration expiration.
  > If mileage were not reported, DOL would be unable to report fees due on the renewal notice. In that case, customers would have two options: (1) either report odometer online, which would require DOL to build a feature allowing mileage to be reported and fees calculated as part of the online renewal process, or (2) customers would have to renew in person and report the odometer at that time.
  > If charges were based on expected annual mileage rather than actual readings, it would create additional workload for DOL staff to issue refunds, track credits, or require additional payments.
- DOL does not have periodic billing capability—this would have to be built.
- If DOL maintained accounts, then from the customer’s perspective, DOL would be a one-stop-shop for driver licensing, registration, and road usage charges.
- The Vehicle Headquarters System does not currently contain reliable odometer readings. The only point of capture is the sale of a vehicle, when the odometer reading is reported by the buyer (therefore, odometer readings for out-of-state sales are lost).
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- Requires DOL to build a new transaction into the Vehicle Field System for agents and subagents based on odometer as well as new online functionality and updated mail-in registration forms.

- DOL not equipped to investigate or prevent odometer fraud.

- Information Technology (IT) modernization could interfere with road usage charge implementation (and vice versa) if not properly coordinated; on the other hand, road usage charging could be among the impetuses for IT modernization.

Concept C (differentiated distance charge):

- Report differentiated mileage using onboard equipment that measures miles on Washington public roads only to DOL either directly or via a certified service provider. Certified service providers could also collect the charge and remit it to DOL on behalf of the State.

- DOL has experience with subagents, which do not report directly to DOL but rather are private entities that perform transactions on DOL’s behalf in exchange for fees. This construct is similar to the notion of certified service providers.

- If DOL maintained accounts, then from the customer’s perspective, DOL would be a one-stop-shop for driver licensing, registration, and road usage charges.

- Road usage charging would be among the impetuses for IT modernization.

- DOL does not have strong oversight experience or capabilities for monitoring performance of outsourced revenue collection entities. Subagents work directly through DOL’s IT system (Vehicle Field System).

- DOL’s IT is not equipped to handle customer accounts, vehicle hardware, mileage reporting, or periodic billing. These features would need to be built to accommodate Concept C within DOL.

- If certified service providers collect the road usage charge and remit it to DOL, there could be issues with updating the vehicle records in a timely manner to allow renewal. This is sometimes an issue with emissions, whereby the customer cannot renew tabs until information from the emissions check is updated on the database.

Based on the above summary analysis of DOL’s road usage charge capabilities, and depending on the operational concept chosen (A, B, and/or C), the administrative functions for a road usage charge would require varying levels of resources and capability development within DOL:

- Category 1 (Principal Account Management). A key point is that DOL does not currently maintain accounts, but rather it maintains records. Moreover, DOL does not have customer relationships, per se, but rather it conducts transactions with customers on a periodic basis. In order to fulfill the functions of Principal Account Management, DOL would need to extend its capabilities, particularly IT capabilities, in order to establish accounts and relationships with Principals.

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6 DOL recently launched a service called License Xpress, which allows customers to view associated vehicle and driver records simultaneously, calculate upcoming bills owed and renewal times, and conduct some transactions. However, this is a customer-facing feature. There are neither customer accounts nor integration of the driver and vehicle systems on the back end.
Concept A would not necessarily require accounts or customer billing relationships as it would be an extension of the existing registration and renewal process.

Concept B would likewise not necessarily require accounts or customer billing relationships as the odometer reading could become a step in the vehicle registration renewal process. Adding odometer reading to the registration process would not be a trivial undertaking administratively for the following reasons:

- Agents and subagents may need to be compensated for collecting odometer readings.
- Users would need to self-report, which requires additional attention to compliance and enforcement (category 3, which could be performed by another agency).
- DOL may decide to purchase odometer readings from vehicle service records bureaus as a cross-check against Principal-reported numbers.
- Vehicles sold out-of-state do not report odometer readings back to Washington so would require interstate agreements on sharing data from titles.

Concept C would require accounts and customer billing relationships so that DOL could monitor usage by Principals and bill them on that basis.

- Category 2 (Usage Charge Management). DOL currently processes large volumes of transactions through agents, subagents, DOL locations, mail, and online. Although road usage charge transaction processing could be added on to those existing processes, it would represent some level of additional workload.

- Concept A would be a relatively simple addition, but would require new systems to support installment payments.
- Concept B, if limited to transactions at the time of registration renewal, would likewise be a relatively simple addition. However, Concept B would require new systems to support installment payments.
- Concept C would require new systems to support the new transaction types. In these latter cases, DOL would see a more natural fit of usage charge management as part of the IT modernization process rather than as an add-on to any existing system and processes.

- Category 3 (Compliance and Enforcement). DOL currently provides data for enforcement but does not have an extensive analytics capability specifically designed to support compliance and enforcement efforts. This capability would need to be built and implemented, likely with various approaches tailored to each operational concept.

- Category 4 (Road usage Charge Authority). Many of these functions are similar to those already handled by DOL as part of its management of registration and licensing fee collections, but would need to be repeated for road usage charging. Fortunately, the interface with DOL is trivial as DOL owns the vehicle registry. DOL has several important reporting relationships with WSDOT, but this relationship may need to be expanded at minimum to help customers avoid confusion about road usage charging vs. tolling and perhaps to support interoperability with tolling.
**Department of Transportation**

**Agency description.** The primary mission of WSDOT is to deliver, maintain, and operate transportation infrastructure, principally roads. Historically, the revenues that fund WSDOT (fuel taxes and registration fees) are collected by a separate agency (Department of Licensing). Although the state had toll bridges in the middle part of the 20th century, WSDOT re-started toll collection in 2007 on the Tacoma Narrows Bridge, and now also has tolls on the SR520 Bridge and SR167 express lanes, with two additional toll facilities authorized and several more in planning stages. With this foundation of toll collection, WSDOT could play a role in road usage charging, specifically as a result of experience in the management and collection of tolls:

- Customer Service/Relations through prepayment and billing options;
- Retail Services;
- Enforcement;
- Revenue Collection;
- Budgeting;
- Accounting;
- Economic and Financial Analysis; and
- Reporting and Audit.

**Analysis of road usage charge capabilities**\(^7\). Building any of the road usage charge operational concepts requires new resources and capabilities at WSDOT. Below is a summary analysis of the existing and new capabilities for each category of administrative functions:

- **Category 1 (Principal Account Management).** WSDOT maintains active customer accounts with approximately several hundred thousand Good To Go!\(^8\) customers, including prepayment, periodic billing, and customer support through its outsourced customer service contract. However, WSDOT does not have relationships with all 6+ million vehicle operators in the state. Any attempt to deliver road usage charging through WSDOT (whether operational concept A, B, and/or C) would require the development of an expanded customer service and account management interface, assuming a road usage charge system would be deployed to all vehicles across the state as opposed to a particular portion of the fleet. It could be built on top of the existing tolling customer service system or other similar services for processing transactions, managing prepaid accounts, and dealing with customer inquiries. However, such a modification would likely be costly upfront, require significant ongoing operational costs, and require a substantial lead time or phased approach to ensure all Washington motorists have accounts.

- **Category 2 (Usage Charge Management).** The transaction processing functions could be rolled into the existing tolling transaction system, but would require significant and costly modifications to accommodate a new type of transaction (road usage charges), regardless of the operational concept, and an expanded number of accounts.

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7 This section does not parallel the analysis format for DOL because, for concept A (time permit) and concept B (odometer reading), DOT would have to build from scratch whereas DOT indicated that DOL would be best placed to handle these concepts.

8 Good To Go! is WSDOT’s electronic toll system.
Category 3 (Compliance and Enforcement). WSDOT would need to build an enforcement capability tailored to road usage charging. Many of the back-end functions such as recovering fines, handling appeals, and managing repeat offenders could be grouped with existing capabilities for tolling. However, the methods of enforcement for road usage charging would be different from tolling. For example, tolling is enforced through video imaging and roadside enforcement primarily at toll plazas. Road usage charging would require a more virtual enforcement based on account activity, coupled with roadside enforcement statewide. Road usage charge enforcement could also use the same link to nationwide vehicle registries that tolling uses, in order to obtain addresses and registration for motorists. In short, although WSDOT would need to build new methods and capabilities for road usage charging enforcement for determining infractions and managing compliance, some of the back-end infrastructure could be shared with tolling.

Category 4 (Road Usage Charge Authority). Many of the functions of the road usage charge authority are already being handled by WSDOT between the Tolling and Strategic Planning and Finance Divisions. These include audit, accounting, performance measurement, budgeting, planning, a limited DOL interface, third party contract management, managing revenue collection assets, IT communications and security, and managing the master set of tolling accounts.

There may be desire or mandate to achieve interoperability with the WSDOT tolling systems. Interoperability can take several forms:

- Technical interoperability, allowing road usage charge payers who opt for technology to use a single device for measuring both road usage charges and tolls. Providing this service could be handled by the state or left to certified service providers, with WSDOT’s role as one of setting open technical standards and certifying devices.

- Account interoperability, allowing customers to manage and pay for road usage charges and tolls through a single account, with a single account manager.

- Multi-state interoperability, allowing Washington road usage charges and tolling customers to manage accounts and payments with other entities (and vice versa, to allow out-of-state motorists to pay Washington road usage charges and tolls through a single entity) through a single account manager.

WSDOT would at minimum be involved in this aspect and has experience in this area at the national level.

**Department of Revenue**

*Agency description.* Washington State’s DOR collects approximately 40 distinct taxes and fees from the state’s residents and business. The three most significant taxes are on retail sales, business and occupations, and property. Table 3 summarizes the state’s tax collections in FY2012, the majority of which DOR collected.
Table 3: Summary of Washington State Revenues by Source

<table>
<thead>
<tr>
<th>Tax (collected by)</th>
<th>FY2012 revenue ($billions)</th>
<th>Percent of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Sales and Use (DOR)</td>
<td>$7.24</td>
<td>45%</td>
</tr>
<tr>
<td>Business and occupation (DOR)</td>
<td>$3.13</td>
<td>19%</td>
</tr>
<tr>
<td>Property (Counties)</td>
<td>$1.90</td>
<td>12%</td>
</tr>
<tr>
<td>Motor fuel (DOL)</td>
<td>$1.18</td>
<td>7%</td>
</tr>
<tr>
<td>All other state taxes (largely DOR)</td>
<td>$2.71</td>
<td>17%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$16.16</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>


The all other state taxes category from Table 3 includes a wide range of over 30 special taxes and fees ranging from the wood stove fee (which brought in just over $200,000 in FY2012) to the Enhanced 911 Telephone tax ($24 million) to the cigarette tax ($425 million). Only two of the taxes that DOR collects have any relation to transportation: the public utility tax and the business and occupation tax, both from commercial vehicle operators registered as businesses in Washington. Moreover, none of the tax revenues collected by DOR enter the Highway Fund. Most tax revenues go into the General Fund, but several go into other special funds.

Because Washington does not impose a personal income tax, DOR does not have tax relationships with all or even most Washington residents. The agency does maintain relationships with 480,000 registered businesses in the state.

Adding road usage charging to the responsibility of DOR would require the agency to start from scratch in a number of areas: policy development, IT, account setup with taxpayers, staffing and hiring, and training. Several representatives of the agency indicated openness to measurement and collection of road usage charges by certified service providers, but ultimately would require at least several million dollars in special appropriations to set up the initial operation, in addition to ongoing operating costs.

One complicating factor is the fact that the Legislature requires DOR to account for any taxes and fees that go into special accounts (such as the Motor Vehicle Fund) separately from taxes that go into the General Fund. In practice, DOR implements this requirement by setting up separate accounting systems in order to properly measure overhead and other costs associated with collection, for reporting purposes. A road usage charge would require this type of arrangement to be implemented. In addition, DOR recently initiated a request for proposals to upgrade the IT system for the business and occupation tax, signaling the start of a 6-year process expected to cost $60-80 million. Road usage charging would represent a set of new IT requirements for the agency that it has not yet considered either as part of its strategic planning or part of its update process.

In 2009, at the request of the Legislature, DOR studied the prospect of assuming fuel tax collection operations from the Department of Licensing (DOL). That study concluded that due to the additional accounting requirements, the cost of collection at DOR would be about $800,000 more per year than at DOL. Moreover, most of the key stakeholders, particularly the trucking industry and fuel suppliers, opposed the move because...
they see DOL as a one-stop-shop for regulatory and tax compliance. As a result, fuel tax collection remains at DOL.9

Today, DOR has virtually no programmatic relationship with the WSDOT and its relationship with DOL is limited to several very minor data sharing programs as follows:

- Motor vehicle sales/use tax (0.3%) is collected by DOR on behalf of DOL, but clearing of funds happens on the back end, with DOR providing a spreadsheet file transfer periodically to DOL indicating the reconciliation.

- DOL collects transportation benefit district fees of up to $20 along with tab renewal, where applicable. However, DOR provides information to DOL on district boundaries to help determine which residents are subject to the fee.

- DOL is required to collect motor vehicle sales/use tax in the case where DOR does not collect it (e.g., second-hand sales). Often, taxes are not reported and paid at fair value of the vehicle and DOL must call in DOR to provide backup in the dispute process.

**Analysis of road usage charge capabilities.** Although DOR indicated willingness to participate in the road usage charge program in whatever capacity the Legislature asks or requires, it is clear from research and interviews that the agency does not have the existing capabilities, systems, programs, or taxpayer relationships that lend themselves to straightforward, cost-effective implementation and operation of road usage charging.

All three operational concepts (A, B, and C) would be heavy lifts for DOR as they would need to develop almost all 38 administrative functions for each operational concept, from scratch.

- **Category 1 (Principal Account Management).** DOR would need to establish relationships with all Principals, regardless of which operational concept (A, B, or C), including the establishment of a customer service capability to address account management issues that the agency does not currently have.

- **Category 2 (Usage Charge Management).** Although DOR currently processes large volumes of tax transactions, it would need to establish a new division to handle road usage charges due to the legislative requirements to account for collection costs associated with special fund taxes separately from other taxes.

- **Category 3 (Compliance and Enforcement).** Although DOR has a compliance division, the unique nature of road usage charges (under any operational concept) would require a new set of capabilities, including audit data analysis, fine and recovery processes, and appeals processes that the agency currently does not have.

- **Category 4 (Road Usage Charge Authority).** Many of these functions are similar to those already handled by DOR for a range of other taxes, but would need to be repeated for road usage charges. However, DOR currently has a very limited interface with DOL which would need to be expanded to allow for easier exchange of vehicle records and perhaps for interoperability with existing vehicle registration processes.

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9 Washington State Department of Licensing, “Fuel Tax Administration Transfer from the Department of Licensing to the Department of Revenue, Report to the Legislature.” November 2009.
(e.g., for operational concepts A and B). DOR currently has no programmatic relationship with WSDOT, which would likely need to be established to enable interoperability with tolling at a minimum and if such interoperability is mandated by policymakers.

**Other Agencies**

In addition to DOR, DOL, and WSDOT, several other Washington state agencies could (and would likely) play roles in the ultimate implementation of a road usage charge system. These include the Washington State Patrol (WSP), Office of Financial Management (OFM), Washington State Transportation Commission (the Commission), and the State Treasurer. None of these entities has the capabilities or mission aligned with running a full road usage charge system, but could contribute important elements to the program working with whichever agency has primary responsibility. The project team has yet to assess the capabilities of these entities in detail, but we offer the following summaries based on initial research.

WSP ultimately would likely be responsible for roadside enforcement elements of road usage charging under any of the concepts. For example, if a Principal fails to pay road usage charges, fails to set up a road usage charge account, or otherwise fails to comply with the requirements of the road usage charge policy and system, WSP might be empowered with roadside enforcement in a manner similar to their current enforcement of driver and vehicle licensing. Although the operating agency (whether DOL, WSDOT, or DOR) may have the ability to impose penalties, recover fines, and suspend registration, depending on the enforcement powers granted by the Legislature, it is likely that the first interaction with non-compliant taxpayers will fall to roadside enforcers.

Currently, the WSP has the ability to look up DOL records during roadside stops through a program called Access. Access allows enforcement officers real-time lookup in order to verify that driver and vehicle records such as registration are in compliance. It is conceivable that they would likewise be granted similar capabilities to query compliance with road usage charges and issue fines at the roadside as appropriate. Should this functionality be integrated with DOL’s Access program, it would need to be coupled with IT modernization. Should the functionality be built as a separate standalone lookup system, it would need to be built from scratch.

Office of Financial Management (OFM) provides budget and financial data and research for the state and will continue to be both a consumer of revenue data and a producer of revenue projections. This role will continue and likely need to accommodate a new and potentially substantial source of state funds. It will be important to establish clear roles so that both OFM and the Road Usage Charge Authority can feed back the appropriate data to fulfill the duties of each party.

Finally, the Commission has already played a critical role in the early stage development of road usage charge policy in Washington. As the Legislature continues to utilize the capabilities of the Commission to serve as rate setters (currently for tolls and ferry fares), convene stakeholders, provide independent analysis and recommendations, explore alternatives, and refine policy objectives, it will be important to clearly indicate the role of the Commission in any future road usage charge system. For example, the Commission could play a role similar to the one it already plays in setting toll and ferry rates. It may also serve as a conduit for information fed back to the Legislature about the ongoing performance of the road usage charge system, external evaluation, and policy guidance and recommendations.
Account Management by Certified Service Providers

Cutting across all of the alternative administrative concepts and operational concepts presented here is the notion of account management by certified service providers. Certified service providers are private entities that compete for customers (Principals) in an open market. The business model for a service provider is to perform the account management and usage charge functions (categories 1 and 2) on behalf of the customer and the state, in exchange for a small service fee and potentially the right to market other products and services to the customer. They could sell, for instance, other vehicle registration services (e.g., subagents), vehicle service and repair (e.g., auto dealers and independent garages), and a range of electronic on-board services such as pay-as-you-drive insurance, parking and maintenance information, traffic information, infotainment, and interoperable tolling. Involvement of certified service providers is not required to operate road usage charging, but could be accommodated in a variety of operational concepts and administrative scenarios.

Under a certified service provider model, any entity wishing to provide account management and usage charge management (categories 1 and 2) must meet technology certification and service audit criteria as established by the state. Moreover, if they collect any road usage charges, they must remit revenues and provide full transparency and accountability for charges collected on behalf of the state, similar to retailers that collect sales taxes.

- Concept A (time permit). One alternative for the time permit concept is to integrate it with the vehicle registration and renewal process. In this case, the existing subagents that conduct transactions on behalf of DOL already act as a sort of certified service provider. They provide a transaction service on behalf of the state in exchange for a fee, in this case paid by the customer. However, it is also conceivable that customers could purchase time permits through other private channels such as convenience stores or online retailers.

- Concept B (odometer reading). Although the concept presented for odometer charges is based on self-reporting, it is conceivable that a customer could provide odometer readings to the state via a certified service provider acting as an intermediary. Under this approach, the customer’s road usage charge account and billing relationship would be with a state agency, but the odometer data, which forms the basis of the charges, would be provided to the state by certified service providers. Examples of such intermediaries could include subagents, auto dealers, repair facilities, and vehicle history reporting services. This approach would negate the need for the customer to make an additional trip to a state agency for an odometer inspection on a periodic basis, should such inspections be required in lieu of self-reporting.

- Concept C (differentiated distance charge). Under Concept C, a certified service provider could provide technology and services including road usage charging (certified by the state for measurement and collection of charges). The provider would collect charges on behalf of the state and remit them to the state on a periodic basis along with a record of all accounts. This allows the state to focus its resources on oversight of a smaller number of entities including certification of providers, road usage charge accounting, and accountability. Depending on the state’s appetite for road usage charge collection by third parties, there could be several variations on certified service providers, ranging from providers of devices only to providers of road usage charge measurement to full service road usage charge account managers and revenue collectors.

It is important to note as a caveat to the above discussion that certified service providers do not exist in the United State for road usage charging or even for tolling. They do exist in several international transportation...
markets, and they exist in non-transportation markets. An example is online sales tax services, which provide sales tax processing and accounting services for online retailers who conduct e-commerce in multiple states with various sales tax policies. These online sales tax service providers must be certified.

**Summary of Administrative Considerations**

Below are several summary considerations arising from this analysis of administrative considerations:

- **Customer service:**
  - Integration with existing processes, where possible, allows for customers to add road usage charging to their current routines without major disruption. This is equally true for a fully state-run road usage charge system as it is for a road usage charge system that allows for some degree of participation by private certified service providers. Existing state-run processes include tolling and vehicle registration. Existing customer relationships with potential certified service providers include insurance, mobile phones, in-vehicle services, vehicle maintenance and servicing, and fuel purchases.
  - Customers must believe that they are being treated equitably. Equitable treatment is easier to attain when all customers must deal with the same entity. With certified service providers, the state must create and enforce standards.
  - All existing agencies devote considerable resources to maintaining and improving customer service. Road usage charges should be implemented in a way that complements and furthers that mission. For example, DOL maintains performance metrics regarding customer interactions such as length of transactions and number of times customers are sent away if they do not have the requisite paperwork. Road usage charging, should it be implemented at DOL, would need to be implemented in a way that works within the agency’s broader customer service mission including defining and measuring such performance metrics.

- **Impact on state IT resources:**
  - Road usage charging should be accommodated by updates of IT systems. If the operational concepts require IT system expansion, upgrade, or replacement, then the road usage charge system design should be conducted as part of a broader IT modernization, whether at WSDOT or DOL.
  - Road usage charging could provide further impetus to prioritizing IT modernization, which could have important benefits for other services.

- **Cost:**
  - Integration with existing processes where possible.
  - Outsourcing where sensible.

- **Accountability:**
  - Fidelity/integrity of tax revenues is a critical aspect of the system. No matter which agency has ownership of a road usage charge system, the implementation must emphasize the importance of processes that ensure revenue integrity, transparency, and accountability.
  - Closely related to revenue integrity is accountability for all transactions, especially where third parties are involved.
Section 5: Business Case Evaluation Framework

Business Case Evaluation Approach and Outcomes

The next step in this project effort is to undertake a business case analysis of road usage charging. The remaining text in this Section is from memoranda that have been shared with the Business Case Subcommittee. Members of the Subcommittee provided comments that were integrated into the approach for the analysis, which is now underway.

Business Case Evaluation Defined

A business case involves quantitative analysis of costs, benefits, risks, alternative solutions, and the net return on investment. This will allow decision makers to compare alternative policy proposals (including the do nothing scenario), enabling an informed business decision. In short, the business case should answer the question: Is road usage charging worth doing?

A business case typically focuses the value of the proposition in terms of dollars and cents, as well as an evaluation of how well it achieves stated objectives. Therefore, part of the business case analysis will be to evaluate the extent to which the proposed policy alternatives achieve the goals and guiding principles developed at the June Steering Committee meeting.

Alternatives

We will evaluate several alternatives:

- Existing gas tax, with rates as they are today.
- Potential road usage charge concepts:
  - **A. Time Permit**: Permit for unlimited access to Washington roads for a given period of time.
  - **B: Odometer Charge**: Prepay for a fixed number of miles, and then reconcile actual miles periodically.
  - **C: Differentiated Distance Charge**: In-vehicle device records miles driven inside and outside State borders and charges accordingly.
  - **Combinations**: A&B; A&C; B&C; A+B+C.

Rate Assumptions

We will need to develop straw man rates to use in the analysis, understanding that rate setting will be up to the Legislature, and making that fact crystal clear in our documentation and presentations.
Rates for the business case analysis will be as follows:

- **Existing Gas Tax**: $0.375 per gallon, which we will assume will still be the rate in 2015, the starting point for our analysis.

- **A. Time Permit**: An amount equal to the average annual gas tax paid in Washington forecast for 2015. We will calculate this by taking total gas tax collections divided by the number of registered vehicles.

- **B: Odometer Charge**: An amount equal to the total gas tax collections in Washington forecast for 2015 divided by the total number of miles driven by Washington vehicles.

- **C: Differentiated Distance Charge**: The same as for Concept B.

Note that the above calculations will all result in the gross revenue amount for current collection. We will do a first round of evaluation based on these numbers. However, it would also be appropriate to do the calculations assuming net revenue, which we will be able to do after the first round and have estimates of costs. Our approach will be as follows:

- Estimate net gas tax collections statewide in 2015

- Estimate how much the rates for concepts A, B, and C would have to be changed to end up with the same net gas tax collection in 2015.

- Keep that rate throughout the forecast period.

Presumably, this approach will result in declining net revenue from the gas tax over time, but the amounts from the alternatives will increase.

**Implementation Plans and Phasing**

For each alternative, we will develop an appropriate implementation plan, that might involve phasing. We will incorporate a reasonable set of assumptions into the business case evaluation, recognizing that there are numerous potential approaches. While we will not quantitatively analyze all possible approaches, we will point out where alternative approaches might result in different outcomes.

**Net Present Value of Cash Flows**

We will develop a 25-year cash flow from an assumed start date of 2015 through 2040, addressing gross revenues, associated collection costs, as well as the net present value to provide a consistent basis of comparison. We will also show the cash flows in case there are lessons to be learned from the timing of the costs and revenues under the various alternatives.
**Performance Criteria**

Performance criteria are based on the goals and guiding principles developed at the June 2013 Steering Committee meeting. Some criteria are more amenable to quantification than others. Below are the criteria, with our proposals on how to measure them:

<table>
<thead>
<tr>
<th>Performance Criterion</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sustainable Revenue Source.</strong> Identify and develop a sustainable, long-term revenue source for Washington State’s transportation system to transition from the current motor fuel tax system.</td>
<td>This is the overriding goal. The present value of the cash flow will illustrate the differences among alternatives.</td>
</tr>
<tr>
<td><strong>Transparency.</strong> A road usage charge system should provide transparency in how the transportation system is paid for.</td>
<td>Score on a 1-5 scale, and comment.</td>
</tr>
<tr>
<td><strong>Complementary Policy Objectives.</strong> A road usage charge system should, to the extent possible, be aligned with Washington’s energy, environmental, and congestion management goals.</td>
<td>Score on a 1-5 scale, and comment.</td>
</tr>
<tr>
<td><strong>Cost-effectiveness.</strong> The administration of a road usage charge system should be cost effective and cost efficient.</td>
<td>In order to compare policies on equal footing, annual cost of collection as a percent of gross revenues will be provided for each policy alternative when the full vehicle fleet is paying (either gas tax or road usage charge).</td>
</tr>
<tr>
<td><strong>Equity.</strong> All road users should pay a fair share with a road usage charge.</td>
<td>Score on a 1-5 scale. Since there are many nuances to this, we may choose to identify different dimensions of equity (e.g., urban vs. rural, low-income vs. high-income) and score each identified equity issue.</td>
</tr>
<tr>
<td><strong>Privacy.</strong> A road usage charge system should respect an individual's right to privacy.</td>
<td>This is something that should be included in the design of each of the alternatives, and need not be included in the business case other than a simple statement that it is included in the design.</td>
</tr>
<tr>
<td><strong>Data Security.</strong> A road usage charge system should meet applicable standards for data security and access to data should be restricted to authorized people.</td>
<td>This is something that should be included in the design of each of the alternatives, and need not be included in the business case other than a simple statement that it is included in the design.</td>
</tr>
<tr>
<td><strong>Simplicity.</strong> A road usage charge system should be simple, convenient, transparent to the user, and compliance should not create an undue burden.</td>
<td>Score on a 1-5 scale, and describe qualitative nuances.</td>
</tr>
</tbody>
</table>
### Performance Criterion

<table>
<thead>
<tr>
<th>Performance Criterion</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accountability.</strong> A system should have clear assignment of responsibility and oversight, and provide accurate reporting of usage and distribution of revenue collected.</td>
<td>This is something that should be included in the design of each of the alternatives, and need not be included in the business case.</td>
</tr>
<tr>
<td><strong>Enforcement.</strong> A road usage charge system should be costly to evade and easy to enforce.</td>
<td>Score on a 1-5 scale, and describe qualitative nuances. We will also note that the success of enforcement will depend on the extent to which legislation allows for penalties to recoup enforcement costs.</td>
</tr>
<tr>
<td><strong>System Flexibility.</strong> A road usage charge system should be adaptive, open to competing vendors, and able to evolve over time.</td>
<td>This is something that should be included in the design of each of the alternatives, and need not be included in the business case.</td>
</tr>
<tr>
<td><strong>User Options.</strong> Consumer choice should be considered wherever possible.</td>
<td>Score on a 1-5 scale, and describe qualitative nuances.</td>
</tr>
<tr>
<td><strong>Interoperability and Cooperation.</strong> A Washington road usage charge system should strive for interoperability with systems in other states, nationally, and internationally, as well as with other systems in Washington. Washington should proactively cooperate and collaborate with other entities that are also investigating road usage charges.</td>
<td>This is something that should be included in the design of each of the alternatives, and need not be included in the business case.</td>
</tr>
<tr>
<td><strong>Phasing.</strong> Phasing should be considered in the deployment of a road usage charge system.</td>
<td>We will consider phasing with each of the alternatives, and comment on any potential issues.</td>
</tr>
</tbody>
</table>

We will identify and describe (but not quantify) the risks associated with each of the alternatives as they relate to the performance metrics above. We see two key categories of risks related to road usage charging in Washington of particular importance for the business case: costs and revenues. An initial list of risks is provided below.

- **Cost risks:**
  - Technical difficulties resulting in a poorly performing system with higher costs
  - Delays in system development
  - Over-specification leads to higher costs
  - Procurement process leads to higher costs for private sector, vendor lock-in, and technology obsolescence
  - Systems that rely on private certified service providers fail to garner firms willing to compete for the business (i.e., they do not see it as a profitable venture)
> Private sector unable or unwilling to participate in road usage charge service provision
> Washington State agencies unable to provide the necessary organizational support to implement and operate road usage charging effectively
> Interoperability with tolling and other IT services becomes problematic

- Revenue risks:
  > Inability to determine a road usage charge rate at the level that provides sustainable revenues
  > Inability to determine a way to adjust the rate to maintain a reasonable revenue stream.
  > Road usage charges decrease driving to the point that a mileage charge (for Concepts B and C) results in declining revenue over time.
  > Revenues are not protected for road/transportation use
  > Policy fails to specify necessary enforcement measures such as insufficient fines and penalties resulting in widespread evasion or adverse impacts to operational costs.

**Business Case Schema**

The business case analysis will use a range of analytical tools, both qualitative and quantitative, including:

- Quantitative modeling of costs and revenues
- Evaluation of how well each potential road usage charge system achieves policy objectives
- A preliminary identification of potential risks.

Following is our approach to the quantitative modeling of costs and revenues. To construct the model of costs and revenues, we begin with a schema, which depicts in flowchart format a high-level representation of the inputs, processing and intermediate outputs, and final outputs. The schema allows us to understand how the model will work and agree on the types of model outputs we expect.

**Elements of the Cost and Revenue Model**

The basic structure of the model is illustrated in Figure 3. There are two types of inputs:

- **External Inputs**: generally outside of our control (gray); and
- **Policy Inputs**: within our control (green).

Further, there are two categories of outputs:

- **Intermediate Outputs**: detailed breakdown of costs and revenues for road usage charging and fuel taxes (red); and
- **Final Outputs**: summary, rolled-up costs and revenues, including cash flow and net present value over the model time horizon of road usage charging and fuel taxes (blue).
The model will estimate net revenues of road usage charges and fuel taxes in parallel. Both estimations rely on a range of inputs as listed below and illustrated in Figures 4 and 5.

**External Inputs (gray):**

- Inputs from existing forecasts and data sources:
  - Vehicle registrations
  - Vehicle miles traveled (average per vehicle and aggregate statewide) and fleet fuel efficiency
  - Fuel consumption
  - Gas tax collection costs
  - Out-of-state travel by Washington residents
- Other external inputs, such as:
  - Labor and materials costs associated with state employees operating a road usage charge and/or fuel tax program
  - Inflation
  - Technology costs such as in-vehicle hardware (if applicable), back office IT infrastructure, software, and communications
  - Transaction fees (which contribute to transaction costs) such as:
    - Credit card and bank fees
    - Compensation to third parties such as subagents and certified service providers, should they be involved
    - Adoption rates of each operational concept, if multiple operational concepts are offered to the public
Policy Inputs (green):

- Tax rates (gas tax, road usage charge)
- Operational concepts and administrative alternatives
  > Operational concepts A, B, and/or C
  > Administrative alternatives: State agencies and/or certified service providers
- Transition/phase-in strategy. At this time we will focus on analyzing the end state – in which all vehicles pay road usage charges. However, it is important to recognize the possibility of a transitional period in which road usage charges gradually phase in to subsets of the vehicle fleet each year. The details of the transition strategy will impact both costs and revenues and may need to be captured in the model for testing transition scenarios in the future.
- Compliance (e.g., audit rates) and enforcement methods and penalties to be employed

Through a series of computational processes, the model will produce intermediate outputs as listed below.

Intermediate Outputs (red):

- Fuel consumption
- Road usage charge and fuel tax eligible vehicles
- Gross road usage charge revenues and lost road usage charge revenue due to evasion
- Gross fuel tax revenues (net of evasion, for which data are not currently available)
- Road usage charge administration costs by category:
  > Program administration costs (including management, staff, performance measurement, evaluation, and policy compliance)
  > Audit costs
  > Enforcement costs
  > IT costs
  > Cash flow disruption costs (e.g., based on shifting from a pre-pay fuel tax model to a post-pay road usage charge model) and other miscellaneous financial costs
  > Communications costs (marketing, education, PR)
  > Electronic device communications costs and transaction costs, which both contribute to overall account management costs

Both the intermediate and the final outputs of the model will be of interest. The intermediate outputs will help us understand how policy choices impact specific costs and revenues in a detailed manner. For example, if we vary a policy inputs such as “audit rate,” the final outputs will show us how that change impacted overall net revenues. However, by looking at the more detailed intermediate outputs, we can see exactly which cost categories are impacted by the change. The intermediate outputs will be rolled up into final bottom line outputs (i.e., net revenue) that are of interest and necessary for the business case analysis.
Final Outputs (blue):

- 2015 - 2040 road usage charge cash flows (gross revenues, costs, evasion, and net revenues) and net present value (NPV).
- 2015 - 2040 gas tax cash flows (costs and revenues) and NPV as baseline for comparison.

**Model Schema**

Figure 4 below depicts the schema (computational logic) for the road usage charge portion of the model. Policy inputs (green) include road usage charge rates, operational concepts, and transition strategy, while external inputs (gray) include such factors as vehicle registrations and vehicle miles traveled. Arrows indicate how key variables feed into the computation of intermediate outputs. For example, in order to determine the number of road usage charge eligible vehicles at any given time, we must know the number of total vehicles registered in Washington and the transition/phase-in strategy for road usage charging.

**Figure 4: Schema for Road Usage Charge Cost and Revenue Model**
Figure 5: Schema for Gas Tax Cost and Revenue Model

* If RUC phase-in corresponds with phase-out of gas tax, we may reflect that as a separate gas tax revenue projection.
Section 6:
July 30, 2013 Commission Meeting:
Commission Comments and Responses

The Transportation Commission had several comments at the July 30, 2013 Commission meeting to which we promised to provide responses. We prepared a memo to the Transportation Commission, which is duplicated on the pages that follow.
Memorandum

August 21, 2013

To: Washington State Transportation Commission & Staff
Copy: Road Usage Charge Steering Committee
From: Consultant Team

Subject: Response to Commission Comments at July 30 Commission Meeting

The Transportation Commission had several comments at the July 30, 2013 Commission meeting to which we promised to provide responses:

1. Why wouldn’t we consider government as a potential certified service provider in addition or instead of private vendors?

2. Why have we not included a pay-at-the-pump option in our three operational concepts being used for the business case evaluation?

3. Shouldn’t we be working towards the quickest possible implementation of a road usage charge pilot or demonstration?

Responses to each of these are provided below.

**Why wouldn’t we consider government as a potential certified service provider in addition or instead of private vendors?**

There is nothing in our analysis of the business case for road usage charging that would preclude government acting as a certified service provider. However for purposes of the simplified business case analysis, we have to make certain reasonable assumptions, or the amount of analysis would get out of hand for the time and budget provided for the evaluation. The assumption of private handling of certain aspects of each of the three proposed road usage charge concepts is reasonable based on the experience of other states that have looked at different road usage charge proposals.

After our report in December 2013, should Washington choose to work toward implementation of a road usage charge system, far more detailed analysis should be done to recommend the most effective, and cost-effective approaches. Such approaches could include government in some of the roles that we have assumed would be outsourced.

Any road usage charge would be run by a government agency, but some functions could be outsourced. In Concept C, which would involve the use of in-vehicle mileage recording devices, we have assumed that the government agency would want to allow certified third party service providers to augment existing in-vehicle services (e.g., pay-as-you-drive insurance or navigation) to include recording and handling the accounting for per-mile road usage charges. Concepts A (time permit) and B (odometer reading) might also have private involvement, such as allowing motorists to handle transactions at local gas stations or convenience stores.
Since the envisioned system leverages existing commercial services, and government does not now provide these services, it makes sense to assume that at least this part of the road usage charge function would be private. However, should a road usage charge move forward, there is nothing that would prevent government from trying to provide this service.

**Why have we not included a pay-at-the-pump option in our three operational concepts being used for the business case evaluation?**

For background, the idea of using fuel pumps to exchange data grows out of the need to rebate fuel taxes during a transition period from the gas tax to an alternative road usage charge approach – as was tested in the first Oregon pilot project. The work we are doing right now is focused on the business case for an alternative road usage charge approach. If the Steering Committee, the Commission, and the Legislature agree that there is a business case, then the work to create a transition strategy would be done, and an approach that uses fuel pumps can be assessed.

Within the framework of our current task, the operational concept of pay at the pump could be a subset of Operational Concept C, Differentiated Distance Charging. Operational Concept C could make use of dedicated short range communications while the vehicle is stopped waiting to refuel or recharge, similar to the 2007 Oregon Pay at the Pump model and is similar to the current Nevada system design.

Under Operational Concept C, some certified service providers might entertain the idea of using fueling stations as a convenient location to obtain driving data from motorists. It might be possible to devise a system where not all fuel pumps/charging stations need to be retrofitted to make the system work. We will look at this option as part of Operational Concept C.

**Shouldn’t we be working towards the quickest possible implementation of a road usage charge pilot or demonstration?**

The first phase of the road usage charge evaluation was to evaluate the feasibility of road usage charges in Washington and to develop a work plan and budget aimed at a potential pilot study. The Transportation Commission submitted the “Feasibility Assessment, Work Plan, and Budget, Report” to the Legislature on January 23, 2013. The proposed work plan moving forward summarized on page 7 of the report said the following:

> To get from where we are now—“feasible”—to a new system of road usage charging is a complex effort involving potentially contentious policy choices and operational and administrative design decisions. We developed a two-phase process to get to the point where Washington might implement a new road usage charge system:

- **2013-2015 Biennium: Policy Framework and Preferred Operational Concepts (Phase 1).** If authorized by the Legislature, the next phase of work would focus on policy choices, implications, public outreach, and operational concept design to enable the Legislature to decide whether to begin full pre-implementation system development.

- **2015 and Beyond: Pre-Implementation System Development (Phase 2).** If authorized by the Legislature, activity would shift to detailing system features and administrative needs and
conducting pilot tests of preferred operational concepts. Phase 2 would be scoped at the end of Phase 1.

- **Implementation.** At the end of Phase 2, if directed by the Legislature, full implementation and transition activities could commence.

**The Potential Role of Pilot Tests in the Work Plan.** Pilot tests can demonstrate technology, administrative systems, or public acceptance before committing extensive resources to a road usage charge system. Pilot tests will be best carried out in Phase 2 once policy direction is established and a preferred operational concept is chosen.

In the 2013 legislative session, the WSTC was provided $400,000 for additional work during FY 2014 only. The budget proviso directs:

- To the Transportation Commission - “…solely for the development of the business case for the transition to a road usage charge system as the basis for funding the state transportation system, from the current motor fuel tax system.”

- To WSDOT - “…continue to address administrative, technical, and conceptual operational issues related to road usage charge systems…”

The bill noted that

- prior efforts “represent an important first step in the policy and conceptual development…”

- “…but that the governance for the development needs clarification”

- “…significant amounts of research and public education are occurring…and that these efforts can and should be leveraged…”
“The legislature intends, therefore, that the commission and its staff lead the policy development of the business case for a road usage charge system, with the goal of providing the business case to the governor and the legislative committees of the legislature in time for inclusion in the 2014 supplemental omnibus transportation appropriations act.”

Additional specifics indicated that the work should:

- Develop preliminary road usage charge policies that are necessary to develop the business case, as well as supporting research…
- Develop the preferred operational concept(s) that reflect the preliminary policies
- Evaluate the business case….must assess likely financial outcomes
- Identify and document policy and other issues that are deemed important to further refine….to gain public acceptance.
- Should form the basis for continued work…

Budget notes related to this portion of the Transportation Budget bill indicate that “Funds must be directed to policy, operational concept, and business case development. Funding may not be used for public surveys or other broad-based public outreach.”

In summary, the Legislature clearly intended for this to be an incremental, methodical process, considering the policy, conceptual, and business case aspects of road usage charging before moving on to addressing public attitudes, preparing for a pilot or implementing a system. Further, the budget provided was one quarter of that which would have allowed for a more aggressive schedule towards implementation. No funding was provided for a pilot test.

Accelerating the program to achieve a pilot test prior to completing the analysis now underway would prematurely require pilot scope and design. In addition, a pilot test at this time would clearly violate and be in conflict with the current legislative directive to the WSTC.
Appendix A:  
Road Usage Charge Administrative Function Descriptions

Principal Account Management

This first functional category covers typical customer management functions such as opening and closing accounts, customer relationship management, and handling inquiries.

1. Principal Register/Initiate Account or Add Vehicles
   This function involves actions that take place as the individual user’s first exposure to the system and includes:
   > A range of registration and checking/validation processes;
   > Issuing and managing the selected account type, payment type, billing process, and any metering equipment, if necessary; and
   > Additions of newly titled vehicles to an existing account.

   The Principal (owner or lessee) of the vehicle initiates the process upon establishing ownership for the vehicle, either through a new or used sale. The vehicle titling process administered by DOL will also establish the link between the eligible vehicle (or vehicles) and the Principal. This can be a many-to-one relationship of eligible vehicles to a single Principal.

2. Account Maintenance and Customer Support (Customer Relationship Management, or CRM)
   This function provides ongoing management of account details, including:
   > Charges to and payments on accounts;
   > Changes of vehicle ownership or account address details;
   > Account cancellation;
   > Responding to requests for account details online or by mail; and
   > Generally ensuring that the Principal has everything they need to pay the appropriate charges.

3. Usage and Account Handling
   This function handles the allocation of charges for each vehicle’s usage of the road network (mileage or time used, depending on the system) at the proper rate to the proper account.

4. Change Service Provider/Replace Equipment
   In systems with certified service providers, this function manages changes to the relationships and allows Principals to change providers if they are not happy with their service (or for other reasons). It addresses:
The transfer, opening, and closing of the accounts and the tracking of the Principal during the transition to ensure that the Principal account does not experience any loss of posted mileage or information during a change of accounts.

Any updates, changes or upgrades of the Principal vehicle’s metering equipment for technical, not maintenance reasons—maintenance of non-operational equipment is handled under a separate process. An example of a technical change is an over-the-air software upgrade. An example of a maintenance issue is a failed sensor or communications component.

5. **Handle Enquiries, Complaints and Disputes**

   This function handles any enquiries, account questions, billing clarification or questions, system complaints, and disputes by Principals. In addition:

   > The timely handling of any queries or complaints is managed as a reflection of the system performance and responsiveness to Principals.
   
   > Disputes are logged and categorized here and any account information necessary to back-up or rectify the dispute are also addressed under this function.
   
   > This function also addresses the processing and response to complaints and disputes, with users or other contracted parties, including providing supporting information through a public communications function.

6. **Modify, Transfer or Close Account**

   This function handles the modification, transfer, or closure of a Principal’s account for a given eligible vehicle. Modifications of accounts may occur with a change of title, insurance claim, or movement of the Principal’s vehicle out-of-state.

   > In the case of a sale of the vehicle or title transfer, the vehicle history and data for the responsibility of paying the usage charge transfers with the vehicle. This function ensures that the old and new owner pay their fair share during a transfer of title or sale of the vehicle. Vehicle mileage information may be required.

   > The new owner of the eligible vehicle is processed under function (1). The old owner and the completion of charge liabilities are handled under this function. When all the required documentation and back-up are processed, the account is closed. A record of closed accounts is maintained for accounting purposes.

**Usage Charge Management**

The usage charge management functional category includes processes to identify road usage and calculate charges (whether detected automatically or through self-reporting), process transaction data, and calculate and process eligible refunds. These processes are the data interface between the method of gathering mileage data (whether self-reported, or through metering equipment), and the transaction processing of the data into information that builds in a Principal’s account that is managed by the system.

7. **Principal Declare**

   If the Principal opts for a time-based permit, the Principal’s account is categorized as “Declare.” Declare is a charge management process that entails the handling of eligible vehicles at regular intervals (e.g., once per year) and can be repeated in subsequent periods by the Principal. There is no
further processing or account management other than the reconciliation of the vehicle through the vehicle identification number (VIN) against the master set of accounts. Declare accounts can be handled either by the Road Usage Charge Authority or by a service provider contracted by the Road Usage Charge Authority.

8. **System Detect**

The Principal can make one of several choices that result in being categorized under the “Detect” function. “Detect” is a charge management process that entails the handling of the Principal’s eligible vehicles when the Principal opts to pay for actual usage of the road network in periodic payments throughout the year. Measurement of usage can be under any of several approaches chosen by the Principal (e.g., manual vs. un-differentiated vs. location differentiated).

> Un-differentiated mileage processing occurs with technology that does not distinguish the vehicle mileage being in or out of the state jurisdiction. All miles are charged the same mileage rate and accounted for in this function. If a road usage charge system allows offsets or refunds for travel on private or out-of-state roadways, the Principal will have to file for such refunds through a manual process.

> Should the Principal select a differentiated technology, the charge processing will record mileage by zone (e.g., in-state versus out-of-state) automatically.

9. **Process Transaction Data**

This function is a process that involves the collection, storing, and transmission of data relating to mileage charge liability, including validating and collating records, and other related processes to prepare charge liability data into a suitable format to process charge management for the eligible vehicle associated with the Principal.

10. **Calculate Charge Demands**

This function is a process that involves validating the appropriate usage charge rate and calculation of the charge due for a specific transaction. This process is performed by correlating the equipment type for the given time and location (if differentiated) for the transaction. Mileage rates are provided by the Road Usage Charge Authority and may be updated over time.

11. **Reconcile Usage to Mileage and Zones**

This function is a process that relates the mileage for each zone[^10] (where zones have been established as part of the road usage charge scheme) with the authorized rate for the zone. The calculated mileage rate is posted to Principal accounts, as well as issuing of statements or bills and processing of received payments to the proper Principal account by eligible vehicle or vehicles. Raw transaction data are tagged by vehicle account and linked to a Principal in the road usage charge management system. Principals at their option may get their payment deducted from their prepaid account, charged on their credit card, or may have the amount added to their monthly invoice. As payments are made, the charge management is updated on a periodic basis to account for the proper standing of the Principal’s account. This process also includes the escalation of unpaid or partially unpaid charges to charge recovery and handling.

[^10]: Only Concept C has zones, and there are only two: charged and not charged. Other potential systems could have differential charges by location (such as urban and rural areas).
12. Calculate and Process Refunds

This function is a process that involves the processing of refunds for fuel purchases of vehicles that may be allowed to recover taxes paid for qualified types of fuels in the State of Washington. Credits or refunds are processed and recorded in the account management of the Principal’s eligible vehicle account. There may be both automatic processing of these credits or refunds and/or manual processing of these refunds covered in this function.

Compliance and Enforcement

This category comprises functions that involve the handling of both compliance and enforcement. There is a fine balance between compliance and enforcement, and it is anticipated that comprehensive, accurate, and timely enforcement will act as a deterrent to evasion. These functions are interrelated and will evolve over the life of the road usage charge program.

13. Determine and Verify Infractions

This function includes capturing enforcement data, including unreported Road Usage Charge-eligible vehicle usage and vehicle data for purposes of determining compliance or non-compliance. Using combined systems to detect and identify proper eligible vehicles, a range of processing and cross checking processes, a compliance regime will be employed. Eligible and ineligible vehicles will likely be identified using DOL records.

14. Manage Compliance

This function includes the processing of enforcement data to determine compliance, delivering non-compliance notifications, and handling user compliance queries, complaints, and responses to notifications. It also encompasses programs to inform Principals and certified service providers of their responsibilities under the law and ensure an adequate level of public information and education.

15. Enforce

This function includes processing of mileage checks and other enforcement related tasks, issuing of road usage charge demands, dealing with representations and appeals, addressing legal processes and strategies to deal with persistent evaders.

16. Recover Fines and Penalties

This function extends to the recovery of charges and potential fines after an infraction is identified and demands issued. These processes address functions from the charging functional area to addressing unpaid charges from the “enforce” function rather than the “process payment” function. This activity is also related to pursuing unpaid demands.

17. Handle Appeals

This function involves the legal handling and evidentiary requirements for legal appeals by the Principal who challenges the demands and provides evidence to refute the demands of the State.

18. Manage Repeat Offenders

This function involves the cataloguing of identified evaders for monitoring and legal handling. It also includes the statistical combing of transaction data and accounts to help identify with reasonable
certainly those Principals that may not be paying their legally owed charges and commencing further investigations and audits of their accounts for recovery and management of outstanding payments.

**Road Usage Charge Authority**

The Road Usage Charge Authority is the lead management and control functional area for all the other functional areas and their constituent functions, including all policy and management functions of the governing authority of road usage charges. 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 program that would most likely be retained by the government regardless of the degree of outsourcing in other categories.

19. **Comply with Policy / Legislation**

This function houses the authority and compliance responsibility of the Road Usage Charge Authority by law. The oversight and mission of the Road Usage Charge Authority emanates from the empowering legislation. Managing that role and providing feedback to the Legislature is also incorporated in this function. Likewise, any changes to the legislation are held in this function.

20. **Manage Master Set of Accounts**

The purpose of this function is to ensure that each eligible vehicle is paying road usage charges by reconciling and cross-referencing eligible vehicles with corresponding accounts as follows.

> Road Usage Charge Authority functions will be integrated into the overall mission of Washington State government as appropriate. As such, the Road Usage Charge Authority should work with the DOL, which registers and titles vehicles in the State.

> DOL can provide a VIN number and owner information corresponding to vehicles registered in the State. Any changes to that list will come as updates to the Road Usage Charge Authority.

> The Road Usage Charge Authority will be solely responsible for ensuring that all eligible vehicles are included in the program and pay their legally owed road usage charges.

21. **Audit**

This function exists to prevent fraud and abuse and to enhance compliance, fairness, and transparency of the road usage charge. There are two aspects of the Audit function.

> The first is the internal audit of the functions and processes.

> The second is the external audit of private contractors, vendors or certified service providers. The external auditing function can extend to an annual external audit of the Road Usage Charge Authority itself to assure Legislators that all elements, processes, and procedures are fully transparent and operating efficiently and effectively.

22. **Set/Recommend Changes to Rates**

This function provides the means for the Road Usage Charge Authority to monitor and manage the effects of the road usage charge on the subset of vehicles subject to it and on the revenue streams generated for the state. This function monitors and manages the effects of the road usage charge and the needs to adjust the rate(s), up or down, and to make such recommendations to the State.
Legislature. If approved, new rate tables must be publicized and implemented, including provision of official rates and effective dates to any contractors, vendors or certified service providers.

23. Evaluate and Measure Operational Performance

This function involves evaluation and measurement of the Road Usage Charge Authority in the performance of its goals and mission.

> During the first several years of the Road Usage Charge Authority’s existence, a formal and independent operational evaluation of each function and process can be conducted and reported on not just the performance of each, but the effectiveness and efficiency of the whole organization. Metrics and key performance indicators are kept, refined and evaluated yearly during the initial life of the organization. The report will be published after it is reviewed and approved by the legislative committee responsible for the oversight of the Road Usage Charge Authority.

> After the first several years, the evaluation and measurement can continue to be an independent contract awarded to an outside entity, or it can be pulled into the management of the Road Usage Charge Authority. Either way, there is a need to manage and monitor the ongoing refinement of key performance indicators in the organization.

24. Manage System Performance

Managing system performance is critical to the ongoing success of the road usage charge program. This function starts at the top of the organization with the management team and involves every lower level director and manager; it represents the effective management of the entire universe of road usage charge functions, no matter how diverse and decentralized across Washington State government. Ultimately, authority and responsibility for performance rest with the Director of the Road Usage Charge Authority.

25. Provide Stakeholder Communications, Public Relations and Marketing

This function is the outreach mission of the Road Usage Charge Authority. It involves provision of continuous communications and public relations of the Road Usage Charge Authority’s mission and responsibility to the public. Additionally, it will be responsible for managing and maintaining outreach activities in the form of marketing materials and general educational materials to the Principals and value chain of stakeholders involved in road usage charging.

26. Trusted Third Party Contract Management

An open market approach to road usage charging requires a function that contracts, manages, and monitors the performance of third parties—in the case of the three proposed concepts, we have referred to these as certified service providers.

> This function is involved with the procurement, management, and monitoring of third parties contracted by the state to handle Principal accounts, technology, and any value-added services for the road usage charge market in both Washington and potentially other jurisdictions.

> This function reviews the performance of each selected third party though key performance indicators and constantly updates and follows up with each if the performance or contractual obligations fall short of desired levels.

> This function may also in some cases include termination of third parties that do not abide by the contract obligations and performance standards set for them.
27. Provide Planning and Controls

This function handles the future planning and controlled growth of the Road Usage Charge system. It charts the vehicle fleet and the eligible vehicle classifications into the future to address the needs of the Road Usage Charge Authority to meet its obligations under the law. In addition, this function will address trends in the market and possible new vehicle classes that should be recommended for inclusion in the road usage charge program. This function should also address the competitive market needs of certified service providers and work closely with the Contract Management function to identify expansion or contraction of the marketplace, creation of new value-added service providers, and identification of data aggregators who can better service the Principals. This function will also work closely with other planning groups within state government for fostering a cohesive and responsive environment across the state.

28. Manage Assets

This function involves management of all the physical plant and equipment used in the ongoing administration of the road usage charge as well as the administrative equipment entrusted to the Road Usage Charge Authority. It does not include any physical plant, equipment, or other assets belonging to contractors, vendors or certified service providers.

29. Manage IT/Communications and Security

This function can be integrated into the overall IT and communications structure of state agencies, but the unique character of road usage charge transaction processing, cloud computing, communications, security requirements for Principal accounts, and privacy requirements for Principal data lend themselves to a dedicated and separate function.

> The IT functions will manage and run the Road Usage Charge Authority’s overall IT architecture and keep it both in operation and updated with technology developments in both the hardware and the software services required.
> The cloud computing environment and nature of the road usage charge communications also make them unique. The absolute need to harmonize both the transaction processing of the account management and the dynamic communications to transfer the required data from vehicle to account management will result in special security requirements on this function.
> A distributed network of certified service providers will also require close coordination with the IT staffs of each.

30. Road Usage Charge Management

This function is responsible for interface and flow of revenue from the collection of road usage charges (whether by public agency, contractor, vendor or certified service providers) to the Treasury. It is a financial function that manages, monitors, and predicts the expected revenue flow on a daily, monthly and yearly basis. It also handles budgets and the budgetary process for the Road Usage Charge Authority. The responsibility of this function also provides economic indicators to the Office of Financial Management, the State Treasurer, the Transportation Revenue Forecast Council, and affected agencies on the shifts and trends in the economy, which are reflected in the vehicle miles traveled by each eligible vehicle class.
31. **Manage Interoperability**

Certification of contractors, vendors or certified service providers and their equipment and systems may be conducted by a state agency or an independent entity. This function involves oversight of the certifying entity as well as monitoring and continual revision of standards for the road usage charge system.

> The Road Usage Charge Authority can provide oversight to the certification entity either in-house or through independent, external contractors. Even if contracted out, this function is still responsible for the monitoring and standards-setting that will be enacted by the independent certification entity.

> This function will also monitor the technical changes introduced by contractors, vendors or certified service providers to ensure that the evolution of technology in the marketplace is not hindered by outdated standards. This functional element will be responsible for the testing, verification and accreditation of the Road Usage Charge Authority’s technical standards.

> This function is further responsible for assuring standards implemented are interoperable with any other systems required by legislation, such as, potentially, tolling systems.

32. **DOL Interface**

As mentioned in functional element 20 (Manage Master Set of Accounts) the list of eligible vehicles and the Principals linked to each vehicle originates in the DOL.

> While management of the master set of accounts is performed in that function (20), the interface with DOL and the handling of the list from DOL is performed in this function (whether the Road Usage Charge Authority resides inside DOL or elsewhere).

> The interface with DOL is not just a technical or data stream; rather, it is a working relationship where other parts of the Road Usage Charge Authority (such as Compliance and Enforcement) will require assistance in handling Principal fines and road usage charge demands.

> The need to also handle changes and modifications and transfers or closed accounts by the Principal Account Management functions will also require a close coordination and tracking with DOL.

33. **Manage GIS/Map Data**

The very heart of any location based service is the GIS / Map data function. Although third parties may handle technology, Washington state agencies will need to coordinate, manage, modify, and update GIS map data or else certify externally provided map data. By providing this common data set to third parties, consistent location-based measurement can be ensured.

34. **Reconcile Transactions to Usage and Principal Accounts**

This function is separate and distinct from the reconciliation function within the Principal Account Management category. It is separated to provide checks and balances, to ensure that all Principal account management, whether done by third parties or by the Road Usage Charge Authority, is performed in an efficient and effective manner.

35. **Distribute Technology and Inventory Management**

This function addresses the need to control and inventory all metering equipment in stock and ensure proper inventory controls are in place and administered, although it is conceivable that if certified
service providers are employed, they may supply most if not all equipment to Principals. This function also addresses the projection of needs for future equipment and the timely ordering process to ensure sufficient inventory is maintained. The actual testing and installation of equipment are also contained in the function, as well as the monitoring of each piece of equipment and the replacement of malfunctioning or inoperative units.

36. **Recover Charge Demands**

This function is the extension of the usage charge management category. It is aligned with the Road Usage Charge Authority as a financial process to track, account, and process all usage charge demands centrally. The empowerment of a third party to accomplish this is difficult. As such, the Road Usage Charge Authority retains this function.

37. **Process Charge Payments**

This function is also an extension of the usage charge management category. It is one of the accounting functions of the Road Usage Charge Authority, designed to handle the revenues from third parties and the charge management category and manage the deposit of the revenues into State accounts as required by law. This function reconciles and accounts for all revenues, variances, charge demands, and penalties.

38. **Adjudicate Appeals and Privacy**

This function is a process that involves the establishment of an independent entity to ensure that any perceived or actual privacy violations or perceived unfair charge demands can be appealed. While the Road Usage Charge Authority may handle the evidentiary files to back up its claims, an independent body should carry out the actual handling of appeals and privacy concerns. This independent body is a safety valve for the overall system and provides the Principal a means to address any inequitable practices, perceived or real. It could be an outside contracted mediator or an administrative hearing process integrated with existing hearing boards used across Washington State agencies.