

IMPLEMENTING ALTERNATIVE TRANSPORTATION FUNDING METHODS



PRELIMINARY WHITE PAPER ON EVALUATION CRITERIA & FUNDING METHOD IMPLEMENTATION: WORKING DRAFT



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IMPLEMENTING ALTERNATIVE TRANSPORTATION FUNDING METHODS STUDY

Draft White Paper on Evaluation Criteria and Funding Method Implementation

I. PURPOSE

The 2009 legislature directed the Joint Transportation Committee (JTC) to conduct a comprehensive analysis of mid-term and long-term transportation funding mechanisms and methods. Elements of the study are to include existing data and trends, policy objectives, performance and evaluation criteria, incremental transition strategies, and possibly, scaled testing (ESSB 5352 (204) (1)).

The study will analyze the feasibility and practicality of implementing funding methodologies identified in the JTC's 2007 *Long-Term Transportation Financing Study*, as well as other approaches identified by the committee, staff, and the consultants. The principle objective of this project is to identify specific steps for the legislature and agencies to begin implementing viable mid-term and long-term transportation funding approaches. The primary focus of this effort is to examine state imposed and collected transportation taxes and fees.

This draft white paper includes an evaluation framework to review potential state funding methods, reviews funding methods against the criteria, and discusses implementation strategies. This draft includes fuel and use funding methods. Subsequent versions of this draft will include the other funding methods.

Two additional draft white papers have been developed as part of this study: *Draft White Paper on Policy Initiatives* and *Draft White Paper on Transportation Funding Projections*.

II. EVALUATION FRAMEWORK

Exhibit 1 summarizes the evaluation framework.

The goal is to **develop a package of funding tools** that the legislature can consider. It is not anticipated that any one funding method will meet all of the state's objectives.

Two threshold criteria which every funding method had to meet to be considered are: 1) the funding method is an appropriate state level fee or tax; and 2) it has a nexus to transportation. The threshold criteria screened out general funding methods, such as an income tax or a general sales tax, from consideration.

Four objectives and associated evaluation criteria are included in the framework:

- **Revenue stream:** Provide a stream of revenue commensurate with transportation system funding needs. Evaluation criteria are: the potential revenue from the funding method: whether it is responsive to inflation, population change, and economic growth; stable and predictable - particularly in view of projected and potential changes in vehicle miles traveled (VMT), energy sources, and energy prices; administration is easy for the public to

understand and comply with; collection is cost-efficient; and the funding method is compatible with current or potential federal funding methods.

- **Benefits/reflect use:** Provide a clear purpose and policy rationale linked to transportation system use, economic development, and other state policies and goals. Evaluation criteria are: is the funding method linked to a particular transportation service or facility so taxpayers clearly understand the benefit received; does the funding method reflect use and vary by how much, when, and/or where an individual uses the transportation system; is it available to fund a full range of transportation choices or is it restricted by the 18th Amendment to the Washington State Constitution¹ or by existing law; does it positively affect transportation system performance and other state policies and goals by, for example, reducing congestion or greenhouse gas (GHG) emissions; and does it create and grow system connections by reducing barriers between transportation modes.
- **Equitable:** Funding burden is geographically equitable and equitably allocates transportation costs to those who benefit. Evaluation criteria are: do the costs to individual taxpayers reflect the benefits they receive from the transportation service or facility; do these same costs reflect the impact the user has on the transportation service or facility; do the costs reflect geographic variations in the state, including such things as access to multi-modal transportation choices, needs, highway types, and levels of use; and what is the cost impact on low tax base communities and would they be disproportionate.
- **Local:** Allows for viable local transportation funding options that recognize the distinct needs of different local systems. Evaluation criteria are: does the funding method provide a revenue stream that could, by legislative authorization, be distributed to local systems; does it provide an opportunity for the legislature to authorize viable local options; and does it promote continuity of the transportation system by reducing inter-jurisdictional barriers.

III. FUNDING METHODS INITIAL SCREENING

Funding methods that met the threshold criteria were grouped into whether they would be applied to fuel, transportation system use, vehicles, drivers, transportation related businesses, or the general transportation system.

The initial screening was discussed at the September 9, 2009 JTC meeting. Four funding methods were dropped from further consideration based on the initial screening:

- Vehicle engine and displacement fee
- Advertising
- Container freight fee
- Varying driver's license fees by vehicle miles traveled

Funding methods that were continued for further analysis were screened into two categories: those that would be given the highest priority for analysis and other potentially viable funding methods. Exhibit 2 shows the results of the initial screening.

¹ The 18th Amendment to the Washington State Constitution dedicates excise taxes collected on the sale, distribution, or use of motor vehicle fuel for highway purposes.

**Exhibit 1.
 Evaluation Framework**

<p>GOAL: Develop a package of funding tools that the legislature can consider to meet transportation funding objectives.</p>			
<p>THRESHOLD CRITERIA: Does the funding method meet the following two criteria? If not, it will not be evaluated.</p> <p>The funding method is an appropriate state level fee or tax. The funding method has a nexus with transportation.</p>			
<p>OBJECTIVES</p>			
<p>Revenue Stream Provide a stream of revenue commensurate with transportation system funding needs.</p>	<p>Public Benefit - Reflects Use Provide a clear purpose and policy rationale linked to transportation system use, economic development and other state policies and goals.</p>	<p>Equitable Funding burden is geographically equitable and equitably allocates the costs to those who benefit.</p>	<p>Local Allows for viable local transportation funding options that recognize the distinct needs of different local systems.</p>
<p>EVALUATION CRITERIA BY OBJECTIVE</p>			
<p>Revenue Stream Revenue potential Responsive to inflation & growth Stable & predictable Administration Collection cost Federal compatibility</p>	<p>Public Benefit - Reflects Use Link to transportation service or facility Reflects use Available to fund a full range of transportation choices Positively affects transportation system performance & other state policies & goals Creates and grows system connections</p>	<p>Equitable Costs reflect user benefits Costs reflect user impact Costs reflect geographic variation Cost impact on low tax base communities</p>	<p>Local Provides revenue stream that could support local systems Provides an opportunity for viable local options Promotes continuity of transportation system</p>

Implementing Alternative Transportation Funding Methods
Evaluation Criteria and Funding Method Implementation

KEY 16-year total (\$ millions)	REVENUE	Status	Current Yield (16 year total, \$millions, YOE)	Potential Yield	Cost of Collection	Growth Potential	Stability	Federal Compatibility	REFLECTS USE	EQUITY	LOCAL
14) Option 8- Vary by type of motor fuel (for each additional \$0.05 on diesel)	●	NEW		◑	●	◑	◑	YES	◑	◑	●
15) C. Exported Fuels Tax (remove exported fuel exemption)	◑	NEW		◑	●	◑	◑	YES	◑	◑	◑
16) D. Alternative Fuels Taxes	●	NEW		●	●	●	◑	N/A	◑	◑	◑
17) Option 1 - Electric /Natural Gas Vehicle Fuel Tax	●	NEW		●	●	●	◑	N/A	◑	◑	◑
18) 2) USE											
19) A. Highway Facility Tolls	●	EXISTING	● \$1,492M (TNB)		◑	●	●	YES	◑	◑	◑
20) Option 1 - Expand allowed uses of toll revenues	●	NEW		○	◑	●	●	YES	●	◑	◑
21) Option 2 - Expand facility tolling	●	NEW		●	◑	●	●	YES	◑	◑	◑
22) Option 3 - Segment Tolls	◑	NEW		◑	◑	◑	●	YES	◑	◑	◑
23) Option 4 - Non-auto tolling	◑	NEW		○	◑	◑	◑	N/A	◑	◑	◑
24) B. Highway Congestion Pricing	◑	EXISTING	○ \$49M (SR 167)		◑	◑	◑	YES	●	●	●
25) Option 1 - Expand HOT lanes in high congestion areas	◑	NEW		◑	◑	◑	◑	YES	●	●	●
26) Option 2 - Variable tolls on tolled roads/bridges	◑	NEW		◑	◑	◑	◑	YES	◑	◑	●
27) Option 3 - Zone-based or cordon tolling	◑	NEW		●	◑	◑	●	YES	◑	●	●
28) C. Highway Systemwide Pricing - Vehicle Miles Traveled (VMT) Pricing	◑	NEW		●	◑	●	●	NO	●	◑	●
29) Option 1 - Vary with congestion/vehicle characteristics	◑	NEW		●	◑	●	●	NO	●	●	●
30) Option 2 - Vary by road type	◑	NEW		●	◑	●	●	NO	●	◑	●
31) D. Highway Systemwide Pricing - Truck Weight/VMT Pricing	●	NEW		◑	◑	●	●	NO	●	◑	◑
32) Option 1 - Add truck weight mile tax	●	NEW		◑	◑	●	●	NO	●	◑	◑
33) E. Washington State Ferries (WSF) Fares (2.5% Increase)	●	EXISTING	◑ \$3,277M		●	●	◑	YES	◑	●	◑
34) Option 1 - Fuel Surcharge	●	NEW		◑	●	●	◑	YES	◑	●	◑
35) Option 2 - Adaptive Management Strategies	●	NEW		◑	●	●	◑	YES	●	◑	◑
36) Option 3 - Non-resident pricing	●	NEW		○	◑	●	◑	YES	◑	◑	◑

Implementing Alternative Transportation Funding Methods
 Evaluation Criteria and Funding Method Implementation

KEY 16-year total (\$ millions)														
●	\$10,000	●	High	REVENUE	Status	Current Yield (16 year total, \$millions, YOE)	Potential Yield	Cost of Collection	Growth Potential	Stability	Federal Compatibility	REFLECTS USE	EQUITY	LOCAL
◐	\$1,000	●	Medium											
◑	\$500	●	Low											
◒	\$100													
○	\$10													
81)	B. Tax on Auto Insurance Premiums				New									
82)	5) TRANSPORTATION BUSINESS													
83)	A. Dealer/Manufacturer Business License	●			EXISTING	○ \$23M		●	●	●	YES	●	●	●
84)	<i>Option 1 - Index</i>	●			NEW		○	●	●	●	YES	●	●	●
85)	<i>Option 2 - B&O Tax Distribution to Transportation</i>	●			NEW		◐	●	●	●	YES	●	●	●
86)	B. State impact fee	●			NEW	○	○	●	●	●	YES	●	●	●
87)	6) WIND POWERED ELECTRIC GENERATION FROM HIGHWAYS													
<i>TNB - Tacoma Narrows Bridge</i>														

IV. FUNDING METHOD REVIEWS AND IMPLEMENTATION

This section provides reviews the funding methods identified as high priority for further analysis. It includes a general review of how the funding method conforms to the evaluation framework and identifies implementation issues. Three evaluation criteria that relate to implementation - administration, collection cost, and availability to fund a range of transportation choices – are reviewed in this section. Appendix A provides a more detailed assessment for each funding method for the other 15 evaluation criteria.

A. Barrel Fee

1. Evaluation Framework

A barrel fee, imposed on motor vehicle fuel and motor diesel fuel to be used in the state, would be an additional source of transportation revenue.

A barrel fee aligns well with the revenue stream criteria, particularly if it is indexed, and local options criteria because the legislature could elect to provide a portion of the revenue to local jurisdictions.

2. Revenue

Total revenue from a barrel fee over 16-years is estimated at \$1.9 billion assuming the following:

- **Fee:** \$1.00 per barrel of motor fuel consumed in the state
 - The cost per gallon of this fee at retail is 2.4 cents (cpg)
 - For each \$0.05 increase in the fee, revenues would increase by \$94 million over 16 years (with indexing to the consumer price index).
- **Indexed:**
 - The \$1.9 billion dollar estimate assumes that the fee is indexed to the consumer price index.
 - If not indexed, the total revenue over 16 years would be reduced by \$460 million and the increment for each \$0.05 would be reduced to \$72 million.
- **Percentage to non-transportation uses:** No percentage is provided to non-transportation uses.

3. Implementation Considerations

a. Administration

Implementation of the fee will require the Department of Licensing to issue rules, which will require support from the Attorney General. As noted in a fiscal note to a 2009 house bill that proposed a barrel fee, “the rules are expected to be fairly controversial and somewhat complicated.”² Once the rules are adopted it is anticipated that taxpayers subject to the tax would be able to understand the fee and to comply with it.

² Bill 1614 HB Fiscal Note, p. 2.

b. Fee Collection

The Department of Licensing could modify the system now in place to collect the motor vehicle fuel tax, assuming that the barrel fee is applied to the same fuels. Anticipated costs of collection are to be determined.

c. Funding Constraints

Issue: It is not clear whether the barrel fee would be subject to the 18th amendment. The consultants will continue to research this question. If not subject to the 18th amendment, the fee would be available to fund a variety of transportation choices and could, for example, be used to fund the multi-modal account, rail, and other transportation services. The legislature could also direct a portion of the fee to non-transportation purposes, if the fee is not subject to the 18th amendment.

B. Motor Fuel (Gasoline, Diesel and Special Fuels) Tax

The motor fuel tax is an existing tax, currently providing 38 percent of all state transportation funding. If only earned revenues are considered - excluding bond sales, federal funds, and interest - the motor fuel tax accounts for 51 percent of all state transportation earned revenue.

**Exhibit 3.
State Transportation 16-Year Funds and Earned Revenue**

Source	% 2009-25 Funds	% 2009-25 Earned Revenue*
Motor Fuel Tax – 37.5 cpg	38%	51%
Licenses, Permits & Fees	18%	24%
Bond Sales	14%	
Federal Funds	12%	
Ferry Revenues	7%	10%
Tolling (TNB & SR 167)	3%	5%
Vehicles Sales Tax	3%	4%
Miscellaneous/Interest	5%	6%
Total Funds/Revenue	\$46.7 billion	\$34.1 billion

*Excludes bond sales, federal funds, and interest which are not earned revenues.

Five options for re-structuring the motor fuel tax and other states practices were given high priority for further analysis:³

Option 1: Index the motor vehicle fuel tax

- Ten states index their motor vehicle fuel tax
- Five states adjust the tax annually, 4 semi-annually, and 1 quarterly
- Indexes used are: the consumer price index (2 states); the whole fuel price (4 states); the producer price index (1 state); average cost of fuel (1 state); retail price of fuel (1 state); and alternative fuels sold (1 state)

³ Lower priority options to be analyzed for restructuring the motor vehicle fuel tax are varying the tax by type of vehicle or by type of fuel, and set increases in the tax.

- Federal studies have recommended indexing to the transportation construction cost index

Option 2: Add a special sales tax to retail sales of motor vehicle fuel

- Eleven (11) states add sales tax to retail purchases of motor fuel ranging from 2 percent to 7 percent or 4 to 8 cpg
- Sales tax is applied to the retail price after state and/or federal excise taxes are deducted in four states
- One state adds a sales tax only in areas where mass transit systems exist
- One state identifies the sales tax as a motor fuel infrastructure assessment – 2 percent of the retail price

Option 3: Add a gross receipts tax as a percentage of the wholesale price

- Connecticut applies a 7.53 percent gross receipts tax on the wholesale price

Option 4: Add a petroleum company tax as a flat rate to the wholesale price

- New York has a 16.4 cpg petroleum business tax applied on the wholesale price

Option 5: Increase rate in largest counties for large infrastructure projects

- The nine largest counties are: King, Pierce, Snohomish, Spokane, Clark, Kitsap, Yakima, Whatcom and Thurston counties which together in the 2000 census had 79 percent of the state's population

1. Evaluation Framework

The current motor vehicle fuel tax does not keep pace with inflation and its revenue potential is adversely affected by increasing fleet fuel efficiency, rising energy prices, and decreases in VMT. The tax does reflect use of the system by drivers, although it is becoming a more indirect relationship as fuel economy increases. It provides a stream of local revenue, with the state directing 4.92 cpg and 2.96 cpg of the 37.5 cpg it collects to counties and cities respectively.

2. Revenue Potential

The options for re-structuring the motor vehicle fuel tax vary with regard to the revenue stream and its stability. The special sales tax has the largest potential revenue, generating a 55 percent increase in revenue over the projected motor vehicle fuel taxes. None of the options would make the motor vehicle fuel tax less affected by VMT or increases in fleet fuel efficiency. The special sales tax, indexing, and the percentage based gross receipts tax would allow the motor vehicle fuel tax to better keep pace with inflation. Under RCW 46.68.090 motor vehicle fuel taxes are distributed to state and local jurisdictions on a percentage of total tax basis so indexing the motor vehicle fuel tax would increase local revenues.

The exhibit below shows the revenue potential under the following assumptions

- **Indexing**

- **Index Used:** The revenue projection shown in the exhibit below shows the 16-year revenue from indexing to the CPI and from indexing to the WSDOT construction cost index. Some states use other options.
- **Frequency of adjustment:** The revenue projected assumes an annual rather than semi-annual or quarterly adjustment to the motor vehicle fuel tax.
- **Sales Tax to Retail Price Only:** The revenues shown in the exhibit below assume that the special is applied to the retail price of motor fuel minus federal and state motor vehicle fuel taxes. It also shows only a state sales tax being imposed.

**Exhibit 4.
Motor Vehicle Fuel Tax Restructuring Options Evaluation**

Evaluation Criteria	Option 1A Index – CPI*	Option 1B Index- CCI*	Option 2 Special Sales Tax (6.5%)	Option 3 Gross Receipts Tax Percentage (per 1%)	Option 4 Petroleum Company Tax CPG (per 5 cpg)	Option 5 Increase Five Counties (per 5 cpg)
Revenue Stream – 16 yr	\$5.4 billion	\$10.9 billion	\$12.2 billion	\$1.3 billion	\$2.4 billion	\$1.8 billion
% increase	31%	62%	69%	7%	14%	10%
Stability	More		More	More	Same	Same

Assumes annual indexing ** Assumes sales tax on retail price excluding state & federal motor vehicle taxes, which is an exception to the manner in which retail sales tax is currently applied, which does not allow for any deduction except the value of vehicle trade-ins.

Local sales tax: There is an additional option, not included above, to allow the imposition of local taxes on the sales of motor vehicle fuel. The additional revenue to cities, counties, and special districts could be restricted for transportation investments.

1. Implementation Considerations

a. Administration

Indexing the motor fuel tax - DOL administers the motor vehicle fuel tax. Indexing the tax will require the development of rules. Once promulgated, the taxpayer should be able to understand and comply with the tax.

Special sales tax – The Department of Revenue (DOR) administers the sales tax. If a state (and local) special sales tax were applied to motor vehicle fuel retail prices, the taxpayer should be able to understand and comply with the tax. It should also be noted that individual taxpayers could deduct the sales tax paid from their federal income tax, which would reduce the net impact on consumers.

Gross receipts tax, percentage –Wholesalers are currently subject to the business and occupation tax at the rate of 0.484 percent. Any new and additional gross receipts tax on the wholesale price of fuel should be separately imposed on the wholesaler to avoid any conflict with existing business and occupation tax deductions. If this tax were imposed, the affected taxpayers should be able to

understand and comply with the tax. Affected taxpayers would be the 83 licensed gasoline distributors and 116 licensed diesel distributors in the state.⁴

Petroleum company tax, cpg – This tax would be administered by DOL in association with the motor vehicle fuel tax which is currently collected based on when it is delivered to the terminal rack from a refinery, pipeline, or barge. This tax would be collected at the same time.

b. Collection Cost

The cost of collection for these options is relatively low, with the possible exception of the percentage gross receipts tax which is the only option that does not extend a current form of tax collection.

DOR notes that the special sales tax would require additional auditing and compliance requirements. To minimize collection costs DOR recommends that any special sales tax be directly reflected in the metered pump price.

c. Funding Constraints

All of the options would be subject to the 18th amendment, except the special sales tax. As discussed in the Joint Legislative Review and Audit Committee's *2009 Full Tax Preference Performance Review Report*, a special sales tax on motor vehicle fuel would not be subject to the 18th amendment. It is the only option that could fund a range of transportation choices. The sales tax could also be used to fund non-transportation activities.

C. Alternative Fuels Tax

The state has the same motor fuel tax rate for special fuels, including bio-diesel, as on petroleum based projects. Increased market penetration of plug-in hybrid electric vehicles (PHEVs) is anticipated.⁵ This section focuses on ways to tax electricity or natural gas used as vehicle fuel.

For electric vehicles, there is a trade-off between the size of battery and the range that a PHEV can travel before relying on gasoline and/or needing to be re-charged and the availability of charging stations. A recent US Department of Energy study concluded that "overall transportation system cost can be reduced by providing a rich charging infrastructure rather than compensating for lean infrastructure with additional battery size and range."⁶ A rich charging infrastructure in which PHEV owners can be assured of frequent re-charging opportunities will involve charging stations in three location types: single family residences with garages, multi-family apartments and condominiums with shared garages, and commercial/public venues.

The report suggests that the charging stations will most likely be separately metered as a way for utilities to encourage off-peak charging by providing significant discounts in the evening hours or charging a significant premium during peak hours. For example, Pacific Gas & Electric (PG &E) in northern California offers a special, discounted rate for plug-in and other electric vehicle customers, the "Experimental Time-of-Use Low Emission Vehicle rate".

⁴ Joint Legislative Accountability and Review Committee, *Preliminary Report: 2008 Full Tax Preference Performance Reviews*, p. 89.

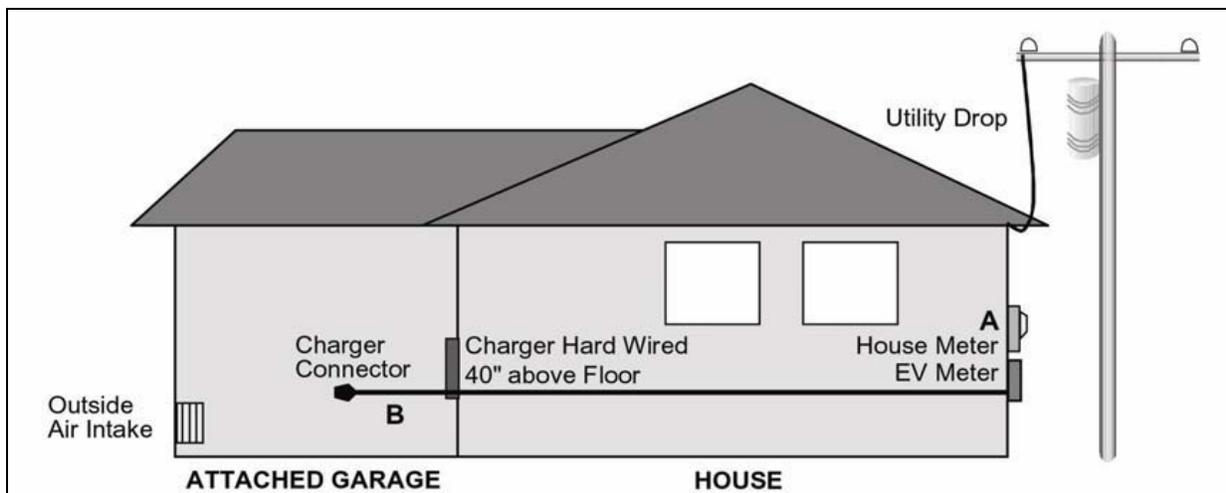
⁵ Discussed in *Implementing Alternative Transportation Methods: Policy Initiatives Draft White Paper*, Sept. 9, 2009, p. 53.

⁶ U.S. Department of Energy Vehicle Technologies Program – Advanced Vehicle Testing Activity, *Plug-in Hybrid Electric Vehicle Charging Infrastructure Review Final Report*, Nov. 2008, p. 3.

In single-family and multi-family residential settings this “typically requires the addition of a second meter that monitors the energy use of the electric vehicle or PHEV separately from the household load.”⁷ The second meter for an electric vehicle (EV) in a single family residential setting is shown in the exhibit below.

PG&E ratepayers have the option of a single time of use (TOU) meter for the entire household or a separately metered electric vehicle (EV) charging or natural gas vehicle (NGV) fueling. The least expensive rate, “applies to customers with a separately metered EV battery charger or NGV fueling station who allow PG&E to install a time clock that limits operation of their EV battery charger or NGV fueling station for up to 917 hours per year, not to exceed 7 hours per day. These hours will be chosen by PG&E and may vary according to the conditions that exist on the local PG&E distribution system in which the customer's premise is connected.”⁸

Exhibit 5. Typical Residential Garage Charging



Source: U.S. Department of Energy Plug-in Hybrid Electric Vehicle Charging Infrastructure Review, Final Report Nov. 2008.

Two options are identified to tax electricity or natural gas used by vehicles:

Option 1: Separately Metered Use Charges: Where separately metered electricity or natural gas is used to power vehicles a separate transportation tax (either per kwh, a percentage, or the applicable utility tax) could be established to fund the transportation system. The tax could be indexed to keep pace with inflation or transportation system cost increases. The state could consider requiring that all power for PHEV or natural gas vehicles be separately metered.

Option 2: Not Separately Metered Use Charges: The state could charge an indexed, flat fee to utility rate payers that have electric or natural gas charging facilities that are not separately metered. The fee could be based, for example, on the number of charging units.

⁷ Ibid., p. 20.

⁸ Pacific Gas & Electric, “Electric Vehicle Charging Rate and Economics”, rate sheet.

1. Evaluation Framework

A tax on energy consumed by alternatively fueled vehicles could be set to generate as much revenue as from petroleum fueled vehicles. Funding stability would be affected by decreases in power needed to charge or power the vehicle. An electric or natural gas fuel tax would reflect the use of the system, reflect user benefits, and could be set to reflect the decreased GHG emissions from these vehicles. If the fee is set as a percentage of power charges, it would reflect geographic variations in utility charges. The legislature could direct a portion of revenues generated to local jurisdictions and/or the legislature could allow additional local option taxes.

2. Revenue

Not yet estimated.

3. Implementation Considerations

a. Administration: DOR administers the state utility tax. This tax could either be administered by DOR or potentially DOL. Administration of option 2 would be complicated by the fact that the state would have to track charging units. Nothing would prevent a consumer from installing a plug-in charging facility of their own. Therefore, absent standardized smart receptacles in all PHEV which are compatible with a standardized monitoring system, it is not clear how these unmetered plugs could be tracked and how to enforce compliance.

b. Collection Cost:

Not yet estimated. Collection may be complicated by the following:

- **Vehicle-to-Grid technologies**

Researchers are developing "vehicle-to-grid" technologies that allow a two-way connection between the plug-in hybrid electric vehicle and the local utility grid. While the vehicle is plugged in and not in use, the utility could take advantage of the extra electrical storage capacity in the vehicle batteries to help meet peak electricity demand, provide grid support services, or respond to power outages. PHEV owners could get "paid" by the utility for use of their vehicles, which would only be used when needed and without negative effects on the vehicle battery's state of charge. Google.org's Recharge IT program is demonstrating vehicle-to-grid technologies.⁹

Another source downplayed the potential for vehicle-to-grid, claiming that it would require additional vehicle circuitry and raising concerns that the pollution impact of the vehicles could be worse than building additional power plants. Operating the vehicles to produce power for the grid could also be cumulatively more expensive than other power options.¹⁰

- **Pricing Intelligence Technology**

There are several ways to be able to monitor the electricity usage by the PHEV. Most references cite either a separate electric plug or smart charger as the source of information that can be transmitted to the electric provider (and hence to a taxing

⁹ U.S. Department of Energy, *Energy Efficiency and Renewable Energy*, August 12, 2008.

¹⁰ Oak Ridge National Laboratory, *Impact of Plug-in Hybrid Vehicles on the Electric Grid*, October 2006

authority). The intelligence could also be in the vehicle itself, tied to the charger unit. In this case, there would need to be a process to transmit the relevant electricity information from the vehicle or to store it securely for later processing

- **Off-the-Grid Recharging Systems**

Research has been done to tie plug-in hybrids to alternative recharging systems. One of the more notable examples is to have plug-in hybrids recharged from rooftop photovoltaic systems. Such systems would have virtually zero emissions, but would be very problematic to tax. Presumably there could be other off-the-grid systems tied to wind, hydro or equivalent technologies. The consultants could not find information about the extent to which this off-the-grid approach to PHEV recharging could penetrate the market.

c. Funding Constraints

A fee on electric or natural gas vehicle fuel could be subject to the 18th amendment which states: All excise taxes collected by the State of Washington on the *sale, distribution or use of motor vehicle fuel* shall be paid into the state treasury and placed in a special fund to be used exclusively for highway purposes. If a charge on metered electricity or natural gas, or the charging units, were regarded as an excise tax on the sale, distribution, or use of motor vehicle fuel, it would be subject to the 18th amendment.

D. Highway Facility Tolls

The state implemented a toll on the Tacoma Narrows Bridge in 2007 and has authorized tolling on the SR 520 bridge. The use of revenue from tolls is restricted by RCW 47.56.830 to the tolled facility as follows:

All revenues from an eligible toll facility must be used only to construct, improve, preserve, maintain, manage, or operate the eligible toll facility on or in which the revenue is collected. Expenditures of toll revenues are subject to appropriation and must be made only:

- a. To cover the operating costs of the eligible toll facility including necessary maintenance, preservation, administration, and toll enforcement by public law enforcement within the boundaries of the facility;
- b. To meet obligations for the repayment of debt and interest on the eligible toll facilities, and any other associated financing costs including, but not limited to, required reserves and insurance;
- c. To meet any other obligations to provide funding contributions for any projects or operations on the eligible toll facilities;
- d. To provide for the operations of conveyances of people or goods; or
- e. For any other improvements to the eligible toll facilities. (Section 4.(2))

The legislature directed WSDOT to develop tolling options for the Alaska Way Viaduct and the Columbia River Crossing for presentation to the 2010 legislature.

Options for highway facility tolling that are considered high priority for further analysis are:

Option 1: Expand allowed uses of toll revenue

- The Washington State Climate Action Team's report to the 2009 legislature recommended allowing the use of tolling revenues for public transit, carpooling and other more sustainable travel patterns.¹¹
- The federal government allows the use of excess toll revenues¹² from highways constructed with federal funds for transit if the state certifies annually that the highway is being fully maintained.
- Pennsylvania Turnpike Act 44 revenues are used to fund rural and urban transit agencies.
- The imposition of cordon tolling in London was tied to a dramatic improvement in bus transit service, with a substantial portion of net revenues used to expand transit options for those affected by the toll. Bus ridership and service increased dramatically. Bus ridership increased 14 percent in the first two years of the program and bus congestion levels were down 50 percent.¹³
- The legislature could consider expanding the use of toll revenues to include transit services for state highways, facilities (such as park and ride lots), and ferry terminals within the tolled facility's core service area. For the Tacoma Narrows Bridge for example, this might include SR 3, SR 16, the Bremerton, Southworth, and Tahlequah ferry terminals, and associated park and ride lots.

Option 2: Expand facility tolling

- The Washington State Transportation Commissions' 2006 *Comprehensive Tolling Study* identified the following potential other facility tolling projects:
 - I-90 Bridge Tolling
 - I-5
 - I-5 in Lewis County
 - Snoqualmie Pass Improvements
 - SR 704 Cross Base Highway
 - Statewide Truck Tolling

Option 3: Segment tolls

- Tolling parts of extended systems, such as I-5, to support repaving or other projects could be done as segment tolls. As the segment is improved, the toll could be removed and placed on another section of the highway.
- Twenty-four (24) states have toll facility agreements for portions of the interstate highway, with many states having multiple agreements. Washington State does not have federal toll facility agreements.

¹¹ Washington State Department of Commerce and Washington State Department of Transportation, *Leading the Way: Implementing Practical Solutions to the Climate Change Challenge*, November 2008, p. 4.

¹² Excess revenues are toll revenues beyond those needed for debt service, reasonable return on private investment, and operation and maintenance.

¹³ Sources: "London Congestion Pricing Implications for Other Cities" by Todd Lichtman and 2006 Annual Report.

- Federal law currently allows pilot projects for interstate system construction (no more than three) and interstate system reconstruction and rehabilitation pilots (no more than three).

1. Evaluation Framework

Tolling is a potentially large source of revenue with, for example, 94.2 percent of the Tacoma Narrows Bridge capital costs as well as 100 percent of its operating costs covered by tolls.¹⁴ Tolls will keep pace with inflation and debt service costs, but toll rates could be affected by decreases in VMT. Tolling clearly is linked to a transportation service or goal and reflects use. It is not available, per legislative direction, to fund a variety of transportation choices. Tolling has been authorized as a local option for cities to fund bridges (RCW 35.74.05), for counties to fund transportation benefit districts (RCW 36.73), and for regional transportation improvement districts (RCW 36.120). No local option tolls have been implemented.

Of the options identified, expanding the use of tolling for other uses, particularly transit tied to the use of state highways, facilities, or ferries, would meet the evaluation criteria of creating and growing system connections and promoting continuity of the transportation system.

2. Revenue Potential

The 16-year plan anticipates tolling revenues from the Tacoma Narrows Bridge and SR 167, with the majority of funds from the Bridge tolls. Additional revenues from tolling will depend on the studies currently underway by WSDOT and by legislative decisions. It is anticipated, but not reflected in the 2009-25 16-year financial plan, that tolls on the Alaskan Way Viaduct will provide no more than \$400 million of the capital cost for the project and that SR 520 bridge tolls will support \$1.2 billion in capital.

3. Implementation Considerations

a. Administration

The public can understand tolls and can comply. Tolls on the Tacoma Narrows Bridge have been a combination of electronic tolling for frequent users and collection at staffed toll booths. For the SR 520 bridge, WSDOT anticipates all electronic tolling collection (AETC).

b. Collection Cost

The cost of collecting tolls is relatively high when compared to administering taxes such as the motor fuel tax. For the Tacoma Narrows Bridge, as shown in the exhibit below, costs related to tolls were 47 percent of revenues collected in FY 2008.

¹⁴ Washington State Transportation Commission, Washington State Comprehensive Tolling Study Final Report—Volume 2, Background Paper #7: Tacoma Narrows Bridge Toll Policy, 2006, p. 7-6.

Exhibit 6.
Tacoma Narrows Bridge FY 2008 Revenues & Operating Expenses
 (\$ millions)

	\$	% of Total Revenue and Income
Operating Revenues		
Tolls	29.96	
Violation Penalties	0.47	
Transponder Sales	0.76	
Miscellaneous Revenue	0.00	
Subtotal	31.19	
Non-operating Income		
Prior Period Recoveries	0.05	
Interest Income	1.09	
Subtotal	1.15	
Total - Revenue and Income	32.34	
Operating Expenditures		
Personal Service Contracts	0.27	1%
Goods and Services		
Toll Operator Contract	9.85	30%
Insurance	2.68	8%
Credit Card and Bank Fees	0.56	2%
Washington State Patrol	0.57	2%
Other	0.28	1%
Travel	0.02	0%
Capital Outlays	0.41	1%
Salaries and Benefits	0.65	2%
Total - Operating Expenditures	15.28	47%

WSDOT has issued a Request for Proposals (RFP) for the development of the AETC tolling system and for a centralized customer service center that would service the needs of all WSDOT highway tolling operations. A recent study by the JTC: *Independent Review of Toll Operations Cost for the Washington State Department of Transportation, Report of the Expert Review Panel* September, 2009, reviewed the costs and made recommendations for modifications to the RFP, many of which are being incorporated by WSDOT.

c. Funding Constraints

Toll revenues are not subject to the 18th amendment, but they are subject to legislative restrictions. Currently, all revenues from an eligible toll facility must be used only to construct, improve, preserve, maintain, manage, or operate the eligible toll facility on or in which the revenue is collected. The legislature could modify these restrictions at its discretion.

E. Highway Congestion Pricing

WSDOT has a four year congestion pricing pilot project - SR 167 high occupancy vehicle toll (HOT) lanes. For a toll that varies based on the level of congestion, single occupant vehicles can use the high occupancy vehicle lanes. HOT lanes began operating in May 2008, with a single HOT lane running in each direction of SR 167 for approximately nine miles between Renton and Auburn. The legislature has direct WSDOT to study additional HOT lanes in the I-405 corridor as a possible next step to implementing the I-405 Corridor Master Plan and connecting I-405 to the SR 167 HOT lanes - thereby creating a north-south Eastside Corridor Express Toll Lane System and a bypass to I-5.

Three highway congestion pricing options have been identified as high priority for further analysis:

Option 1: Expand HOT lanes in high congestion areas

- HOT lane studies are underway for the I-405 corridor
- Seven states have HOT lanes and studies are underway in six more

Option 2: Variable tolls on tolled roads/bridges

- Tolls that vary with congestion are collected on the SR 167 HOT lanes
- Variable tolls are anticipated on the SR 520 bridge

Option 3: Zone-based or cordon tolling

- Zone based or cordon tolling occurs when drivers are charged a toll to enter a particular area, such as a downtown area
- Zone tolls are in effect in London, Singapore, and Stockholm
 - In 2003 when cordon pricing for those driving into London from 7:00 a.m. to 6:30 p.m. Monday-Friday was introduced the portion of total trips made into central London by private auto was already low (12 percent) due to an abundance of alternatives and congestion. Within a few months auto traffic was reduced by 20 percent with congestion decreasing by 30 percent. The toll rose to 8 pounds in 2005 with minimal effect on traffic levels – 3 percent additional reduction. The zone was expanded westward in 2007 (and hours changed to 7:00 a.m. to 6:00 p.m.) with traffic in the extension zone dropping 10-15 percent in the first three months compared to 2006 and congestion down 20-25 percent. The overall response has been positive with businesses noting the benefits of increased productivity and faster delivery times due to reduced congestion. Some smaller retailers that relied on customers driving in have had a negative reaction.¹⁵

1. Evaluation Framework

Congestion pricing meets, in addition to the evaluation criteria discussed above for highway facility tolling, the criteria for improving system performance. It has been shown in practice on SR 167 to

¹⁵ Sources: "London Congestion Pricing Implications for Other Cities" by Todd Lichtman and 2006 Annual Report.

improve traffic flow and reduce congestion.¹⁶ Studies of the potential expansion of the HOT lanes on north I-405 have shown that adding an express toll lane performs better than adding a general purpose lane, with the express toll lane moving 70 percent more vehicles at 45 miles per hour (mph) when compared to no improvements and a general purpose lane 10 percent more.¹⁷

2. Revenue Potential

SR 167 tolls are included in the 16-year financial plan, with the assumption that the tolls are extended through 2025. Other congestion toll revenues will be determined as part of WSDOT's tolling studies.

3. Implementation Considerations

a. Administration

The tolls have been electronically collected, with taxpayers able to understand and to comply with the tolls.

b. Collection Cost

See discussion under highway facility tolls. As shown in the exhibit below, collection costs for the SR 167 HOT Lanes in FY 2008 were more than the revenues generated.

Exhibit 7.
SR 167 HOT Lanes FY 2008 Revenues & Operating Expenses

	\$	% of Total Revenue and Income
Operating Revenues		
Tolls	49,221	
Violation Penalties	-	
Transponder Sales	45,961	
Miscellaneous Revenue	-	
Subtotal	95,182	
Non-operating Income		
Prior Period Recoveries	-	
Interest Income	134,171	
Subtotal	134,171	
Total - Revenue and Income	229,353	
Operating Expenditures		
Personal Service Contracts	25,054	11%
Goods and Services		
Toll Operator Contract	196,366	86%
Insurance	-	0%
Credit Card and Bank Fees	-	0%

¹⁶ Washington State Department of Transportation, SR 167 High Occupancy Toll (HOT) Lanes Pilot Project, May 3, 2008-December 31, 2008 Eight Month Performance Summary, January 7, 2008.

¹⁷ www.WSDOT.wa.gov/Tolling/EastsideCorridor

	\$	% of Total Revenue and Income
Washington State Patrol	89,288	39%
Other	111,699	49%
Travel	349	0%
Capital Outlays	73,657	32%
Salaries and Benefits	127,371	56%
Total - Operating Expenditures	623,784	272%

c. Funding Constraints

As discussed under highway facility tolls, the use of congestion tolls is constrained by legislative direction. In San Diego, HOT lane revenue is used to fund transit.

F. Highway Systemwide Pricing: Vehicle Miles Traveled (VMT) Pricing

A vehicle miles traveled (VMT) fee has been recommended as a preferred method of replacing the federal reliance on the motor vehicle fuel tax for transportation funding¹⁸ and was recommended as a primary long-term funding method in the 2007 JTC *Long-Term Transportation Financing Study*. It has also been the subject of a pilot study in Oregon and is the subject of a University of Iowa study in cities in six states, including California, Idaho, Iowa, Maryland, North Carolina, and Texas.

Three options have been identified as a high priority for further analysis:

Option 1: Impose state VMT fee

- The 2007 JTC *Long Term Transportation Financing Study* recommended transitioning to a VMT fee to replace the motor vehicle fuel tax, with timing dependent on how quickly the fuel tax erodes in value and on the development of technology to collect VMT fees.
- A VMT fee should be indexed to keep pace with inflation or transportation costs.
- VMT fees are to be imposed in the Netherlands by 2014 and in Denmark by 2016.

Option 2: Vary the VMT fee by congestion and/or vehicle characteristics

- A VMT fee that varies by the level of congestion could contribute to transportation system performance.
- A VMT fee that varies by vehicle characteristics could help encourage the use of PHEV or other low emission vehicles. "A simple VMT fee would provide no incentives for customers to buy vehicles with higher fuel economy ratings because the fee would depend only on mileage. Concern about a lack of incentives for reducing

¹⁸ See *Implementing Alternative Transportation Funding Methods: Draft White Paper on Policy Initiatives*, p. 12-13.

carbon emissions is one reason that some observers caution against a premature commitment to plan for the full substitution of the gas tax with user-based fees.”¹⁹

- A VMT fee based on congestion would also raise the question of whether a portion of such fees should be directed to transit to provide taxpayers wanting to reduce their VMT fee with an alternative to driving.

Option 3: Vary the VMT fee by road type/location

- Drivers who live in non-urban areas who drive long distances and have limited access to transit or other multi-modal transportation options express reservations about the equity of a VMT fee.²⁰
- Varying the VMT by road type - such as limiting it to state routes, arterials, or other major roads – or by road location might help alleviate this concern.

1. Evaluation Framework

A VMT fee could, if indexed, keep pace with inflation, although a reduction in VMT could erode the its stability. A VMT fee would reflect use of the system by residents, but would not reflect use by non-residents. Absent federal action there is no way to charge out-of-state users of the highway system. A VMT fee is anticipated to positively affect transportation system performance, particularly if linked to congestion pricing.

A VMT fee is anticipated to have a positive effect on the reduction of GHG gases, particularly if linked to the type of vehicle. A VMT fee would reflect user benefits and user impact, except for out-of-state users, and could vary by geographic location. The legislature could direct a stream of VMT fee revenues to local jurisdictions and could provide an opportunity for additional fees at the option of local jurisdictions.

2. Revenue

A flat VMT fee of \$0.01 per mile would yield approximately \$10 billion over the 16-year period.

3. Implementation Considerations

Unlike other funding alternatives, implementation considerations are the primary issue with a VMT fee, especially if implemented without a federal VMT. This discussion assumes that, absent federal action or the creation of an inter-state compact analogous to the Streamlined Sales and Use Tax Agreement, there would not be a way to collect fees from out-of-state users of the Washington state highway system.

a. Administration/Fee Collection

The collection of a VMT fee is a key concern. Two choices are:

1. Self-Reporting

¹⁹ National Transportation Policy Project, *Performance Driven: A New Vision for U.S. Transportation Policy*, June 2009, p. 95 and p. 99.

²⁰ Texas Transportation Institute, *Feasibility of Mileage-Based User Fees: Application in Rural/Small Urban Areas of Northeast Texas*, Oct. 31, 2008, p. 8.

One option for collecting a VMT fee is to have taxpayers self-report the mileage they drive. This could be then audited against the odometer reading when the title to the car is transferred. The American Association of State Highway and Transportation Officials (AASHTO) has recommended that if a VMT fee is to be part of the long-term solution to federal transportation funding, that Congress in the short term should consider developing a simple highway user fee option based on self-reporting of annual vehicle miles traveled that could be collected along with annual vehicle registration fees.²¹

A self-reported VMT would have the following considerations:

- Vehicle miles driven outside of Washington state: Unless the fee was attached to all vehicle miles driven, there would be no way for the state to audit the reported mileage.
- Vehicles sold or transferred out of state: The state would have to develop a way to secure reports on vehicles that were sold out of state that included a final odometer reading.
- PHEV vehicles: The state could consider adding a self-reported VMT fee for PHEV vehicles, particularly if it elects not to tax the fuel source for these vehicles.

2. On-Board Technology/Global Positioning System (GPS)

The Oregon pilot project and the University of Iowa study examined ways to use on-board technology combined with GPS technology to determine vehicle miles traveled and the associated fee. In the Oregon pilot project, the VMT fee was collected at the pump in lieu of gas tax. In the University of Iowa study, which is currently in field testing, participants are being billed with varying degrees of information. At one extreme the billing statement will show the vehicle's total mileage and fees for travel during the statement cycle and at the other the statement will include complete trip detail for all travel during the statement cycle.

Administration issues with regard to collecting the VMT via on-board technology and GPS are:

- Privacy: Systems are being developed that ensure privacy. For example, systems are being tested that delete the travel data once it is billed. If billing statements include complete trip information, there will be a greater concern about governmental awareness of individual trips.
- Cost: Transaction, technology and administrative costs are likely to be high unless federal requirements for on-board collection systems are established and/or a national system with inter-state standards is established.

Public acceptance of a VMT fee is an issue for mandatory collection through either self-reporting or by on-board technology/GPS systems. A 2006 poll of California voters found that while 40 percent of likely voters thought that what people pay in taxes and fees for transportation projects should take

²¹ American Association of State Highway and Transportation Officials, *Finance and Funding Legislative Recommendations*, 2008, p. 5.

into account how much people drive, of 14 funding methods polled the least favored, with 23 percent in favor, was replacing the 18 cpg fuel tax with a 1cent/mile mileage fee.²²

Compounding the problem of public acceptance is the lack of detailed information at the local level about vehicle miles traveled. In Washington state information on miles traveled generated by county, let alone, city residents is not available. If a VMT fee were to completely replace the motor vehicle fuel tax at some time in the future, either a distribution formula based on assumed miles traveled in counties and cities would have to be developed or distribution could be done based on actual miles traveled on county and city roads if collection were based on an on-board technology/GPS system.

b. Funding Constraints

A VMT fee would not be subject to the 18th amendment and would be available to fund a variety of transportation choices.

G. Highway Systemwide Pricing – Truck Weight/Vehicle Miles Traveled Pricing

In Washington State trucks pay an annual license fee that depends on gross weight, which is discussed below. For trucks involved in interstate commerce, the amount of the fee is prorated by the miles driven in Washington State under the International Registration Plan.

In Germany, Switzerland, and Austria, VMT fees for trucks are in place. In 2011, the Netherlands anticipates a VMT fee for trucks and Denmark will institute such a fee in 2014.

In Oregon trucks pay a weight-mile tax instead of fuel tax. Illinois has a VMT weight tax as an optional tax for trucks that drive low miles and are only operated in the state of Illinois. In Kentucky, New Mexico and New York trucks pay a mileage fee in addition to fuel tax, although the fuel tax rate for diesel is less than the rate charged for gasoline in Kentucky and New York.²³ The existing weight mileage fees are not indexed, but if implemented in Washington the fee could be indexed to keep pace with inflation or increases in transportation costs.

**Exhibit 8.
 State Vehicle Weight Mileage Fee Rates**

State	Weight Mileage Fee Rate	Diesel & Gasoline Fuel Tax
Illinois	<ul style="list-style-type: none"> Registration option only for trucks that drive low miles and that drive only in the state Allows a guaranteed number of miles (5,000 to 7,000 miles depending on weight) 	<ul style="list-style-type: none"> 20.1 cpg for gasoline 22.6 cpg for diesel

²² Mineta Transportation Institute, *Transportation Financing Opportunities for the State of California*, Oct. 2006, Appendix A Survey Results and p. 11 of the Executive Summary.

²³ In Idaho the legislature repealed its truck weight-mileage fee based on a court ruling that Idaho's system discriminated against interstate trucking companies by having reduced weight-mile tax for natural resource commodities. These commodities included: farm (not for hire), logs, pulpwood, stull, poles, piling, rough lumber, ores, ore concentrates, sand and gravel, and livestock

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State	Weight Mileage Fee Rate	Diesel & Gasoline Fuel Tax
	<ul style="list-style-type: none"> • Per mile cost for miles driven in excess of the guaranteed amount ranges from 2.6 cpg to 27.5 cpg depending on truck weight 	
Kentucky	<ul style="list-style-type: none"> • 2.85 cents per mile for all vehicles having a combined gross weight or licensed weight in excess of 59,999 pounds. 	<ul style="list-style-type: none"> • 18 cpg for diesel • 21 cpg for gasoline
New Mexico	<ul style="list-style-type: none"> • Rates based on a full-haul or one-way haul basis • Rates vary from a low of 0.734 cents per mile for a one-way haul rate for a gross weight truck of 26,001-28,000 pounds to a high of 4.378 cents per mile for a full haul rate for a gross weight truck of 78,001 to 80,000 pounds 	<ul style="list-style-type: none"> • 22.875 cpg for diesel • 18.875 cpg for gasoline
New York	<ul style="list-style-type: none"> • Varies based on weight and whether the taxpayer is using a laden or non-laden calculation method. • Rates vary from a low of 0.04 cents per mile for non-thruway travel for unloaded weight to 5.85 cents per mile for laden trucks with gross weight of 78,001 to 80,000 pounds. After 80,000 pounds a 0.03 cents per mile per ton and fraction thereof is added to the fee 	<ul style="list-style-type: none"> • 22.65 cpg for diesel • 24.4 cpg for gasoline
Oregon	<ul style="list-style-type: none"> • Rates for trucks from 26,001 gross weight to 80,000 pounds range from a low of 0.4 cents 	<ul style="list-style-type: none"> • No diesel fuel tax • 24.0 cpg for gasoline

State	Weight Mileage Fee Rate	Diesel & Gasoline Fuel Tax
	<p>per miles to a high of 13.16 cents per mile</p> <ul style="list-style-type: none"> • Rates for trucks over 80,000 pounds, vary by the number of axles (5 to 9 or more) with rates ranging from a low of 11.62 cents per mile to a high of 18.51 cents per mile 	

Source: Gasoline and diesel tax rates – Federal Highway Administration 2008 tax tables. Source mileage rates – state web sites.

1. Evaluation Framework

A truck weight mileage fee, if indexed, could keep pace with inflationary cost increases. It could be linked to freight investments and would reflect use and impacts on the transportation system. The state legislature could direct a portion of the revenue to local jurisdictions, but it is not practical to have a local option as an addition to the tax.

2. Revenue Potential

Not yet estimated.

3. Implementation Considerations

a. Administration

The fee would be administered by DOL. Its administration would require the establishment of rules and the collection of miles by weight class state fees for all trucks over the lowest limit established for collection of the fee.

b. Collection Cost

Not yet estimated, but once established the collection cost should be relatively low.

c. Funding Constraints

This funding method would not be subject to the 18th amendment, although the legislature may elect to direct the funds generated to freight improvements.

H. Ferry Fares

At the end of the 2009-25 16-year financial plan Washington State Ferries (WSF) accounts have a combined deficit of \$1,064.4 million, of which \$936.3 million or 88 percent is from the capital account and \$128.1 million or 12 percent is from the operations account. The capital gap is anticipated to grow even larger in the period immediately following 2025 due to fleet replacement needs.²⁴

²⁴ See *Implementing Alternative Transportation Funding Methods: Draft White Paper on Policy Initiatives*, p. 4041.

Options considered high priority for further analysis include those that could increase operations funding and those that could increase capital funding. Capital funding options could be further restricted to the creation of a special account for vessel replacement – the most critical capital need.

Operations Funding Options

Option 1: Increase Rates to Increase Farebox Recovery

- Farebox recovery is the total operations cost divided by revenues from fares, concessions and other earned income. Ninety-eight percent (98%) of income is from fares.
- Farebox recovery is anticipated to average 76 percent over the 16 year plan period, assuming annual fare increases of 2.5 percent.

Option 2: Fuel Surcharge

- A fuel surcharge to balance surges in fuel prices is under consideration.
- The legislature provided the following direction to WSF in the 2009-11 transportation budget (ESSB 5352): If the department proposes a fuel surcharge, the department must evaluate other cost savings and fuel price stabilization strategies that would be implemented before the imposition of a fuel surcharge.

Option 3: Adaptive Management Options

- RCW 47.60.290 requires WSF to consider, when developing fare proposals, options for using pricing to level vehicle peak demand and to increase off-peak ridership.
- Options that WSF has identified that might be used in the medium term that could meet this legislative direction are:²⁵
 - Differential vehicle and passenger fare increases
 - Additional seasonal surcharge for July and August – which was considered and not adopted by the Washington State Transportation Commission in setting fares effective Oct. 2009
 - Small car discounts
- Options that WSF has identified that might be used in the long term that could meet this legislative direction are:
 - Time of day pricing for vehicles
 - Progressive pricing for larger vehicles
 - Modifications to frequent vehicle customer prices
 - Variable pricing for routes within travel sheds.

Option 4: Non-resident Pricing

²⁵ Washington State Ferries Long Range Plan identified other pricing strategies that are not evaluated including: congestion pricing for vehicles, progressive pricing for larger vehicles, modifications to frequent vehicle customer prices, and variable pricing for routes within travel sheds.

- Vehicles registered with out-of-state licenses could be charged an additional toll

Option 5: Reservation Surcharge

- If a vehicle reservation system is implemented, it is anticipated that it will not require a surcharge to prevent customers from trying to go on a non-reserved basis to avoid paying the surcharge. A non-refundable deposit would be applicable for no-shows.
- An option would be to have a surcharge for the reservation.

Capital Funding Options

Option 6: Capital Surcharge on Fares

- RCW 47.60.290 states that if WSF's operating revenues are used to support capital, the support must be specifically identified in fares.
- A capital surcharge could be used to fund a vessel replacement fund.

Option 7: Naming Rights Vessels

- The 2009 transportation budget (ESSB 5352) stated that the WSTC may name state ferry vessels consistent with its authority to name state transportation facilities under RCW 47.01.420. When naming or renaming state ferry vessels, the commission shall investigate selling the naming rights and shall make recommendations to the legislature regarding this option.
- WSTC is currently reviewing naming options and potential revenues

Option 8: Special Purpose Lottery

- Lottery proceeds currently go to the Education Construction Account, the General Fund, the Economic Development Reserve Account, the Problem Gambling Account, the Exhibition Center Account (Qwest Field), and the Baseball Stadium Account - King County (Safeco Field).
- Distributions to the Baseball Stadium account will stop when the bonds are retired, which may be as soon as 2012 but no later than 2016.
- Distributions to the Exhibition Center Account will stop when the bonds are retired, or December 31, 2020, whichever comes first.
- A lottery to support vessel construction could be a special purpose lottery, additional distribution, or replace retiring distributions to the baseball stadium and the exhibition center accounts.

1. Evaluation Framework

The options that could increase operations funding would provide additional revenues and stability to WSF. Adaptive management options are intended in part to improve the performance of the ferry system by leveling and dispersing peak vehicle demand.

The capital funding options would primarily increase revenue and the stability of the system.

2. Revenue Potential

The revenue estimates provided below assume the following:

- Fuel surcharge – Estimate based on March 2009 motor vehicle fuel forecast
- Increasing farebox recovery – Amount shown is for every 1 percent increase in fares, with the amount shown being the increased revenues if fares were raised 3.5 percent per year rather than 2.5 percent.
- Reservation surcharge – Assumes 50 percent of vehicles have a reservation.
- Capital surcharge – Amount assumes a surcharge of \$1.00 per vehicle and \$0.50 for passengers, based on the March 2009 ridership forecast. The surcharge would cover approximately 40 percent of the vessel replacement costs included in the 16-year financial plan.

**Exhibit 9.
Ferry Fare Options – 16 year Revenues**

Ferry Fare Options	Revenue Stream – 16 Year
Operations Funding Method Options	
Option 1. Increase rates to increase farebox recovery	\$42 million/1 percent
Option 2. Fuel surcharge	\$108 million
Option 3. Adaptive management options	Intended to be revenue neutral
Differential vehicle and passenger fare increases	
Additional seasonal surcharge July and August	
Small car discounts	
Time of day pricing for vehicles	
Progressive pricing for vehicles	
Modifications to frequent vehicle customer prices	
Variable pricing for routes within travel sheds	
Option 4: Non-resident pricing	Uncertain, likely small revenue impact
Option 5: Reservation surcharge	\$13 million for each 1%
Capital Funding Methods Options	
Option 6: Capital surcharge on fares	\$347 million
Option 7: Vessel naming rights	TBD
Option 8: Lottery	TBD

3. Implementation Considerations

a. Administration

Alternatives that do not modify the structure of ferry fares should be easy for the public to understand and comply. Acceptance of adaptive management options will require more explanation for public acceptance, although compliance should be relatively easy since the fares are collected at the tollbooth.

b. Collection Cost

Costs of collecting ferry fares are being reviewed in association with a study of a vehicle reservation system. Additional costs, if any, for implementing other adaptive management pricing changes have not been analyzed.

c. Funding Constraints

Ferry fares are by legislative direction restricted to the Puget Sound Ferries Operations Account. A capital surcharge, specifically identified in the fare structure, could benefit the Puget Sound Ferries Capital Account. Ferry fares are not subject to the 18th amendment and could, if permitted by the legislature, be used to fund other transportation choices such as transit service to the terminals.

I. Passenger Rail – Amtrak Cascades Service

The states of Washington and Oregon, Amtrak, Sound Transit, the Province of British Columbia, the United States and Canadian federal governments, railroads, other participating organizations and agencies, and passengers that use the service are all direct or indirect sources of funding to the Amtrak Cascades.

The state does not have a dedicated fund source for rail, with operating and capital funding coming from the multi-modal account. The multi-modal account receives funds that are not subject to the 18th amendment including revenues from motor vehicle licenses, permits and fees; and from the rental and motor vehicle sales taxes. Money from the multi-modal account can be used for high capacity transit, aviation, passenger and freight rail, and new transportation technologies, as well as for highway purposes.

Washington is one of 14 states to provide funds to Amtrak for intercity passenger rail service. Funding methods used by other states for passenger rail service including the Amtrak subsidy is shown in the exhibit below. California funds its passenger rail Amtrak subsidy through the sales tax on gasoline and diesel and three states, like Washington, rely on their multi-modal funds which do not include gas tax revenues. Some states, including Oregon, Illinois and New York use the general fund to support passenger rail, much in the way that Washington State transit agencies are reliant on local option sales tax revenue. Some states that do not restrict gas tax proceeds to highway uses, such as North Carolina, use general highway funds for the Amtrak subsidy.

**Exhibit 10.
State Passenger Rail Funding Sources**

State	Funding Source – Passenger Rail
California	<ul style="list-style-type: none"> • <i>Sales taxes on diesel and gasoline</i> – largest source. State Public Transportation Fund <ul style="list-style-type: none"> ○ Pays Amtrak annual subsidy • Motor vehicle fuel taxes – capital projects in the state transportation improvement plan – State Highway Fund • Voter approved bonds <ul style="list-style-type: none"> ○ Highway Safety, Traffic Reduction, Air Quality and Port Security Bond - 2006 ○ Passenger Rail and Clean Air Bond Act - 1990
Illinois	<ul style="list-style-type: none"> • <i>General fund</i> <ul style="list-style-type: none"> ○ Pays Amtrak annual subsidy
Maine	<ul style="list-style-type: none"> •
Michigan	<ul style="list-style-type: none"> • <i>Comprehensive Transportation Fund (Multi-modal fund)</i> <ul style="list-style-type: none"> ○ Pays Amtrak annual subsidy
Missouri	<ul style="list-style-type: none"> • <i>Multi-modal operations fund</i>

	<ul style="list-style-type: none"> ○ Pays Amtrak annual subsidy
New York	<ul style="list-style-type: none"> ● <i>General state revenues</i> – rail service preservation program <ul style="list-style-type: none"> ○ Pays Amtrak annual subsidy ○ \$20 million annually for passenger and freight rail capital projects ● Voter approved bonds <ul style="list-style-type: none"> ○ Rebuild and Renew New York Transportation Bond - 2005 ○ Transportation Capital Facilities Bond - 1967 ● Multi-modal program – funded by bond sales by the New York Thruway Authority or the New York State Dormitory Authority
North Carolina	<ul style="list-style-type: none"> ● <i>Transportation Highway Fund</i> <ul style="list-style-type: none"> ○ Pays Amtrak annual subsidy
Oklahoma	<ul style="list-style-type: none"> ●
Oregon	<ul style="list-style-type: none"> ● <i>General fund</i> <ul style="list-style-type: none"> ○ Pays Amtrak annual subsidy ○ Related Thruway motor coach service
Pennsylvania	<ul style="list-style-type: none"> ● <i>Rail Passenger Operating Program</i> <ul style="list-style-type: none"> ○ Funds Amtrak payment ● State bonds - capital
Texas	<ul style="list-style-type: none"> ●
Vermont	<ul style="list-style-type: none"> ●
Washington	<ul style="list-style-type: none"> ● <i>Multi-modal fund</i> <ul style="list-style-type: none"> ○ Funds Amtrak payment
Wisconsin	<ul style="list-style-type: none"> ● <i>Passenger Rail Assistance Program – Transportation Fund</i> <ul style="list-style-type: none"> ○ Pays Amtrak annual subsidy ● State bonds - capital

Operating Funds

The Amtrak Cascades serves 466 route miles between Eugene, Oregon, and Vancouver, B.C. Amtrak provides operating funds for one daily round-trip route, Oregon provides funding for two routes, and Washington, through WSDOT, provides for four roundtrips. Amtrak uses five European-designed, *Talgo* trains for daily operations, two owned by Amtrak and the remainder by Washington.²⁶ A second round-trip between Seattle and Vancouver B.C. started August 19, 2009 and will run as a pilot project through the Winter Olympics and Paralympics in 2010. Ridership on Washington State funded trains was 521,000 or 67 percent of total Cascades ridership.²⁷

In Federal Fiscal Year (FFY) 2008, state-supported Amtrak Cascades trains had a farebox recovery of 54 percent. Total taxpayer subsidy for Washington state-supported Amtrak Cascades trains (4 round-trips) was \$14.6 million in FFY 2008.²⁸ State support is the total program costs minus operational revenue received from tickets, food, and other services.

²⁶ Washington State Department of Transportation, *Gray Notebook* June, 2009, p. 38.

²⁷ Washington State Department of Transportation, *Amtrak Cascades 2008 Performance Report*, p. 2.

²⁸ *Gray Notebook*, December 31, 2008, p. 29.

The 2006 Washington State Long Range Plan for Amtrak Cascades assumes that farebox recovery will increase, averaging 75 percent over the next 20 year period, and assumes fares rise only with inflation and to meet projected operating costs.

The option identified as a high priority for further analysis for passenger-rail operations funding is:

Option 1: Increase fares to increase farebox recovery

- Fares are established in collaboration between Amtrak and WSDOT, with WSDOT having the final determination on the state supported trips.
- Fares have been established primarily based on market analysis undertaken by Amtrak.
- Revenues is estimated based on a “revenue neutral policy, which means that revenue estimates reflect no change in price except adjustments for inflation and change in operation cost.”²⁹
- Projected increases in farebox recovery are the result of increased ridership and do not reflect price adjustments as service and on-time reliability improves with projected capital investments.

Capital Funds

Capital funds for Cascades service from Portland to Seattle are provided by BNSF Railway Company, the State of Washington, Amtrak, non-Amtrak federal funds, Sound Transit and the Federal Transit Administration, and Oregon (from Union Station to the Columbia River). Between 1994 and 2007, the State of Washington made \$124.4 million in capital investments in Cascades, which represented 17 percent of a total of \$717.2 million in Cascade capital investments. The largest investment, of \$284.3 million or 40 percent of the total were in capacity improvements between Everett and Tacoma made by Sound Transit and the Federal Transit Administration to fund improvements related to the Sounder service.³⁰

The Pacific Northwest Rail Corridor is one of the 11 federally designed high speed rail corridors, extending from Eugene Oregon to Vancouver BC. The American Recovery and Reinvestment Act (ARRA) passed in February 2009 includes \$8 billion of federal funding for high speed rail and represents the first federal investments in high speed passenger rail outside the northeast corridor.

In August 2009, the WSDOT submitted grant applications for \$439.98 million in funding for Track 1 projects, which are ready to go projects that can be completed within two years of obligation and have independent utility. Track 1 projects can be 100 percent federally funded. If approved, these projects would allow for the addition of one round-trip per day between Seattle and Portland.

Track 2 projects, which are also eligible for 100 percent federal funding, are high speed rail corridor projects that bring a benefit greater than the sum of individual parts. Applications for Track 2 projects are due by Oct. 2, 2009. Track 2 projects are anticipated to allow for the addition of 3 more round-trips per day for a total of four more per day with the Track 1 applications.

The option identified as a high priority for further analysis for passenger-rail capital funding is:

²⁹ Washington State Department of Transportation, *Amtrak Cascades Mid-Range Plan*, December, 2008. p. 7-8.

³⁰ *Ibid.*, p. 10-3.

Option 2: Add a capital surcharge to fares.

1. Evaluation Framework

Both options that could increase would provide additional revenues and stability to the Amtrak Cascades service and would reflect use of the service.

2. Revenue Potential

The revenue estimates provided below is based on the current four round-trips subsidized by WSDOT. Additional round-trips that may result if the Federal AARP funding is approved are not included.

- Increasing farebox recovery – Amount shown is for every 1 percent increase in fares. Revenues would go to Amtrak, but would be used to reduce the subsidy provided by WSDOT.
- Capital surcharge – Not yet determined

3. Implementation Considerations

a. Administration

Fares are collected by Amtrak and are easy for the traveling public to understand and comply with.

b. Collection Cost

Fares are collected by Amtrak and are part of the costs included in the subsidy calculations for WSDOT.

c. Funding Constraints

Revenue would be collected by Amtrak and limited to use on the Cascade Service.

I. Off-Road Use Fee

The current off-road vehicle use permit fee applies to all off-road vehicle owners. The fee is \$18 for an annual permit, \$7.00 for a 60-day temporary permit, and \$10.00 for a transfer fee. The rate was last raised in 2004.

Eighty-two percent (82%) of the biennial \$3.1 million from the fee is deposited in the Nonhighway and Off-Road Vehicle Activities account in the Outdoor Recreation Account in the Wildlife and Natural Resources Fund and administered by the Department of Natural Resources. Eighteen percent (18%) is deposited in the motor vehicle account, with the revenue intended to cover the Department of Licensing's administrative costs.³¹

Two options have been identified for further analysis:

Option 1: Increase the off-road use fee

³¹ RCW 46.09.170 states: The moneys collected by the department under this chapter shall be distributed from time to time but at least once a year in the following manner: The department shall retain enough money to cover expenses incurred in the administration of this chapter: PROVIDED, That such retention shall never exceed eighteen percent of fees collected. The remaining moneys shall be distributed for ORV recreation facilities by the board in accordance with RCW 46.09.170(2)(d)(ii)(A).

- If doubled, the fee would generate an additional \$25.3 million in revenue over the 16-year plan period.
- The off-road vehicle use permit could also be indexed. If indexed to the CPI, it would yield an additional \$15.0 million over the 16-year plan period.
- The history of the fee is outlined below.
 - 1971-2001: \$ 5.00 new & renewal; \$1.00 transfer fee; \$2.00 nonresident/temporary use
 - 2002: \$ 5.00 new & renewal; \$5.00 transfer fee; \$2.00 temporary use
 - 2004: \$ 18.00 new & renewal; \$10.00 transfer fee; \$7.00 temporary use

Option 2: Dedicate all revenues to the Nonhighway and Off-Road Vehicle Activities

- If 100 percent of the fees were devoted the Nonhighway and off-road vehicle activities account, motor vehicle funds would be reduced by \$4.5 million over 16-years if the fee is not increased. If doubled, motor vehicle funds would be reduced by \$9.0 million.

2. Revenue Potential

The impact on the motor vehicle fund is relatively small. If the fees are doubled, motor vehicle funds would increase by \$4.5 million over 16 year representing the 18 percent that goes to the fund. If indexed, motor vehicle funds would increase by an additional \$2.7 million.

3. Implementation Considerations

a. Administration

The fee is currently collected.

b. Collection Cost

Collection costs should not change if the fee is increased or indexed.

c. Funding Constraints

The use of these funds is restricted by legislative direction to the Nonhighway and Off-Road Vehicle Activities and the Motor Vehicle Fund.