CAMBRIDGE SYSTEMATICS

Long-Term Transportation Financing Study

Executive Summary

prepared for

State of Washington Joint Transportation Committee

prepared by

Cambridge Systematics, Inc.

with

Mercator Advisors, LLC

January 2007

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January 2007

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Executive Summary

This study is sponsored by the Washington State Joint Transportation Committee (WSJTC) and conducted by Cambridge Systematics, Inc. as prime consultant, in association with Mercator Advisors LLC. The study addresses five topics related to existing and new methods for funding and financing statewide transportation needs. These topics are organized into the following five sections of this report:

- **Section 1.0: Motor Fuel Tax Viability –** Compares of Washington State's dependence on fuel taxes with that of other states, the impacts of the State's fuel price fluctuations on revenue, and the forecasted impacts of hybrid and alternative fuel vehicles.
- **Section 2.0: Alternative and Emerging Revenue Sources –** Provides an evaluation of alternative and emerging transportation funding efforts throughout the country and internationally, including vehicle travel pricing and tolling innovation, concession and/or private development of transportation facility improvements, and other funding sources.
- **Section 3.0: Debt Financing Trends and Implications –** Evaluates trends and long-term implications of applying debt financing to complete transportation projects, including both conventional and non-traditional approaches.
- **Section 4.0: Evaluation of State-Distributed Transportation Funds –** Reviews the approaches used by other states to distribute funds to local governments for transportation purposes, such as direct distribution of funds by formula and project grants subject to particular eligibility criteria and priorities.
- **Section 5.0: Recommendations –** Presents recommendations for maintaining the medium- and long-term viability of the State's funding portfolio.

While Cambridge Systematics takes full responsibility for the information and findings in this report, a substantial amount of the work presented here is the result of a partnership between the consulting team and the members of our Working Group. These members are staff from both legislative bodies, the Office of Financial Management (OFM), and Washington State Department of Transportation (WSDOT).[1] Their input was critical to our research and findings. They provided critical understanding of the complexity and nuances of funding transportation in a state that is at the forefront of innovative and effective funding practices.

The complexity, however, is no excuse for confusing stakeholders about the near- and long-term consequences of the State's current funding practices or the

[1] Roster of the JTC Working Group provided under separate cover.

advantages and disadvantages of alternatives. Therefore, we also take responsibility for presenting compelling, understandable solutions. While there are immediate funding problems, many of the biggest challenges for the State will grow more difficult and painful to solve over the next 10, 20, or even 30 years. These challenges seem to hover some distance out in the future, but our goal in this study is to bring all of the issues into sharp focus and present solutions that contend with the political realities, as well as resolve the technical challenges.

MOTOR FUEL TAX VIABILITY

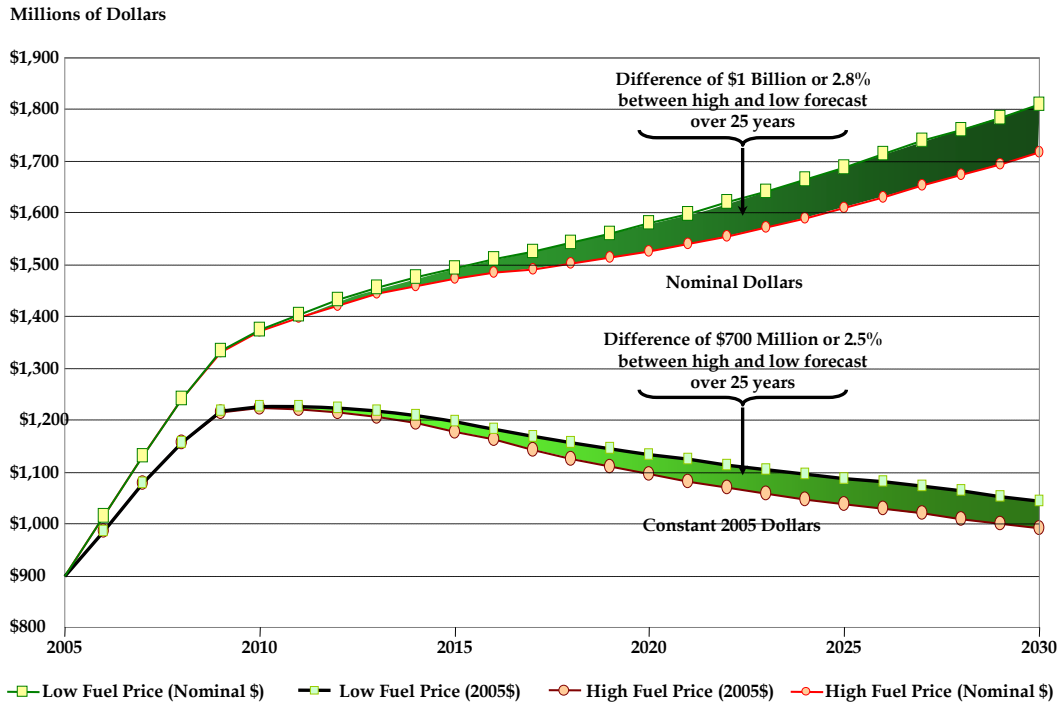
At present, fuel taxes comprise nearly half of state revenues for transportation.[2] The Washington Legislature approved the Nickel funding package in 2003 that increased the tax rate from 23 cents to 28 cents per gallon, and then again 2 years later with passage of the 2005 Partnership funding package, which increased the rate a total of 9.5 cents per gallon to 37.5 cents per gallon in July 2008 or 37 percent measured in nominal dollars. These rates were used to forecast 2 alternative revenue projections: 1) a baseline scenario that assumes motor fuel prices will change from $2.706 per gallon in 2006 to $4.409 in 2030 (annual increase of 2.6 percent), and 2) a high fuel price scenario that assumes the price will reach $6.079 in 2030 (annual increase of 3.9 percent).[3]

The net effect between the high and low fuel price scenarios is shown as the shaded area between the two curves in Figure ES.1. This area represents a cumulative loss of revenue of $1.1 billion over 25 years in nominal dollars or a loss of 2.8 percent (total revenue of $37.0 billion). In constant dollars, this cumulative loss of revenue amounts to $700 million over 25 years (year 2005 constant dollars) or a loss of 2.5 percent. The most significant findings from these projections, however, is the loss in purchasing power shown as the difference between the nominal and constant dollar revenue projections. This difference, whether measured between the high or low projections, will amount to almost $10 billion over 24 years.

[2] This share is net of bond proceeds, which are not considered a source of funding since the debt service for these bonds must be secured from another funding source.

[3] Developed by the U.S. Department of Energy (DOE) on the most recent *Annual Energy Outlook*, February 2006.

Figure ES.1 Motor Fuel Tax Revenue Projections in Nominal vs. Constant Dollars*, 2005 to 2030

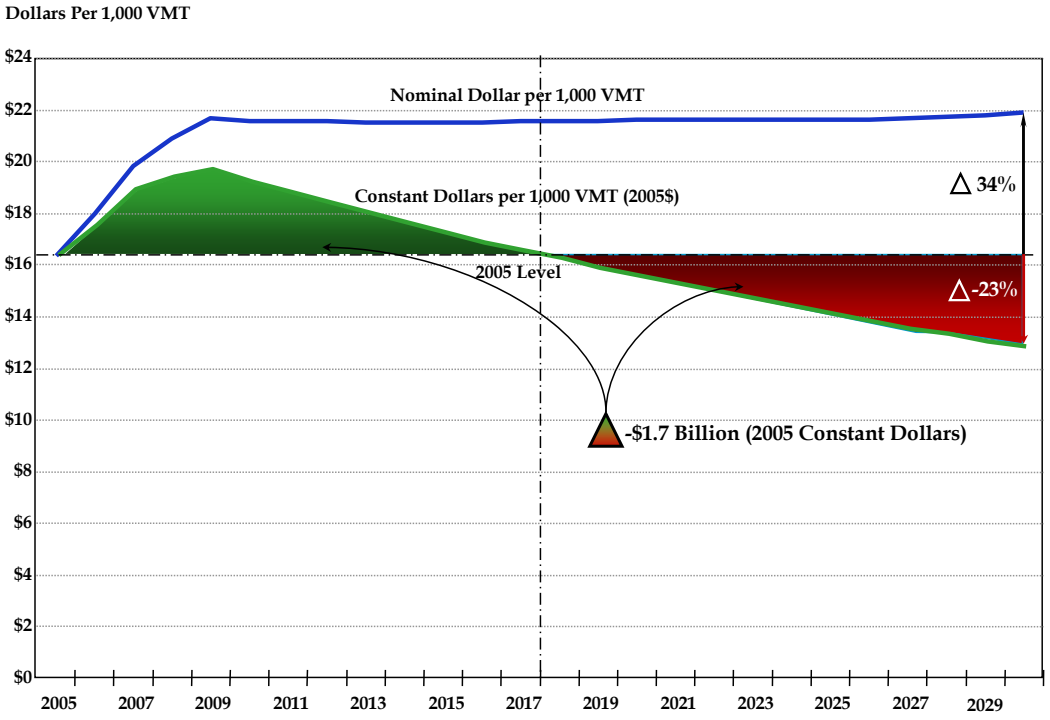


Source: Washington Stae DOT and Cambridge Systematics, Inc.
*Assumes 2.2 percent annual inflation.

A more accurate understanding of the future viability of the motor fuel tax is gained when the total revenues are compared with the projected increase in demand for transportation. Using the baseline projections, Figure ES.2 shows projected motor fuel tax revenue in terms of dollars per 1,000 vehicle-miles traveled (VMT). In nominal dollars, this amount is projected to grow from $16.3 in 2005 to $21.9 in 2030, an increase of 34 percent. In constant 2005 dollars, however, this amount is projected to fall to $12.6 in 2030, a decrease of 23 percent compared to the purchasing power of revenues per 1,000 VMT available in 2005.

The 37.5 cent rate will sustain the fuel tax per 1,000 VMT above the 2005 level for the next 13 years. But from 2018 onward, the State will collect less each year than it did in 2005. From 2005 to 2030, the aggregate revenue will total a net loss of $1.7 billion (in constant 2005 dollars), as shown in the two shaded areas in Figure ES.2, if no further adjustments to the motor fuel tax rate are made.

Figure ES.2 Projected Motor Fuel Tax Revenue Per 1,000 VMT*, 2005 to 2030



Source: Washington State DOT and Cambridge Systematics, Inc.
*Based on average annual inflation of 2.2 percent over the 25-year period.

Given these results, it is clear that even with the significant increases to the fuel tax adopted in the past three years, the State's revenues from fuel tax will diminish to their current level sometime after 2015. The future viability of fuel tax revenues is address in our recommendations (below).

TRENDS AND IMPLICATIONS OF DEBT FINANCING

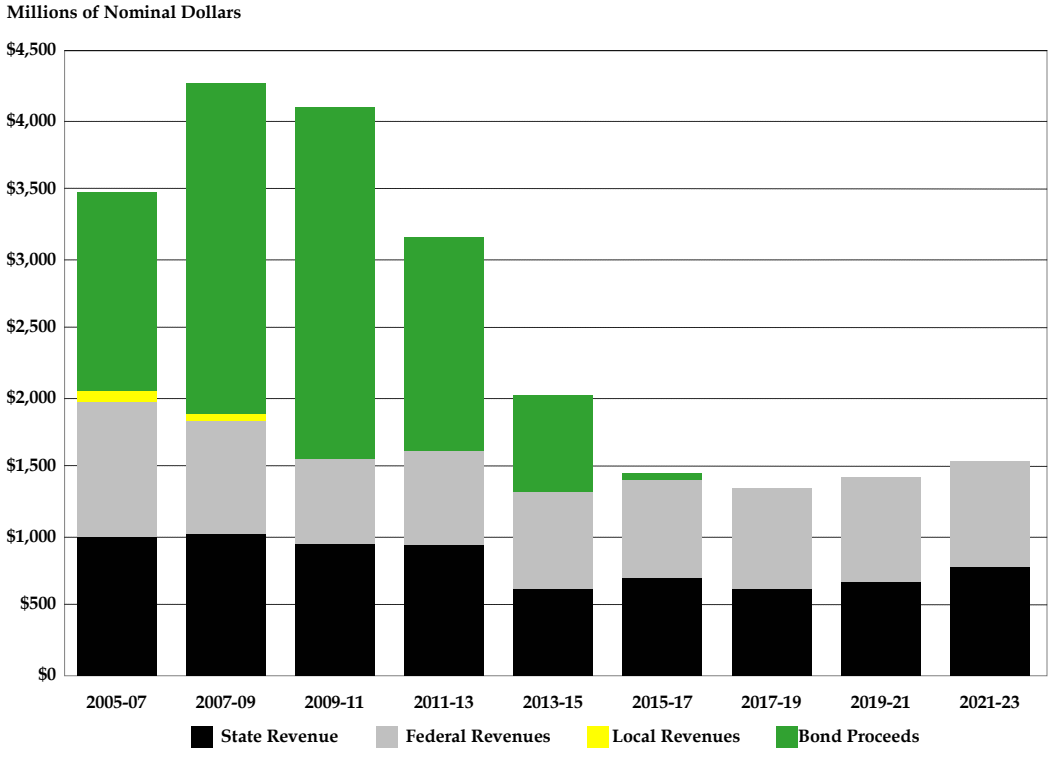
This study examines the use of debt financing as a strategic tool to accelerate state transportation investment in Washington. Section 3.0 describes factors that contributed to a shift away from pay-as-you-go financing and outlines the general scope of the bonding programs approved by the Legislature. It also provides an indication of how the amount of debt issued for highway purposes in Washington compares to other states and presents a discussion of issues related to debt management and financial planning. Finally, the section describes the potential use of long-term asset leases and public-private partnerships to increase or accelerate transportation investment. Brief summaries of only some of the findings are provided here.

To address some of the most critical transportation needs, the State of Washington has embarked upon an ambitious capital investment program. Approximately

430 highway, bridge, ferry, and rail projects totaling over $11 billion are included in transportation funding packages approved by the State Legislature in 2003 and 2005 (the "Funding Packages"). The Funding Packages provide authorization for approximately $7.7 billion of general obligation (G.O.) bonds secured by motor vehicle fuel tax revenue (the "MVFT Bonds") and $349.5 million of G.O. bonds that will be paid from vehicle sales taxes, rental car tax receipts, and other fees (the "Multimodal Bonds"). In addition, over $400 million of MVFT Bonds authorized prior to 2003 are expected to be issued over the next 3 years.

Bond proceeds comprise a significant portion, approximately 45 percent, of the total capital funding currently expected to be allocated by the State of Washington for highway construction and preservation and other transportation infrastructure needs through 2023.[4] Figure ES.3 shows the annual amount of funding for transportation capital projects by source.

Figure ES.3 WSDOT Capital Budget and 16-Year Financial Plan Capital Sources of Funds

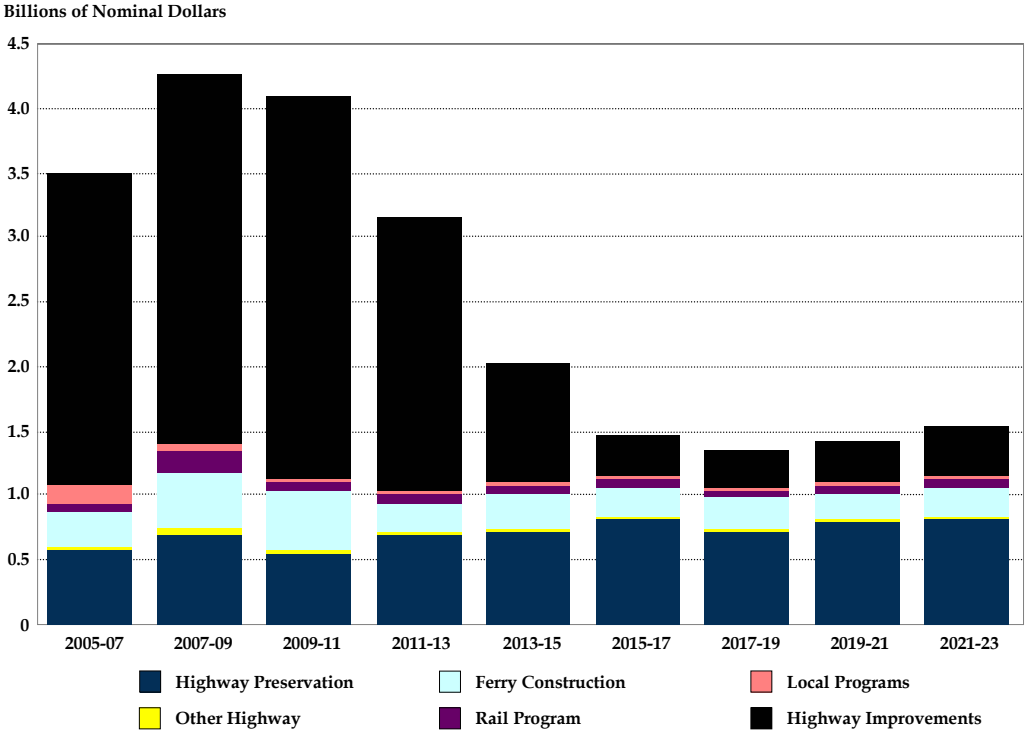


Source: Department of Transportation 2007 to 2009 Capital Budget Request and 16-Year Financial Plan, August 30, 2006.

[4] Department of Transportation 2007 to 2009 Capital Budget Request and 16-Year Financial Plan, August 30, 2006.

The Legislature primarily targeted new construction needs in crafting the Funding Packages. As shown in the Figure ES.4 below, annual resources dedicated to highway preservation and ferry construction do not increase significantly in WSDOT's long-term financial plan.

Figure ES.4 WSDOT Capital Budget and 16-Year Financial Plan Capital Uses of Funds

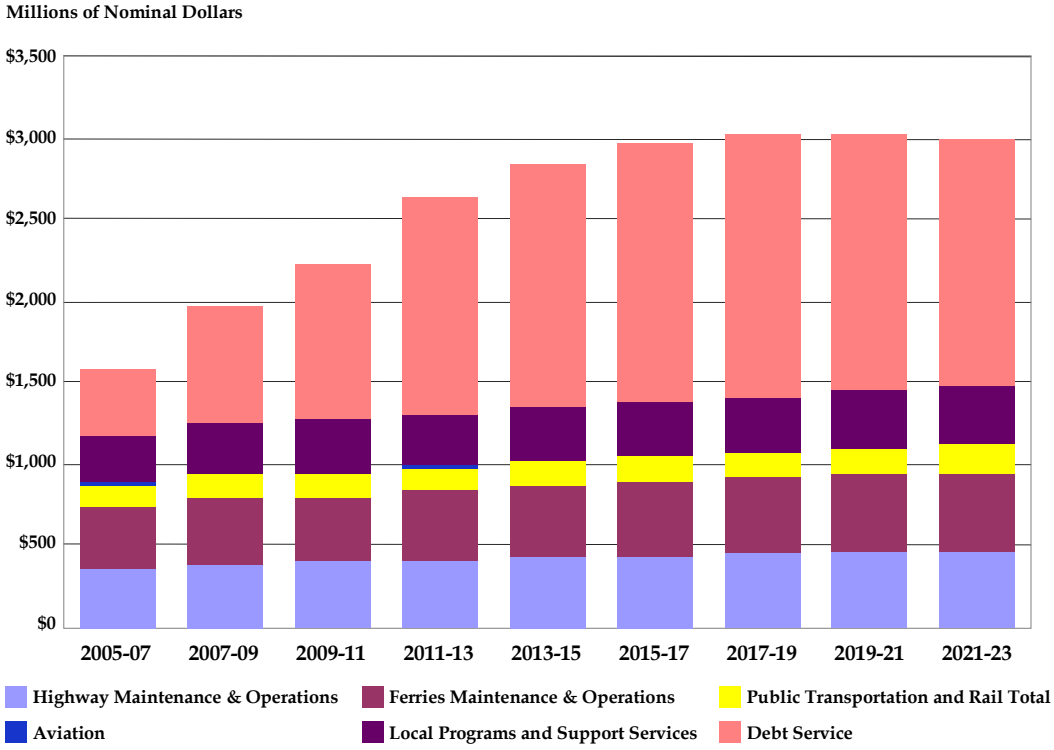


Source: Department of Transportation 2007 to 2009 Capital Budget Request and 16-Year Financial Plan, August 30, 2006.

The Funding Packages include scheduled increases to the state gas tax that will bring the rate to 37.5 cents per gallon by July 1, 2008. The incremental funding from the tax increases allocable to WSDOT will primarily be used to pay debt service on MVFT Bonds. As shown in Figure ES.5, total funds available to WSDOT will increase over time, but the amount budgeted for support services and operation and maintenance of highways and the State Ferry system will remain relatively flat. [5] By the end of the 2011 to 2013 biennium, debt service may comprise over 50 percent of WSDOT's operating budget.

[5] Department of Transportation 2007 to 2009 Operating Budget Request and 16-Year Financial Plan, August 30, 2006.

Figure ES.5 WSDOT Capital Budget and 16-Year Financial Plan Operating Uses of Funds



Source: Department of Transportation 2007 to 2009 Operating Budget Request and 16-Year Financial Plan, August 30, 2006.

Washington is one of a handful of states that pledges its full faith and credit to the payment of transportation bonds secured by motor fuel taxes. The "double-barreled" pledge of both the taxing power of the State and a dedicated revenue stream provides a very cost-effective way to access the capital markets.

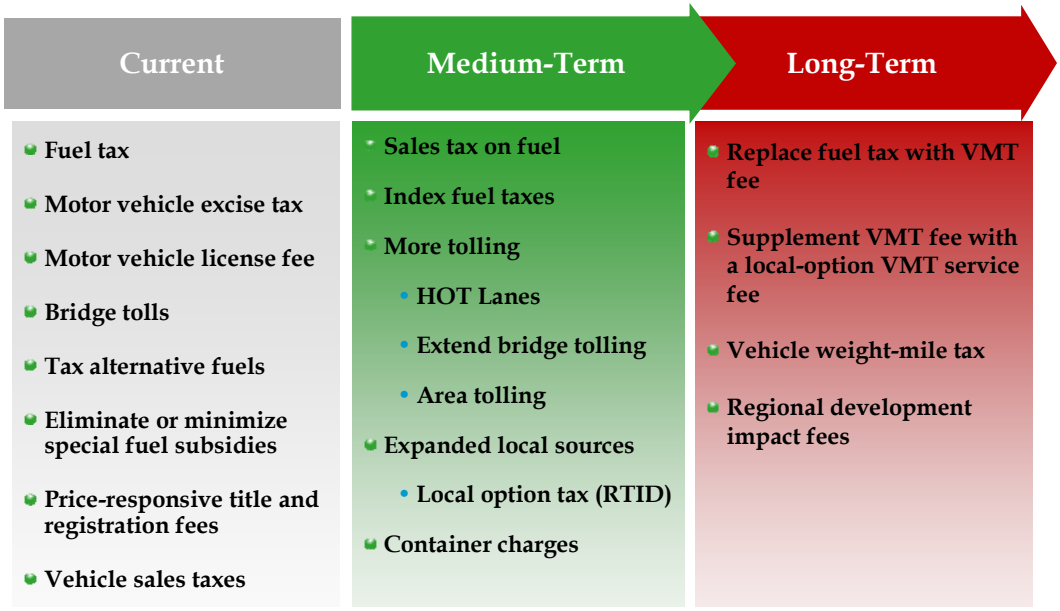
From an investor's perspective, an additional bonds test on MVFT bonds is not needed because of the strength of the State's general obligation pledge (AA/AA1/AA credit ratings) and the fact that revenue is withheld on a monthly basis to ensure sufficient funds are available to make debt service payments. The risks associated with the pledged revenue stream, however, remain. If motor fuel tax revenue collections fall because of a severe economic downturn (or passage of a voter initiative), the impact on WSDOT operations could be significant.

By establishing an informal policy on minimum acceptable debt service coverage, Washington could mitigate the potential risks associated with fluctuations in motor fuel tax revenue and enhance the amount of resources available for pay-as-you-go opportunities.

RECOMMENDATIONS

Our recommendations for a more optimal funding portfolio are divided into two timeframes. The medium-term extends over the next 5 to 15 years, depending on how quickly the State's gas tax receipts are eroded by increasing mileage of the vehicle fleet, usage of non-taxed fuels, and the advancement of technology needed to replace fuel taxes. The transition to long-term funding solutions would overlap with the medium-term recommendations over a 5-year period. Figure ES.6 presents our medium- and long-term recommendations for improving Washington State's funding portfolio and demonstrates significant Legislative leadership by listing the recent increases across a large number of funding sources.

Figure ES.6 Evaluation of Revenue Sources – Sorting Alternatives Into Three Timeframes



Our funding recommendations are intended to match the rising costs of construction, operations, and maintenance as measured in constant dollars and adjusted for increasing demand. Therefore, these funding proposals will result in annual increases to transportation users. In additions, these funding alternatives would be appropriate should the Legislature choose to increase or decrease the amount of transportation revenue that the State collects now.

The imposition of automatic adjustments isolates funding increases (measured on a basis of nominal dollars) from the political process and present significant political challenges. Nevertheless, our analysis of past trends (Sections 1.0 and 2.0) demonstrate that purchasing power of the State's funding portfolio has declined over long periods, punctuated with the voters and Legislature's episodic efforts to recapture some of the lost ground. The lack of success with this

approach to date compels us to recommend automatic indexing of existing and new sources in order to stabilize the true parity of funding available to meet the increasing demand in the future. Although the recommendations are scaled to be revenue-neutral, the Legislature could choose to implement any or all of our recommendations at more aggressive level if it deems current funding insufficient, or scale them back to maintain a lower level of funding.

Medium-Term Recommendations

Our medium-term recommendations are intended to prevent the forecast 23 percent decline in future fuel tax revenues weighted by the VMT over the next 25 years. These are summarized in rough order of effectiveness based on 5 criteria (see Section 1.0).

Index State Motor Fuel Taxes – In the medium term, indexing of the motor fuel tax is the most viable strategy for Washington State to keep the purchasing power of the motor fuel tax from eroding significantly over time. This indexing, however, would not completely offset the erosion caused by increasing VMT associated with higher mileage vehicles. Indexing the fuel tax rate to inflation (2.2 percent annually) starting in 2010 would generate approximately $9.8 billion more by 2030 than would be earned under the flat 37.5 cent Partnership rate. Under the indexed scenario, the fuel tax rate would reach 59.2 cents per gallon in the year 2030. This increase in the nominal rate would maintain the purchasing power of today's 32 cent rate.

Sales Taxes on Motor Fuel – Although this source scores low on the basis of reliability, it scores high on yield. The Legislature could replace some share of the fixed rate fuel excise tax with a sales tax, which is a percentage of the cost of a gallon of fuel. The revenue generated would not track well with the true cost inflation of transportation needs. A 6.5 percent sales tax on motor fuels would generate $16.9 billion in revenue from 2010 to 2030, almost twice what indexing the fuel excise tax would generate.

Container Charges – This source, if applied as a variable fee based on peak-period pricing, has the strong potential to reduce truck-related congestion, but would not generate significant revenues. If applied, however, as a flat $50.00 fee in 2010 (and indexed to inflation), it could generate over $8 billion in revenue from 2010 to 2030. There is uncertainty in this forecast because container fees could divert some container traffic to other West Coast ports.

Tolling Specific Corridors – Many states are looking to tolling as a way to provide additional revenue for transportation projects. The Washington State Transportation Commission has completed its Comprehensive Tolling Study. The study did not propose specific projects for implementation, but it provides examples of high-cost/high-need projects that have potential to generate partial funding for some portion of their cost. The specific improvements and tolling options include the following projects.

- SR 704 Cross Base Highway;
- Snoqualmie Pass Improvements;
- SR 520 and I-90 Bridges over Lake Washington;
- SR 167 and I-405 High-Occupancy Toll (HOT) Lane System: Sumner to Bellevue;
- I-405 North HOT Lanes – SR 520 north to I-5 (Swamp Creek);
- I-5 in Lewis County;
- I-5 and Alaskan Way Viaduct in Seattle; and
- Statewide Truck Tolling.

The amount of dollars that could be generated by the potential projects varies widely. On the low end are the HOT lane projects, which sell the excess capacity in high-occupancy vehicle (HOV) lanes to drivers that are in a hurry to be somewhere. The tolls are dynamically adjusted such that the lanes remain free flowing. Since these toll lanes are only effective during peak periods and the amount of capacity to sell is limited, the revenue potential of these tends to be modest. The Snoqualmie Pass Improvements are at the high end, where tolling could potentially fund the entire project cost.

The revenue stream from these projects could amount to over $26 billion (in nominal dollars) over a 30-year period. The value of that revenue stream if used to issue bonds, however, is less than $4 billion in available funds for construction of these projects today. Public-private partnerships may have the potential to stretch the value of these revenue streams through the use of equity participation rather than debt. Nevertheless, the results show that the estimated tolling streams for all, but one of the illustrative examples (with the possible exceptions of the Snoqualmie Pass Improvements, I-90 Bridge, and statewide truck tolling), contribute only a fraction of the total funding needed. Thus, most of these tolling projects on new facilities create net funding liabilities for the State that will require additional funding from non-toll sources to fully fund the projects.

Long-Term Recommendations

The long-term recommendations are derived from an intense national debate over moving to an entirely new approach to funding transportation. The consensus among most participants in this debate recommends that in the long term, all levels of government charged with funding transportation should move from existing sources to a funding system that charges drivers for the marginal cost of where, when, and how much they drive. In other words, a variable fee for vehicle miles of travel calibrates to the congestion levels. Although this proposal seems to impose a dramatic change in the way transportation is paid for, current fuel tax is more like user fee than tax; albeit a weak one that does not correspond well to the full cost of the service.

Widespread implementation of mileage-based user fees – whether in urbanized areas for congestion pricing and management or statewide as a replacement for gallonage-based taxes – may be technically feasible in the next 10 to 15 years. Time will be needed to equip vehicle fleets with Global Positioning System (GPS) and Geographic Information System (GIS) technology, and to develop reliable and auditable administrative systems. It will be a major challenge nationally to shift from collecting motor fuel taxes from a few thousand wholesalers to collecting user fees from millions of automobile owners.

Nevertheless, mileage-based revenue systems offer the potential of significant benefits. Revenues are more likely to keep pace with population and economic growth. Alternative fuels will not erode mileage-based revenues as they will gallonage-based taxes. Mileage-based user fees will separate fuel use from highway use, removing the conflict with energy and air quality policies. Furthermore, mileage-based system will maintain the long-established political consensus that highways should be funded from user fees and that all users should pay their fair share. Finally and perhaps most important, mileage-based fees will send strong price signals to users and thus better manage the demand in relation to capacity.

A VMT fee system would offer local jurisdictions the opportunity to piggy-back on the state VMT fee and replace all of their funding sources with a local-option VMT fee. This substitution would remove the dependence most local jurisdictions in Washington State have on special and general taxes. In fact, the Puget Sound Regional Council (PSRC) is in the midst of an experiment that is being closely watched around the country; whereby, all freeways and many arterial highways in the central PSRC region are tolled.[6]

A VMT fee of 2.15 cents per mile is projected to generate $33.2 billion in revenue from 2010 to 2030, which is roughly revenue-neutral with the current schedule of motor fuel tax rates. The same VMT fee that starts at 2.15 cents per mile in 2010, but then is indexed to inflation (2.2 percent annually), is projected to generate $42.0 billion in revenue from 2010 to 2030, or an increase of $8.8 billion from the non-indexed VMT fee. Subsection 5.2 (Next Steps) of this report provides some guidance on implementation of VMT fees.

[6] Pryne, Eric, *Tolls Could Cut Congestion, Test Shows*, Seattle Times, Friday, November 24, 2006.