

**REPORT OF  
GREATER BALTIMORE COMMITTEE TRANSPORTATION FINANCING &  
GOVERNANCE TASK FORCE**

**VEHICLE MILES TRAVELED (VMT) TAX**

**May 28, 2009**

This report to the Greater Baltimore Committee's Transportation Financing and Governance Task Force is the second in a series of reports detailing various options for boosting the sagging revenues of Maryland's Transportation Trust Fund.

This report reviews the concept of taxation of vehicle miles traveled (VMT), exploring its potential as an eventual replacement for both the federal and state gas taxes, its various formats, and views at the federal and state levels relating to this concept.

**INTRODUCTION**

The Greater Baltimore Committee (GBC) is a membership organization comprised of businesses, large and small, higher education institutions, foundations and civic organizations throughout the greater Baltimore region – Baltimore City and Anne Arundel, Baltimore, Carroll, Harford and Howard counties. The mission of the GBC is to bring together the minds, experience, and talents of the corporate and civic leadership to develop solutions to problems that negatively impact our region's competitiveness and viability. Frequently, achieving that mission involves addressing issues that are statewide in nature.

For years, the GBC has been a leading advocate for the development of a comprehensive integrated regional transportation system to move goods and services and to provide mobility for our workforce and for all of Greater Baltimore's citizens.

A fundamental component of developing a comprehensive integrated transportation system is the existence of a dedicated funding source that can preserve and maintain our existing transportation assets, meet the expanding needs of a growing region and state, and keep up with the increasing costs of transportation projects brought about by inflation and rising market costs associated with labor and materials.

Sadly, investment in transportation infrastructure and the need to strengthen transportation funding does not often rise to the level of concern with the average voter or elected official until it becomes a crisis. To develop a strong transportation system it is essential that transportation projects be constructed in a timely manner to avoid added congestion and the costs associated from travel delays. Unfortunately in today's scenario, once a transportation project is identified, the time required to complete the planning, design and construction of a project, not to mention addressing political and potential community opposition, results in a project that often does not meet needs or substantially exceeds original cost estimates.

The GBC has been a leading advocate for increased transportation funding since 2002. In the November 2007 special session of the Maryland General Assembly the GBC strongly advocated for an increase to the Transportation Trust Fund (TTF) of at least \$600 million per year. Instead, the state legislature approved a revenue increase in the \$400 million range but rejected a suggested increase in the gasoline tax proposed by the GBC.

This public debate on the need for increased transportation revenues amid the growing demand and congestion highlighted a public policy challenge that must be addressed if our region and state are to move forward in this competitive environment.

Further, the changing dynamics surrounding reducing our reliance on oil and the need to be better stewards of the environment and to reduce greenhouse gas emissions causes our state to view transportation funding from an entirely different prism. No longer does it make sense to principally rely on motor vehicle related charges (gas tax, registration fees, titling taxes, etc.) that are counter-productive to conservation and environmental goals in addition to being non-inflation sensitive.

The need to increase transportation revenues to meet future mobility demands while maintaining a reliance on motor vehicle related assessments when the focus is on small vehicles and reduced gasoline consumption is a funding formula destined to fail.

The need is to look at transportation funding from a “clean slate” with all options being considered. For that reason, the Greater Baltimore Committee has established this private-sector Transportation Financing & Governance Task Force to examine alternative ways of funding transportation to address our future needs.

This project is intended to be bold and ambitious. Its purpose is to educate and drive public education and dialogue to find solutions. It is a project not intended to report on what public opinion polls find is minimally acceptable but is predicated on proposing a solution to our future transportation challenges. Likely, it will produce revenue options that are new non-traditional approaches that will spark sharp debate. This process is intended to ignite public discourse as a result of our efforts to truly think outside of existing political constraints.

In an effort to engage the public, it is our goal to publish a “policy paper” outlining a new concept or approach to transportation funding on a regular basis. The release of this report and others to follow should not suggest that the GBC task force has settled on this approach, but merely represents a discussion point for public consideration of alternatives that exist in reaching this difficult policy objective.

At the conclusion of the task force’s work, a series of recommendations will be advanced that should serve as a blueprint for the legislature to consider.

The following report represents the second in a series of policy reviews for discussion. The first such report released in March concerned “congestion pricing.”

## **THE BASICS OF THE VEHICLE MILES TRAVELED (VMT) TAX**

### **What is Vehicle Miles Traveled (VMT) or Mileage Tax?**

A VMT tax is a user charge based directly on miles driven (and potentially on factors such as time of day, type of road and vehicle weight and fuel economy) rather than indirectly on fuel consumed.

Taxes are paid by drivers in proportion to the miles they drive. It is a funding option that is more suitable to a country moving toward more fuel efficient cars and non-gas powered vehicles. As more people purchase hybrids, diesel, and bio diesel, and as electric and fuel cell cars are further developed, there will be less revenue produced by fuel taxes.<sup>1</sup>

There is thought to be potential for VMT to replace the federal gas tax, and to serve as a substitute for gas taxes on the state level.<sup>2</sup> A VMT tax could be in place at the federal level by 2020. Necessary VMT equipment needs and a tamper-proof system must still be developed. State and federal governments must also work out efficient and beneficial pricing plans.

### **A Shift from the Gas Tax**

The mileage tax has been proposed in a recent report by the National Surface Transportation Infrastructure Financing Commission as an alternative to declining fuel tax revenues. The report points out how real highway spending per mile has fallen by nearly 50 percent since the federal Highway Trust Fund (HTF) was established in the 1950s; that the federal motor vehicle fuel tax—which has not been increased since 1993—is not adjusted for inflation and has experienced a cumulative 33 percent loss in purchasing power since 1993. It also notes that without changes to current policy, the revenues raised by all levels of government for capital investment for transportation will total only one-third of the nearly \$200 billion needed annually to maintain and improve the nation's highway and transit systems. By 2035 annual average HTF revenues are estimated to be \$32 billion compared to required investments of nearly \$100 billion per year.<sup>3</sup>

Among the reasons for a gap in gas tax revenues is the switch to more fuel-efficient cars and a decrease in driving that many transportation experts believe is related to the economic downturn. There were 3.7 billion fewer vehicle-miles traveled in December 2008 compared to December 2007, official statistics show.<sup>4</sup> This trend continues even with gas prices below \$2.00 per gallon.<sup>5</sup>

Also, electric cars and alternative-fuel vehicles that don't use gasoline are expected to start penetrating the market in greater numbers, which may further hasten the demise of the gas tax.<sup>6</sup>

When first instituted, the gas tax was a good way of assessing a user fee for the roadway system. The rationale was the more gas consumed, the more driving was done and the more roads were utilized more heavily. As more fuel-efficient vehicles were developed, however, a growing disparity developed between vehicles that got good gas mileage and those that did not. The problem stems in part from something good: More and more Americans are buying vehicles that have better gas mileage. That means less gas tax money from each car, though the car is causing the same amount of wear and tear on the roads.<sup>7</sup> A VMT system has been suggested as a better way to track how much someone truly uses the roadways.<sup>8</sup>

### **Obama Administration Views**

Recent rhetoric from President Obama's press spokesman had disparaged prospects for a switch to a VMT tax on a national basis. This came in response to a statement by USDOT secretary Ray LaHood that VMT is a means of "thinking outside the box on how we fund our infrastructure in America."<sup>9</sup> However, the Administration quickly reversed itself when the White House released its budget only days later. A promise with regard to transportation was to "find ways to make the nation's communities more livable and less congested, such as through road pricing."<sup>10</sup>

### **Congressionally Commissioned Report**

The VMT tax has been favored in the recently released "*Report of the National Surface Transportation Infrastructure Financing Commission*,"<sup>11</sup> as well as by some Members of Congress.<sup>12</sup> The National Financing Commission report calls for an eventual shift at the federal level from the gas tax (currently at 18.4 cents per gallon) to institution of the VMT tax because of stagnation of gasoline tax dollars due to less driving and increased fuel efficiency of cars. Some states have also examined the VMT taxation concept as a replacement for the gas tax, including Nevada, Oregon, Colorado, Ohio, North Carolina, Georgia, Minnesota, Michigan, and Massachusetts. The head of Missouri's state transportation department says a VMT is probably inevitable there within several decades. Even Idaho's Republican Governor Butch Otter has voiced support for taxing vehicles by the mile. In Washington, the state transportation commission's 2009 policy platform suggests a closer look at a VMT tested across state lines on the West Coast.<sup>13</sup>

## **MECHANICS OF VMT TAXATION: HOW IT'S COLLECTED**

### **Measurement of VMT**

In its report released on February 26, 2009, the Congressionally commissioned National Surface Transportation Infrastructure Financing Commission said new technologies could allow for a mileage gas tax that would take into account the type of vehicle and level of emissions. Programs of that type are being developed in other countries, including Germany and the Netherlands, the report said. "Such programs may not be ripe for widespread implementation in the U.S. yet, but are maturing rapidly," the report added.<sup>14</sup>

Both a centralized collection system and a point of service collection system are the means available to track mileage for a VMT system. Both systems would use GPS technology to track mileage driven.<sup>15</sup>

### **Centralized Collection**

Centralized collection would transfer data to a center that sends periodic billings to the motorist. This system contemplates usage of a GPS system to track miles traveled for purposes of assessment. GPS monitoring would allow the government to keep track of how much each car is driven and where -- though not necessarily with exact street locations. The government could also track other things, including the time each car enters a certain zone.<sup>16</sup>

### **Fuel Pump Collection**

Fuel pump collection requires transferring data while at the fuel pump and payment as part of the fuel purchase. The fuel pump collection system provides an on-vehicle device for allocation of miles driven in particular zones. At the fuel pump, the stored mileage data driven in each zone is transferred to the fueling station's point of sale (pos) system for application of mileage fee rates. The concept is gaining support in some states as a way of making up for a shortfall in highway funding. Oregon carried out a pilot program in 2006, using the point of service collection system and deemed it "successful" and "viable."<sup>17</sup>

## **PRICE SETTING FOR VMT TAX**

One of the difficulties in implementing a mileage based tax is setting prices. Both state and federal governments have little experience with pricing roads as commodities. It is important to ensure that prices are set at appropriate levels to allow governments to receive enough tax per mile to fulfill their revenue needs while not overtaxing drivers. Mileage rates would have to be determined, as well as a decision to make the tax a flat fee for every mile or to price miles differently depending on the road. There is also the question of congestion pricing regarding mileage rates, i.e., an added assessment depending on what time of day the miles are driven.<sup>18</sup>

(For an explanation of congestion pricing, please see the GBC's Task Force on Transportation Financing and Governance March 24, 2009 report on *The Basics of Congestion Pricing*)

The Federal National Surface Transportation Financing Commission report pointed out the enormous gap between current funding and needs. The report estimated that it would cost \$500 billion from 2010 to 2015 for the United States merely to maintain its current highway and road system, or \$625 billion to maintain, improve and expand it. However, the federal fuel tax would raise only \$230 billion in revenue during that same period. The Financing Commission operated under a narrow Congressional mandate, i.e., to determine what to do about the declining revenue base of the federal Highway Trust Fund. The group was able to arrive at a consensus - including a call for a VMT system by 2020 and an immediate 10-cent-a-gallon increase in the gasoline tax and 15-cent increase in the diesel tax. The commission further suggested that 2.3 cents a mile VMT

tax would be an adequate amount to start, or roughly, the equivalent of a gas tax of 48.4 cents a gallon.<sup>19</sup>

## **STATE EXPERIMENTATION WITH VMT - THE OREGON EXPERIENCE**

Though currently no state is using a full-mileage tax plan, in Oregon taxation of vehicles based on mileage has been used on an experimental basis in place of a fuel tax.

An Oregon task force, called the Oregon Road User Fee Task Force, came up with an automated system and a one-year pilot test for a mileage tax system to replace their state gas tax. Pursuant to state legislation outlining the test, the Oregon Department of Transportation (ODOT) launched a 12-month pilot program in April, 2006, designed to test the technological and administrative feasibility of the concept. It utilized 299 motorists and two service stations in Portland, Oregon.

Oregon DOT issued a report in November 2007 on the VMT pricing pilot program. The report noted the following factors regarding the institution of a VMT tax at the state level:

- A mileage fee can be implemented to replace revenues from motor fuel taxes.
- The mileage fee could be paid at the pump, with minimal difference in process or administration for motorists compared with how they pay the gas tax. Participants in the pilot program paid 1.2 cents per mile in lieu of a gas tax. Like the motor fuel tax, collection of the mileage fee can be embedded within routine commercial transactions, with the bulk of it prepaid by the distributor in the form of the motor fuel taxes. The retailer reimburses the distributor for VMT proceeds collected at the pump. This approach distinguishes the Oregon example from other concepts for institution of the gas tax wherein GPS monitoring would result in billing automobile drivers directly on a regular basis for usage of particular roadways
- The mileage fee can be phased in gradually alongside the gas tax, allowing vehicles not equipped with mileage calculating equipment to continue paying the gas tax. It appears that equipping motor vehicles with VMT devices is expensive and difficult.
- The study showed that different pricing zones could be established electronically and the assigned fees could be charged for driving in each zone, even at particular times of day. This demonstrates that the mileage fee concept could support not only congestion pricing but also assessment and collection of local revenues and other “zone-oriented” features. Furthermore, the area pricing strategy applied in the pilot program produced a 22 percent decline in driving during peak periods.
- Auditing and challenging of billings raise substantial privacy issues.
- The Point of Service System of collection imposes some new accounting burdens on gas stations, Although the Oregon study notes that administration

is automated and can be integrated relatively easily into existing transaction processes.

- There is minimum evasion potential
- Implementation and administration costs are manageable
- Public acceptance is not guaranteed. All Oregon participants were volunteers who, in interviews, offered that a “smaller percentage of other[s] would find the system acceptable.”<sup>20</sup>

The cost for full implementation in Oregon of collection of VMT at service stations in the state has been calculated to be \$35 million with annual operating costs of \$1.6 million.<sup>21</sup>

Oregon Governor Kulongoski is pursuing legislation in his state’s current legislative session to replace the 24-cent gas tax with a VMT fee.<sup>22</sup>

### **PRO’s & CON’s OF VMT**

A recent contributor to the GBC Task Force, Robert Puentes from the Brookings Institution, along with Deron Lovaas, an official with Natural Resources Defense Council, has observed support for the VMT system. They note a truism advanced by a 2006 *Eddington Transport Study* in Great Britain that the transportation sector is no exception to the rule that policies to influence demand be considered along with and before turning to increasing supply. They point out further that the Eddington study demonstrates that the potential for benefits from a well-designed, large-scale road pricing system is unrivaled by any other intervention.<sup>23</sup>

An increasing number of jurisdictions around the world are turning to road pricing, which also has the distinct advantages of a more direct linkage to the use of roads than the gas tax. Former Transportation Secretary Mary Peters described other advantages in congressional testimony in 2008, which includes congestion relief, revenue generation, and carbon reduction.<sup>24</sup>

The subject of VMT has the capacity for brewing controversy. Speaking to The Associated Press, the Obama administration’s Transportation Secretary Ray LaHood, an Illinois Republican, said, “We should look at the vehicular miles program where people are actually clocked on the number of miles that they traveled.” The remark was part of a discussion about various options to help make up for the highway funding shortfall on the federal level. As noted earlier, the remark subsequently drew a rebuke from President Obama’s press spokesman, Robert Gibbs.<sup>25</sup>

In an interview with Congressional Quarterly, Congressman James Oberstar, (Chairman of the House Committee on Transportation and Infrastructure, one of the Congressional transportation authorizing committees,) said that LaHood “had the temerity to think...and what did he get? Slapped down. He's a good man. A decent man. Don't let him get

slapped down by know-nothings." Oberstar then suggested that Gibbs ought to stay out of the conversation on transportation policy. "I've got news for you," Oberstar said, "transportation policy isn't going to be written in the press room of the White House."<sup>26</sup>

Officials in Massachusetts told CNN this week that there has been talk of proposing such a system for the state. Colin Durant, a spokesman for Gov. Deval Patrick, said "privacy would be our top priority." But Patrick subsequently announced a different plan to help raise highway funds: a 19-cent increase in the state's gas tax. But he said that alone "will not solve all our challenges," and some "major reforms" will be needed.<sup>27</sup>

Others across the country have denounced a VMT tax. Columnist Glenn Reynolds noted in January for *Popular Mechanics*. "At best, it's [VMT's] overcomplicated and intrusive. At worst, it's a threat to privacy and the environment." Reynolds added, "Gas taxes are a pretty good proxy for road usage -- the more you drive, the more gas you burn -- and there's a bonus: Gas taxes encourage people to use less gas. ... A mileage tax, presumably, doesn't care whether you're driving a Prius or a Hummer, giving no incentive to save."<sup>28</sup>

In response to this argument, others have noted that a mileage tax could be tailored so that Hummer drivers, for example, paid more per mile than Prius owners. The tax could also be levied at higher rates during rush hour or on congested highways, discouraging people from driving at times when they would spend the longest on the road.<sup>29</sup>

There is also the litmus test of potential voter disapproval of a VMT standard. The Civitas Institute in North Carolina -- which describes itself as standing for "liberty and prosperity derived from limited government" -- said it carried out a poll in North Carolina and found that voters disapprove of the idea.<sup>30</sup>

Voter reaction to VMT initiatives will ultimately determine the acceptance of VMT taxation.

However, the VMT is not without flaws. It has been argued that the tax has aspects that make it simultaneously regressive and intrusive.

Although the current gas tax is arguably a regressive tax in that it is effectively a sales tax whose rate is independent of income level or wealth, a VMT tax could be even worse. A paper published in 2004 by Young-Jun Kweon and Kara M. Kockelman at the University of Austin Texas entitled "Nonparametric Regression Estimation of Household VMT" found that "at low levels of household income, income increases are associated with lower VMT." In other words low-income households (below approximately \$10,000) drive more than higher income households (up to about \$20,000). Furthermore high-income households (over about \$90,000) drive less as income increases. The current gas tax system allows lower-income drivers to reduce their tax burden by driving smaller and more fuel-efficient cars. The VMT would eliminate this possibility.<sup>31</sup>

Privacy concerns are paramount in discussions of a VMT tax. The late Professor David Forkenbrock of the University of Iowa recommends limiting the information collection and encrypting data. His thinking is that a program can be designed so that it is not intrusive enough to trigger anxiety about privacy.<sup>32</sup> The European Union is also taking the legislative steps to ensure that location data may not leave private vehicles when GPS is being used to calculate use charges. This can be done by calculating usage bills with on-board equipment, by sending out billing data without any time or location information, or even by payment on-board with a smart card. There are related ways to ensure that on-board equipment is working correctly and that payment is being made also without any invasion of privacy. The question is not whether privacy can be protected. It can be. The question is: what kind of legislation would the federal government (and each state) enact? <sup>33</sup>

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<sup>1</sup> <http://www.logisticsmgmt.com/article/CA6640627.html>

<sup>2</sup> <http://www.planetizen.com/node/37666>

<sup>3</sup> <http://financecommission.dot.gov/>

<sup>4</sup> <http://www.kpho.com/automotive/18749313/detail.html>

<sup>5</sup> <http://www.thetakeaway.org/stories/2008/dec/15/people-are-driving-less-even-with-gas-under-two-dollars/>

<sup>6</sup> [http://www.breitbart.com/article.php?id=D96F6JO80&show\\_article=1&catnum=3](http://www.breitbart.com/article.php?id=D96F6JO80&show_article=1&catnum=3)

<sup>7</sup> <http://www.cnn.com/2009/POLITICS/02/...ef=mpstoryview>

<sup>8</sup> [http://blog.cleveland.com/metro/2009/01/ohio\\_studies\\_vehicle\\_miles\\_tax.html](http://blog.cleveland.com/metro/2009/01/ohio_studies_vehicle_miles_tax.html)

<sup>9</sup> <http://washingtonindependent.com/31233/experts-say-lahood-tax-plan-has-merit>

<sup>10</sup> <http://www.washingtonpost.com/wp-dyn/content/article/2009/03/15/AR2009031501736.html>

<sup>11</sup>

[http://financecommission.dot.gov/Documents/NSTIF Commission Final Report Advance%20Copy\\_Feb09.pdf](http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Advan ce%20Copy_Feb09.pdf)

<sup>12</sup> [http://www.asce.org/community/architectural/event\\_release.cfm?uid=5754](http://www.asce.org/community/architectural/event_release.cfm?uid=5754)

<sup>13</sup> <http://www.discovery.org/a/9361>

<sup>14</sup> <http://financecommission.dot.gov/>

<http://www.logisticsmgmt.com/article/CA6640627.html>;

<http://www.acppubs.com/article/CA6641880.html>

<sup>15</sup> <http://www.gatransfunding.com/documents/m4/Whitty.pdf>

<http://www.tollroadsnews.com/node/278>

<sup>16</sup> <http://www.cnn.com/2009/POLITICS/02/...ef=mpstoryview>

<sup>17</sup> “Oregon’s Mileage Fee Concept and Road User Fee Pilot Program,” Report by the Oregon Department of Public Transportation, November 2007, p.8.

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- <sup>18</sup> <http://financecommission.dot.gov/>  
[http://www.nytimes.com/2009/02/27/business/energy-environment/27gastax.html?\\_r=1&nl=pol&emc=pola1](http://www.nytimes.com/2009/02/27/business/energy-environment/27gastax.html?_r=1&nl=pol&emc=pola1)
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- <sup>22</sup> <http://www.planetizen.com/node/36755>
- <sup>23</sup> [Eddington Transport Study. http://www.infrastructurist.com/2009/02/24/why-the-vehicle-miles-travelled-tax-is-getting-short-changed/](http://www.infrastructurist.com/2009/02/24/why-the-vehicle-miles-travelled-tax-is-getting-short-changed/)
- <sup>24</sup> [http://appropriations.senate.gov/Hearings/2008\\_03\\_06\\_-\\_Transportation-Testimony\\_of\\_Secretary\\_Peters\\_at\\_March\\_6\\_Hearing.pdf?CFID=355127&CFTOKEN=92474821](http://appropriations.senate.gov/Hearings/2008_03_06_-_Transportation-Testimony_of_Secretary_Peters_at_March_6_Hearing.pdf?CFID=355127&CFTOKEN=92474821)
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<sup>33</sup> <http://grushhour.blogspot.com/2009/02/remove-privacy-concerns-as-barrier-to.html>