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## **Funding Analysis for Long-Term Planning**

Final Report

Allison L.C. de Cerreno, Ph.D.

Rudin Center for Transportation Policy & Management  
NYU Robert F. Wagner School of Public Service  
4 Washington Square North  
New York, NY 10003  
[www.nyu.edu/wagner/rudincenter](http://www.nyu.edu/wagner/rudincenter)

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# Funding Analysis for Long-Term Planning

Allison L. C. de Cerreño, Ph.D.



July 2003

Elliot G. Sander, Director  
Allison L. C. de Cerreño, Co-Director

Rudin Center for Transportation Policy & Management  
NYU Robert F. Wagner Graduate School of Public Service  
4 Washington Square North New York, NY 10003  
[www.nyu.edu/wagner/rudincenter](http://www.nyu.edu/wagner/rudincenter)

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16. Abstract  <p>In existence since 1956, the Highway Trust Fund (HTF) is the source of nearly all Federal highway funding and roughly four-fifths of all Federal transit funding. The Highway Trust Fund is integral to the long-term transportation planning of all 50 States. However, recent Congressional Budget Office forecasts show that at the current baselines (i.e. spending at currently enacted levels with adjustments for inflation within the context of current tax policies), the Highway Account of the HTF would be depleted by 2006 and the Mass Transit Account would fall to \$0 three years later.<sup>1</sup> These projections have been made in the midst of discussions regarding the reauthorization for surface transportation and the looming national needs in transportation that require an estimated average annual investment from all levels of government of between \$90.7 billion and \$110.9 billion just to maintain the system and between \$127.5 billion and \$169.5 billion to improve it.</p> <p>Recognizing that its current weakness has been its historic strength, Section 1 outlines projected transportation needs and provides a historical background of the Highway Trust Fund as well as an understanding of the mechanisms by which it collects revenues and provides funding to the States. It also briefly touches on the importance of the Highway Trust Fund to New York in particular. However, regardless of the specific funding formulas that provide more or less funding in a given year to a specific State, transportation needs will remain unmet in all States if HTF revenue streams shrink. Thus, the focus for the remainder of the report is on the HTF revenue base specifically.</p>					
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#### **ABOUT THE RUDIN CENTER FOR TRANSPORTATION POLICY & MANAGEMENT**

Established in 1996 at New York University's Robert F. Wagner Graduate School of Public Service, and named in September 2000 in recognition of a generous gift to NYU in support of the Center, the Rudin Center for Transportation Policy and Management is currently led by Elliot (Lee) G. Sander, Director, and Allison L. C. de Cerreño, Ph.D., Co-Director.

The mission of the Rudin Center for Transportation Policy and Management is to encourage innovative thinking and action in transportation management and policy.

With a team of Visiting Scholars drawn from both the transportation and academic communities, the Rudin Center conducts research and conferences, provides education and training, and promotes and supports key policy networks in the field of transportation policy and management. A number of publications are produced each year, based on the research, conferences, and training carried out by the Rudin Center.

## EXECUTIVE SUMMARY

In existence since 1956, the Highway Trust Fund (HTF) is the source of nearly all Federal highway funding and roughly four-fifths of all Federal transit funding. The Highway Trust Fund is integral to the long-term transportation planning of all 50 States. However, recent Congressional Budget Office forecasts show that at the current baselines (i.e. spending at currently enacted levels with adjustments for inflation within the context of current tax policies), the Highway Account of the HTF would be depleted by 2006 and the Mass Transit Account would fall to \$0 three years later.<sup>1</sup> These projections have been made in the midst of discussions regarding the reauthorization for surface transportation and the looming national needs in transportation that require an estimated average annual investment from all levels of government of between \$90.7 billion and \$110.9 billion just to maintain the system and between \$127.5 billion and \$169.5 billion to improve it.<sup>2</sup>

### The Problem

The key weakness of the Highway Trust Fund stems from its historical strength – its reliance on motor fuel excise taxes as the primary source of revenues. While a successful means for generating monies for transportation needs since 1957, this revenue base is now facing several key challenges both fiscally and politically. Among them,

- The disconnect between motor fuel taxes and general economic indicators such as rates of inflation and growth in the economy has led to an inability of the HTF to keep pace with the costs of transportation projects in the face of expanding needs.
- The preferential tax status and diversion of portions of fuel taxes (most notably on gasohol) undermines the revenue stream.
- Relying on motor fuel taxes runs counter to other national policy goals that seek to reduce reliance on petroleum and improve air quality by increasing fuel efficiency and reducing emissions.

Thus, there is concern over the ability of the HTF in the longer term to continue meeting transportation funding needs for all States, including New York which received \$9.1 billion in Federal surface transportation funding between 1996 and 2000, representing about 11% of its total funding for surface transportation.<sup>3</sup> (Of this, over \$8 billion was derived from the HTF.)

### Framework of the Report

Recognizing that its current weakness has been its historic strength, Section 1 outlines projected transportation needs and provides a historical background of the Highway Trust Fund as well as an understanding of the mechanisms by which it collects revenues and provides funding to the States. It also briefly touches on the importance of the Highway Trust Fund to New York in particular. However, regardless of the specific funding formulas that provide more or less funding in a given year to a specific State, transportation needs will remain unmet in all States if HTF revenue streams shrink. Thus, the focus for the remainder of the report is on the HTF revenue base specifically.

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<sup>1</sup> U.S. Senate, Committee on Finance, *Congressional Budget Office Testimony*, "Status of the Highway Trust Fund – Statement of Kim P. Cawley, Chief, Natural & Physical Resources Cost Estimates Unit," 9 May 2002, p. 6.

<sup>2</sup> These figures reflect estimates from both the U.S. Department of Transportation, Federal Highway Administration & Federal Transit Administration, *2002 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance*, Report to Congress – Executive Summary, FHWA-PL-03-004 (Washington, DC: FHWA, 2003), pp. ES-12, ES-13; and American Association of State Highway and Transportation Officials (AASHTO), *Transportation – Invest in America: The Bottom Line* (Washington, DC: AASHTO, 2002), pp. 1-2.

<sup>3</sup> Mark Seaman and Allison L. C. de Cerreño, *Dividing the Pie: Placing the Transportation Donor-Donee Debate in Perspective* (NY: Rudin Center for Transportation Policy & Management, May 2003), p. 4.

Section 2 explores the challenges to HTF revenue sources stemming from both current and potential factors including the inability of motor fuel taxes as presently structured to keep pace with inflation, the possibility of increased fuel efficiency and the potential for alternative fuels. Section 3 summarizes alternative strategies for bolstering HTF revenues and Section 4 provides a concluding statement of findings and recommendations.

## **Findings and Recommendations**

Relying on motor fuel excise taxes for the bulk of Highway Trust Fund revenues has been a successful strategy since the inception of the HTF in 1956. However, relying on motor fuel excise taxes in the longer-term to the degree that they are relied upon now is likely to prove insufficient given current and projected transportation needs, a variety of emerging factors that are likely to erode the HTF, and competing national policy goals. This is not to say that motor fuel taxes should not be a part of the overall revenue stream going forward but that alternatives will be needed to bolster them.

### ***Short-term Recommendations***

Among the short-term recommendations are the following:

- End the current diversion of 2.5 cents on gasohol from the HTF to the General Fund. Redirecting these monies would result in increased revenues to the Highway Account of approximately \$600 million annually between 2004 and 2012.<sup>4</sup> Further, judging by the current discussions and the recent proposal by the Bush Administration, there is a great deal of political support for this redirection of funds.
- Increase receipts to the Highway Account by the amount of the current partial exemption on gasohol. The partial exemption on gasohol is important for other national policy goals (e.g., increasing the use of gasohol by making it less expensive). However, as gasohol replaces gasoline it erodes the revenue stream since fewer taxes are collected. Raising the tax may not be politically feasible at this time, but the Highway Account could be “refunded” by the General Account for the comparable amount lost, resulting in increased revenues of about \$1.3 billion annually between 2004 and 2012.<sup>5</sup>
- Raise and index current motor fuel excise taxes to help keep pace with inflation and economic growth. Motor fuel taxes have been a successful means for funding transportation needs for almost fifty years. They are likely to be a critical source of revenues for at least the next two decades, but to mitigate the current weakness of relying on them, motor fuel taxes must at least keep pace with inflation. Raising motor fuel taxes, which is already being seriously discussed, will help, but unless they are indexed their purchasing power will erode. Indexing them at the same time as increasing them will help avoid this ongoing problem.
- Reinstigate the interest on the HTF balance. Under current estimates, the Highway Account could accrue \$550 million in 2004 and a total of \$1.9 billion between 2004 and 2012, and the Mass Transit Account could accrue \$100 million in 2004 and a total of \$1 billion through 2012.<sup>6</sup>

### ***Mid-Term Recommendation***

In the mid-term, current non-motor fuel excise taxes (i.e., tires, truck and trailer sales, and heavy vehicle use) should be reevaluated to determine whether current taxes are in line with the costs incurred.

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<sup>4</sup> U.S. Senate, “Status of the Highway Trust Fund – Statement of Kim P. Cawley,” p. 12.

<sup>5</sup> *Ibid.*, p. 14.

<sup>6</sup> *Ibid.*, p. 17.

### ***Long-Term Recommendations***

If the three short-term recommendations were implemented, they would help bolster the short-term revenue base during the next reauthorization. However, revenue streams would still likely fail to keep pace with transportation needs if the revenue base shrinks due to increased fuel efficiency or alternative fuel use. Further, there is still the political conundrum of relying on motor fuel taxes for transportation funding in the face of competing policy goals.

Thus, there are several long-term recommendations as well:

- Develop policies on alternative fuels that are not currently taxed.
- Develop specific revenue estimates for several alternatives already being discussed. Vehicle related taxes such as vehicle miles of travel (VMT) or vehicle user fees, potentially combined with value pricing schemes hold a great deal of promise. However, full cost-benefit analyses need to be developed as well as clear policies for implementation.

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## 1. INTRODUCTION

In its *2002 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance*, the U.S. Department of Transportation forecasted that for the period 2001 – 2020 an average annual investment of \$75.9 billion from all levels of government will be necessary to maintain current conditions and performance on our nation's highways and bridges. To *improve* highways and bridges over the same 20 year period, U.S. DOT projects an average annual investment of \$106.9 billion will be needed. Similarly, an average annual investment of \$14.8 billion will be needed to maintain conditions and performance of the nation's transit systems, with an additional \$5.8 billion needed to *improve* the transit systems.<sup>1</sup> The American Association of State Highway and Transportation Officials (AASHTO) published its own 2002 report, *The Bottom Line* which provided estimates even higher than those of FHWA. The AASHTO study projected that \$92.0 billion would be needed on an annual basis from all levels of government to maintain current conditions on highways and bridges, with a total of \$125.6 billion annually to improve them over the period of 20 years. Their figures for transit were also higher, at \$18.9 billion per year needed to maintain and \$43.9 billion per year to improve the nation's transit systems for the period 2004-2009 alone.<sup>2</sup> While the exact projections may be debatable, there is consensus on the tremendous needs in transportation and the fact that present levels of investment will fall far short of meeting them.

These projections have been made against the backdrop of the current reauthorization of federal funds for surface transportation and increased concern over the status and long-term viability of the Federal Highway Trust Fund (HTF). With the HTF providing nearly all of the federal contributions to States for highway improvements and roughly four-fifths of the federal funding for transit, ensuring its revenue stream in some form is critical to long-term planning.

However, there are a number of experts who are concerned about the viability of the Highway Trust Fund. They point to a number of elements that are already undermining the Fund's key revenue source (motor fuel excise taxes) as well as several potential factors that may do so in the long run. Alternatives, including other types of taxes, tolls, and value pricing, to name a few, are being discussed, but there is no clear consensus yet on which path to follow.

This report explores the strengths and weaknesses of the current basis of funding for the Federal Highway Trust Fund, provides a discussion of the assessments of various alternative sources of revenues, and when possible, highlights the potential impacts on New York State. A full cost-benefit

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<sup>1</sup> U.S. Department of Transportation, Federal Highway Administration & Federal Transit Administration, *2002 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance*, Report to Congress – Executive Summary, FHWA-PL-03-004 (Washington, DC: FHWA, 2003), pp. ES-12, ES-13. These numbers are significantly higher than predictions made in the *1999 Status of the Nation's Highways, Bridges, and Transit: Conditions & Performance*, which estimated an average annual investment of \$56.6 billion to maintain highways and bridges and \$10.8 billion to maintain the nation's transit systems.

<sup>2</sup> American Association of State Highway and Transportation Officials (AASHTO), *Transportation – Invest in America: The Bottom Line* (Washington, DC: AASHTO, 2002), pp. 1-2. AASHTO's estimates are higher for several reasons which are described in Appendix A of their report.

analysis of each alternative is beyond the scope of this report, but in many cases such assessments have been prepared or at least begun by others. They are summarized here and citations are provided for those who would like to examine them further.

### **1.1 A Brief History of the Highway Trust Fund**

To better understand the concerns over the apparent fragility of the Highway Trust Fund, it is important to understand how and why it was created and the basics of how it functions. For in its history and structure are the roots of both the HTF's past strengths and current weaknesses.

Created by the Highway Revenue Act of 1956, the Federal Highway Trust Fund was instituted to provide a dependable source of funding for the development of the National System of Interstate and Defense Highways and for financing the remaining components of the Federal-aid Highway Program, as stipulated in the companion Federal-Aid Highway Act, passed the same year. With the passage of these two Acts, annual funding for highways was increased from \$175 million in 1956 to close to \$1.2 billion in 1957, with the goal of increasing further to \$2.2 billion by FY 1960.<sup>3</sup>

Prior to 1956, federal motor fuel and vehicle taxes existed (federal excise taxes on fuel were initially levied in 1932), but once collected they were directed to the General Fund. Indeed, the initial reason for imposing the federal excise tax on fuel was to help meet a federal budget gap. However, the 1956 Highway Revenue Act changed the nature of the federal excise taxes on fuel by directing excise taxes on motor fuels, as well as truck tires, truck and trailer sales, and heavy vehicle use into the HTF. In other words, the Highway Revenue Act transformed what had been a deficit reduction tool into an effective user tax.<sup>4</sup>

The creation of the HTF also marked a turning point in transportation financing by linking for the first time the receipts from these highway user taxes and federal funding for highways. Indeed, as Alan Pisarski pointed out in his July 2002 Testimony before the U.S. House of Representatives Subcommittee on Highways & Transit, "the great benefit of the trust fund over almost 50 years is the implicit "user compact"

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<sup>3</sup> U.S. Congress, House of Representatives, Committee on Transportation & Infrastructure, Subcommittee on Highways and Transit, *Hearing on Ensuring the Integrity of the Highway Trust Fund*, "Statement of Donna McLean, Assistant Secretary for Budgets and Programs and CFO, USDOT," 20 March 2002. <http://www.house.gov/transportation/highway/03-20-02/03-20-02memo.html>

<sup>4</sup> Technically, the motor fuel tax is a "manufacturer's excise tax" because it is imposed at the point of production, but since the "producers" (defined as refiners, compounders, blenders, and dealers selling exclusively to producers, as well as producers) pass on the cost to the retailers who then pass it on to the users, it functions, in effect, as a user tax. For more on how the costs are passed to the user, see Robert Puentes and Ryan Price, "Fueling Transportation Finance: A Primer on the Gas Tax," *The Brookings Institution Series on Transportation Reform* (March 2003): 2. For more on how the tax is employed as a user fee, See Section 2.2.

in its formation and use. Users and users only pay for the roads and the fees obtained are used to support the roads.”<sup>5</sup>

The first Highway Revenue Act expired in 1972. Since then, however, legislation has periodically extended the imposition and crediting of these excise taxes to the HTF. Current impositions and credit of federal excise taxes to the HTF are scheduled to terminate on October 1, 2005 with expenditures authorized through September 30, 2003. While the bulk of the taxes collected have been employed as user taxes, Congress has at different times returned to using a portion of these taxes for deficit reduction. The 1990 Omnibus Budget Reconciliation Act, for example, raised federal fuel taxes but provided that half the revenues from the increase would be diverted to the General Fund for deficit reduction (amounting to 2.5 cents per gallon). Three years later, the 1993 Omnibus Reconciliation Act again raised federal fuel taxes but directed the entire increase be put toward the General Fund (for a total of 6.8 cents per gallon diverted from the HTF). The diversion was reduced for gasoline and diesel fuels in 1995 but remained at 4.3 cents per gallon until 1997 when it was done away with for all motor fuels except gasohol.<sup>6</sup> (In fact, by augmenting the HTF revenue streams, this redirection of the previously diverted fuel taxes allowed the substantial increases in transportation authorizations under Transportation Equity Act for the 21<sup>st</sup> Century (TEA-21).)

Though the HTF was initially meant to fund highways only, by the early 1980s the political and social landscape was changing and there was increased recognition of the importance of federal funding for mass transit. As a result, the Surface Transportation Assistance Act of 1982 and its companion Highway Revenue Act created a separate Mass Transit Account within the HTF effective April 1, 1983.<sup>7</sup>

The link between highway user taxes and federal funding for transportation was further strengthened under the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) and under the 1998 TEA-21. In particular, TEA-21 established “minimum guarantees” and created budgetary “firewalls” for highway and transit. The former ensured that more than 90% of the funds authorized for transportation in TEA-21 would be appropriated in the annual budget process.<sup>8</sup> The latter created a separate category within the

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<sup>5</sup> U.S. Congress, House of Representatives, Committee on Transportation & Infrastructure, Subcommittee on Highways & Transit, *Hearing on Long-Term Outlook on Highway Trust Fund: Are Fuel Taxes a Viable Measure?* “Testimony of Alan E. Pisarski, Consultant,” 16 July 2002. <http://www.house.gov/transportation/highway/07-16-02/dinneen.htm>.

<sup>6</sup> A diversion of 4.3 cents remains on diesel used by freight railroads. The diversion of the portion of the gasohol excise tax is currently set to expire in October 2005. The impact on the HTF that this diversion of receipts from the gasohol tax has had, and may have if it is continued, is discussed in Section 2.1.

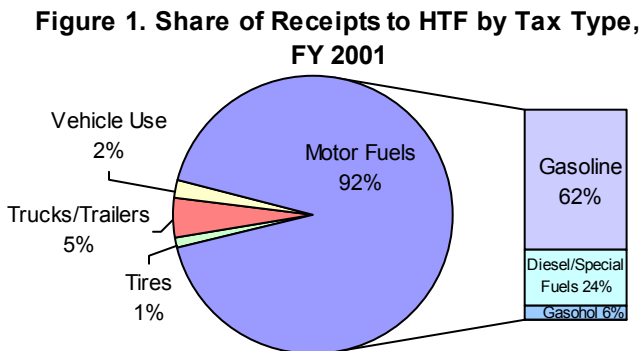
<sup>7</sup> Though never formally designated, that portion of the Highway Trust Fund not designated as the Mass Transit Account has come to be referred to as the Highway Account. Three years later, Congress established the Leaking Underground Storage Tank Trust Fund, administered by the Environmental Protection Agency, in response to concerns regarding cleanup costs related to storage tanks leaking petroleum products. Effective as of January 1, 1987, the fund receives 0.1 cent per gallon on gasoline, diesel, gasohol, M85, and other special fuels.

<sup>8</sup> The phrase “Minimum Guarantee” is used in 2 different ways. The first, described above, was an important change from ISTEA where only 75% of the authorizations for transit were actually appropriated. The second usage refers to the formula calculations which ensure that each State receives some specific percent return on their proportional contributions to the Highway Trust Fund. Under TEA-21 that return was 90.5%; a coalition of States known as SHARE is currently trying to increase that return to the detriment of others, including New York.

federal budget so transportation funds in the HTF need not compete with other programs for a place in the annual budget.<sup>9</sup> In other words, “TEA-21 enhanced the link between highway user tax receipts and surface transportation by legislating the guaranteed funding concept.”<sup>10</sup>

## 1.2 How the Highway Trust Fund Works

As mentioned earlier, the Highway Trust Fund was created as a user-supported fund, relying on several federal excise taxes for its revenues. Motor fuel taxes account for the greatest percentage of net receipts to the HTF each year. Indeed, Donna McLean, Assistant Secretary for Budget & Programs and CFO, at



Source: USDOT, FHWA, Office of Highway Policy Information, *Highway Statistics 2001* (Washington, DC: FHWA, 2002), Tables FE-210 and FE-10.

the U.S. Department of Transportation, has noted that “motor vehicle fuels are the lifeblood of our highway revenue programs....”<sup>11</sup> In FY 2001, of the \$31.5 billion in total receipts collected, \$19.5 billion was derived from gasoline excise taxes alone. Combining gasoline, diesel, and gasohol receipts, motor fuels were responsible for 92% of total HTF

receipts, or \$29.0 billion. The remainder was comprised of truck-related taxes and fees (8%).<sup>12</sup> (Figure 1.)

The current distribution within the HTF of receipts derived from these taxes is shown in Figure 2. Most of the excise taxes credited to the HTF are paid to the Internal Revenue Service by the producer or importer of the taxable product. They are initially placed in the General Fund and later transferred to the HTF. Thus, most of the actual fuel tax payments collected are from a small number of States where the major oil companies are headquartered. Similarly, as of 1999 most tire taxes continued to be paid from Ohio, the center of the U.S. tire industry.<sup>13</sup> Because these taxes are included in the price of the product, they are eventually paid for by the users so estimates are made of the amount of tax paid by highway users in each State on the basis of data reported by state motor fuel-tax agencies.

<sup>9</sup> For more on how the Minimum Guarantee and the firewalls work, see U.S. Department of Transportation (USDOT), Federal Highway Administration (FHWA), Office of Legislation and Strategic Planning, *Financing Federal-Aid Highways* (August 1999), FHWA-PL-99-015, pp. 15 and 29.

<sup>10</sup> U.S. Congress, House, “Statement of Donna McLean.”

<sup>11</sup> *Ibid.*

<sup>12</sup> USDOT, FHWA, Office of Highway Policy Information, *Highway Statistics 2001* (Washington, DC: FHWA, 2002), Tables FE-210 and FE-10, [www.fhwa.dot.gov/ohim/hs01/fe210.htm](http://www.fhwa.dot.gov/ohim/hs01/fe210.htm) and [www.fhwa.dot.gov/ohim/hs01/fe10.htm](http://www.fhwa.dot.gov/ohim/hs01/fe10.htm).

<sup>13</sup> USDOT, FHWA, *Financing Federal-Aid Highways*, p. 33.

**Figure 2.**  
**Federal Highway User Fees, October 2002**

USER FEE	TAX RATE	DISTRIBUTION OF TAX					
		EFFECTIVE DATE	HIGHWAY TRUST FUND		LEAKING UNDER-GROUND STORAGE TANK TRUST FUND	GENERAL FUND	
			HIGHWAY ACCOUNT	MASS TRANSIT ACCOUNT			
<b>Fuel Taxes (Cents per Gallon)</b>							
Gasoline	18.4	10/01/97	15.44	2.86	0.1	-	
Diesel & Kerosene Fuel	24.4	10/01/97	21.44	2.86	0.1	-	
Liquefied Petroleum Gas	13.6	10/01/97	11.47	2.13	-	-	
Liquefied Natural Gas	11.9	10/01/97	10.04	1.86	-	-	
M85 (85% Methanol)	9.25	10/01/97	7.72	1.43	0.1	-	
Compressed Natural Gas*	4.3	10/01/97	3.44	0.86	-	-	
Other Special fuels**	18.4	10/01/97	15.44	2.86	0.1	-	
Gasohol (made with Ethanol)	10% gasohol***	13.2	01/01/03	7.74	2.86	0.1	2.5
	7.7% gasohol***	14.40	01/01/03	8.94	2.86	0.1	2.5
	5.7% gasohol***	15.44	01/01/03	9.98	2.86	0.1	2.5
<b>Other Taxes - All Proceeds to Highway Account</b>							
Tires	0-40 pounds, no tax Over 40-70 pounds, 15 cents per pound in excess of 40 Over 70-90 pounds, \$4.50 plus 30 cents per pound in excess of 70 Over 90 pounds, \$10.50 plus 50 cents per pound in excess of 90						
Truck and trailer sales	12 percent of retailer's sales price for tractors and trucks over 33,000 pounds gross vehicle weight (GVW) and trailers over 26,000 pounds GVW						
Heavy vehicle use	Annual tax: Trucks 55,000-75,000 pounds GVW, \$100 plus \$22 for each 1,000 pounds (or fraction thereof) in excess of 55,000 pounds Trucks over 75,000 pounds GVW, \$550						

\*Compressed natural gas is taxed 48.54 cents per thousand cubic feet (MCF), with the Mass Transit Account receiving 9.7 cents per MCF and the Highway Account receiving 38.83 cents per MCF. Roughly converting these amounts to cents per gallon results in the entries in the table above.

\*\*Special fuels include benzol, benzene, naphtha, casing head and natural gasoline, or other liquid used as fuel in a motor vehicle except diesel, kerosene, gas oil, fuel oil, or a product taxable under the gasoline tax provisions.

\*\*\*The exemption on fuels has been reduced incrementally since 2000. For example, on 10% gasohol, the exemption from 1998-2000 was 5.4 cents per gallon; from 2001-2002 it was 5.3 cents per gallon. Currently, 5.2 cents per gallon, it will be reduced to 5.1 cents per gallon in January 2005. Numbers here are rounded to the nearest hundredth. For the exact figures, see U.S. Department of the Treasury, Internal Revenue Service, "Changes to Excise Tax Rates for 2003 - Announcement 2002-115," <http://www.irs.gov/businesses/corporations/article/0,,id=96418,00.html>.

Transfers from the General Account to the HTF are made on roughly a monthly basis based on estimates by the Secretary of the Treasury and they are adjusted on the basis of actual tax receipts on a quarterly basis.<sup>14</sup> Prior to October 1998, the HTF was paid interest on its balance from the General Fund, but that was eliminated under TEA-21 as part of the negotiation that established the firewalls and funding guarantees. Nevertheless, the U.S. Treasury estimates that as a result of this change, the HTF lost \$4 billion from September 1999 through February 2002.<sup>15</sup>

Since FY 2000, a revenue aligned budget authority (RABA) adjustment is made on an annual basis. After reconciling actual receipts with the previous year's estimates and comparing estimates of highway account receipts with the amounts specified in the TEA-21 legislation, a positive or negative adjustment may be made to the firewall, thus changing that year's obligation limitations. Fiscal Year 2003 marked the first time that this RABA calculation was negative. In fact, for FY 2003, both portions of this calculation were negative. That is, actual revenues from federal highway-user excise taxes were lower than expected and the estimates of receipts in the coming year were lower than specified in TEA-21. Thus, per TEA-21, the level of highway funding should have been decreased.<sup>16</sup> While the overall TEA-21 period still showed a net increase as a result of RABA, the negative adjustment still would have meant a \$4.4 billion reduction in FY 2003 funding from the TEA-21 authorizations.<sup>17</sup> Compounding the situation was the FY 2002 adjustment that increased funding by \$4.5 billion, resulting in an \$8.9 billion difference within a one-year period. While legislation was passed mid-year that kept the RABA adjustment at \$0, the potential difficulties arising from the RABA were highlighted and are likely to be rethought in the upcoming reauthorization of federal surface transportation funds.

### ***The Highway Trust Fund Balance***

When discussing the status of the Highway Trust Fund, many point to the balance as an important indicator of its health so taking a moment to explain what the balance represents is important. Since the Highway Trust Fund was established, less has been spent than has been earned through excise tax receipts (and interest until recently). Between FY 1957 and FY 1997, for example, revenues and interest combined totaled \$394 billion while outlays were only \$372 billion.<sup>18</sup> (This trend has continued during TEA-21, with \$28.8 billion so far in receipts compared to \$24.9 billion in outlays.) However, a positive balance in the HTF is not necessarily a surplus since prior year obligations may not have been liquidated. For instance, at the end of FY 1997, the HTF showed a balance of \$12.6 billion, but unpaid obligations

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<sup>14</sup> U.S. Congress, House of Representatives, Committee on Transportation & Infrastructure, Subcommittee on Highways and Transit, *Hearing on Ensuring the Integrity of the Highway Trust Fund*, "Highway Financing: Factors Affecting Highway Funding Fluctuation and Revenue Trends – Statement of JayEtta Z. Hecker, Director, Physical Infrastructure Issues" (20 March 2002) GAO-02-527T.

<sup>15</sup> U.S. Congress, House of Representatives, Committee on Transportation & Infrastructure, Subcommittee on Highways and Transit, *Hearing on Ensuring the Integrity of the Highway Trust Fund: Are Fuel Taxes a Viable Measure?*, p. 3.  
<http://www.house.gov/transportation/highway/07-16-02/07-16-02memo.html>.

<sup>16</sup> U.S. House of Representatives, "Highway Financing: Factors Affecting Highway Funding Fluctuation and Revenue Trends – Statement of JayEtta Z. Hecker."

<sup>17</sup> Ibid., and U.S. Congress, House, "Statement of Donna McLean."

<sup>18</sup> FHWA, Office of Policy Development, *Highway Trust Fund: A Primer*, p. 7.

(outstanding commitments) and unobligated authorizations (potential commitments) totaled more than three times that balance.<sup>19</sup>

To ensure there are sufficient funds in the HTF to meet obligations, both the Highway and Mass Transit Accounts now utilize the Byrd Amendment as a control mechanism. For each Account, unfunded authorizations at the end of the fiscal year in which the apportionment is made must be less than the revenues anticipated in the upcoming 24-month period.<sup>20</sup> If a shortfall is predicted, then apportionments from the account that fails the test are proportionately reduced for that year.

### **1.3 The Importance of the Highway Trust Fund to New York State**

While debate is currently heated in Washington regarding the funding formulas that determine how much each State is apportioned, this report takes as its starting point the fact that regardless of the details, the Highway Trust Fund is a critical source of funding for all States. Thus, if it is compromised, all States will be affected, though admittedly some more than others.<sup>21</sup> To provide a sense of the importance of the HTF to New York in particular, it is worthwhile to briefly highlight some key figures. Between 1996 and 2000, New York received \$9.1 billion in combined surface transportation funding, including \$4.8 billion for highways and \$4.3 billion for transit.<sup>22</sup> Of this, over \$8 billion was derived from the HTF.

The combined figure (i.e. funding from the HTF and the General Fund) represented 11% of total funding sources for highway and transit in New York State during that same time period. The remainder was provided via State (31%) and Local (58%) sources.<sup>23</sup> The relatively small proportional share of Federal government funds dedicated to transportation in New York belies the importance of their role since depending upon which program they come under and how they are utilized within the State, their impact can be quite dramatic. Thus, even at 11%, the Federal share is an essential component to the overall funding streams for New York. Moreover, given the current fiscal and budgetary difficulties combined with the unmet needs in New York State, the Federal share may be more important in years to come.

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<sup>19</sup> FHWA, Office of Policy Development, *Highway Trust Fund: A Primer*, p. 9.

<sup>20</sup> Prior to TEA-21, the Rostenkowski test was applied to the Mass Transit Account. It required that anticipated revenues in the coming 12-month period, rather than 24-month period, be greater than unfunded authorizations at the end of the fiscal year in which apportionments were made.

<sup>21</sup> A recent NYU Wagner Rudin Center report focuses on the issue of equity in federal transportation funding. For more see, Mark Seaman and Allison L. C. de Cerreño, *Dividing the Pie: Placing the Transportation Donor-Donee Debate in Perspective* (NY: Rudin Center for Transportation Policy and Management, May 2003).

<sup>22</sup> *Ibid.*, p. 4.

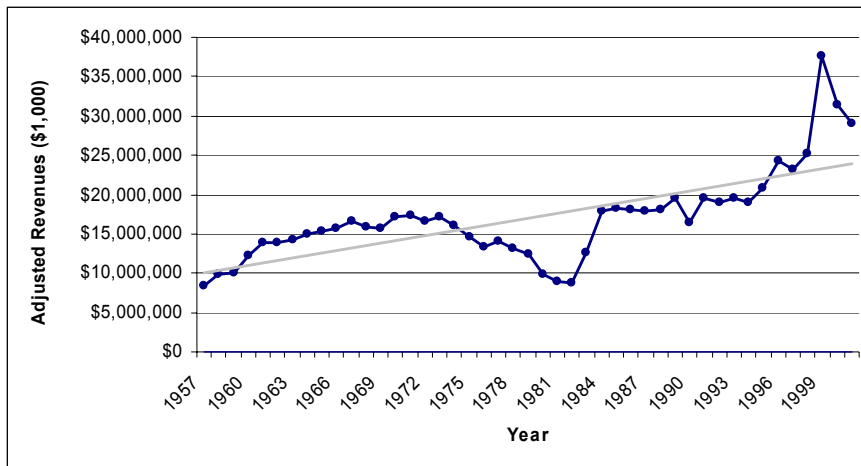
<sup>23</sup> *Ibid.*, p. 12. By way of comparison, on average States receive 18% of their funding from the Federal government.



## 2. CHALLENGES TO THE HIGHWAY TRUST FUND

The underlying weakness of the Federal Highway Trust Fund is its overwhelming reliance on motor fuel excise taxes, and in particular gasoline and diesel taxes, which together account for over 80% of receipts.

**Figure 3. Inflation-Adjusted Federal Motor Fuels\* Revenues, 1957 – 2001 (2001 dollars), with Trend Line**



\*Includes all motor fuel taxes. Between 1957 and 1982, receipts were derived from gasoline, diesel, and special fuels. Beginning in 1983, receipts from gasohol are also included.

Source: U.S. DOT, FHWA, Office of Highway Policy Information, *Highway Statistics 2001*. Washington, DC: FHWA, 2002), FE-210. [www.fhwa.dot.gov/ohim/hs01/hs01fe-210](http://www.fhwa.dot.gov/ohim/hs01/hs01fe-210) and author's calculations based on the CPI.

Historically, this reliance on motor fuel taxes has not been an issue. Indeed, since the inception of the HTF, the general trend in motor fuels revenues to the Fund has been upward (Figure 3). However, as indicated by the several of the notable ups and downs (in particular, the period between 1973 and 1983 which corresponds to a national recession), there is no question that this revenue can be volatile and is affected by fluctuations in the economy. More importantly, although the general trend has been upward to date, there are several factors that indicate this may not remain the case much longer if upcoming policies fail to take into account important trends.

First, under current revenue and spending baselines the HTF revenue stream is unlikely to be able to keep pace with the rising costs of transportation projects. In his May 2002 Testimony before the U.S. Senate Committee on Finance, Kim Cawley of the Congressional Budget Office noted that according to current baseline projections (i.e. spending at current enacted levels with adjustments for inflation combined with the current tax policies), the Highway Account of the HTF would be depleted by 2006 with the Mass Transit Account falling to \$0 three years later.<sup>24</sup>

Given that tax policies and spending levels are likely to change, perhaps more telling is the state of the HTF balance. Cawley explained that during TEA-21 the HTF's Highway Account balances grew because receipts outpaced outlays. (Indeed, as was discussed in the previous Section, this has been the case since the HTF's inception.) However, during the same period (TEA-21), highway program funding was

<sup>24</sup> U.S. Senate, Committee on Finance, *Congressional Budget Office Testimony*, "Status of the Highway Trust Fund – Statement of Kim P. Cawley, Chief, Natural & Physical Resources Cost Estimates Unit," 9 May 2002, p. 6. <http://finance.senate.gov/hearings/testimony/050902kctest.pdf>

increased significantly and many obligations have not yet been discharged. According to Cawley, as of May 2002, the program's unpaid obligations were 22% more than at the end of 1998.<sup>25</sup> In fact, at the end of FY 2001, the balance in the Highway Account of the HTF totaled \$20.4 billion but outstanding obligations totaled \$40 billion.<sup>26</sup> Similarly, the Mass Transit Account showed a balance of \$7.4 billion but obligations not yet liquidated totaled \$1.2 billion.<sup>27</sup> These figures do not take into account the dollars needed to meet currently unfunded needs estimated by the Federal government as between \$90.7 and \$127.5 billion over the next twenty years.<sup>28</sup> Further, as the AASHTO report points out, these figures do not take into account the backlog of repairs, replacements, and upgrades necessary to bring the existing system up to standard.<sup>29</sup>

Second, a recent draft report by Cambridge Systematics, Inc. for the AASHTO Standing Committee on Planning, notes that there is a "disconnect between fixed rate fuel taxes and general economic indicators such as rates of inflation and changes in overall economic measures such as gross domestic product (GDP)."<sup>30</sup> Because raising taxes is politically difficult, there is often a significant time lag between rate adjustments leading to continual erosion of purchasing power as a result of inflation. Further, the Cambridge Systematics, Inc. report points out that motor fuels revenues have failed to keep pace with the expanding economy and the resulting capacity needs it generates. For example, the percentage of GDP spent by the Federal government on transportation declined between 1975 and 1997, from 0.73% to 0.43% of GDP.<sup>31</sup>

Finally, there are a number of emerging factors, most notably the potential increase in fuel efficiency, as well as the use of alternative fuel or hybrid vehicles. All of these points lead some experts to conclude that although motor fuel taxes will remain important in the near-term, they are not – as currently structured – a viable means for maintaining sufficient revenue streams to the HTF in the longer-term.

## 2.1 Gasohol and Other Alternative Fuels

Promoted as a clean and renewable fuel source, ethanol is produced in the United States from corn. Mixed with gasoline, the resulting blend is referred to as gasohol, with the most common being a blend of 10% ethanol and 90% gasoline.<sup>32</sup> Among the immediate factors negatively affecting HTF revenues, the

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<sup>25</sup> U.S. Senate, "Status of the Highway Trust Fund – Statement of Kim P. Cawley," p. 8. Also see FHWA, *Highway Statistics* series, Table HB-2.

<sup>26</sup> FHWA, *Highway Statistics 2001*, Table FE-10 and U.S. Senate, "Status of the Highway Trust Fund – Statement of Kim Cawley," p. 3.

<sup>27</sup> U.S. Senate, "Status of the Highway Trust Fund – Statement of Kim Cawley," p. 4.

<sup>28</sup> USDOT, FHWA & FTA, *2002 Status of the Nation's Highways, Bridges, and Transit* – Executive Summary, pp. ES-12, ES-13.

<sup>29</sup> AASHTO, *Transportation – Invest in America: The Bottom Line*, p. 3.

<sup>30</sup> Cambridge Systematics, Inc., "Review of the Potential Feasibility of Using Alternative Revenue Sources to Fund Future State Transportation Needs," Prepared for AASHTO Standing Committee on Planning as part of TRB-NCHRP Project 08-36, Task 23 - July 2002, Draft report, p. 5.

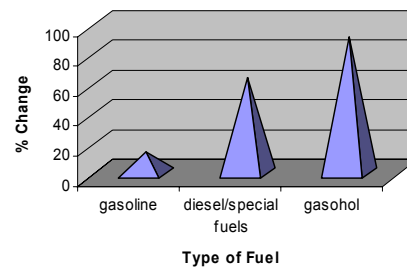
<sup>31</sup> *Ibid.*, p. 6.

<sup>32</sup> On 1 January 1993, as a result of the Energy Policy Act of 1992, the definition of gasohol was expanded. Prior to the Act, gasohol was defined as a blend of gasoline and at least 10% fuel alcohol (by volume); blends containing less than 10% alcohol were taxed as gasoline. Since 1993, the product referred to as 10% percent gasohol corresponds to the old definition, but two additional types

current status of the excise tax on gasohol is often cited for two reasons. First, gasohol is partially exempt from federal excise taxes. While gasoline is taxed at 18.4 cents per gallon, the current partial exemption for gasohol is currently 5.2 cents per gallon, for a full tax of only 13.2 cents per gallon. Second, of the 13.2 cents per gallon collected, 2.5 cents is diverted to the General Fund. While gasohol is, admittedly, still a small source of HTF revenues proportionally (6% in FY 2001 – see Figure 1), its use is growing at a much faster pace than other fuel types (Figure 4).

Furthermore, even at the relatively low levels of current usage, according to March 2002 Testimony before the U.S. House of Representatives Committee on Transportation & Infrastructure by JayEtta Hecker of the Government Accounting Office, noted that as a result of these provisions, the HTF did not receive approximately \$6.01 billion (in constant 2001 dollars) between FY 1998 and FY 2001.<sup>33</sup>

Figure 4. % Change in Highway Fuel Consumption, 1991 - 2000



Source: U.S. DOT, FHWA, *Highway Statistics Series 1992-2001*, Table MF-27.

Looking forward, the forecast is that as a result of the partial exemption, the Highway Account of the HTF will forego an additional \$13.72 billion between FY 2002 and FY 2012, as well as an additional \$6.92 billion as a result of the diversion of monies to the General Fund during that same period.<sup>34</sup> Thus, the concern with gasohol is not that it is in itself undercutting the HTF revenue stream, but that the potential gains from the excise tax being levied on this motor fuel are being lost. Under the recent reauthorization proposal released by the Bush Administration, the diversion of the portion of the gasohol tax would end, with all receipts being redirected to the HTF.<sup>35</sup>

### Other Alternative Fuels

At times, other alternative fuel sources have also been mentioned as potential threats to the Highway Trust Fund. Among the alternative fuel sources that are already taxed but at much lower rates than gasoline or diesel fuels are compressed natural gas (CNG), liquefied natural gas (LNG), propane, and methanol. The concern associated with these fuels is similar to those described in Section 2.2 regarding gasohol – that is, because they are taxed at a much lower rate, as vehicles utilize these fuels in place of gasoline the relative receipts collected are much lower.

have been added. The term 7.7% gasohol includes gasoline-alcohol blends where the alcohol content is at least 7.7% but less than 10%. The term 5.7% gasohol includes gasoline-alcohol blends where the alcohol content is at least 5.7% but less than 7.7%. Since 10% gasohol is most common, unless otherwise noted, this is the gasohol blend to which the text refers.

<sup>33</sup> U.S. House of Representatives, "Highway Financing: Factors Affecting Highway Funding Fluctuation and Revenue Trends – Statement of JayEtta Z. Hecker." Also see U.S. Congress, Senate, Committee on Finance, *U.S. General Accounting Office Testimony*. "Highway Financing: Factors Affecting Highway Trust Fund Revenues – Statement of JayEtta Z. Hecker, Director, Physical Infrastructure Issues." 9 May 2002. GAO-02-667T.

<sup>34</sup> Ibid.

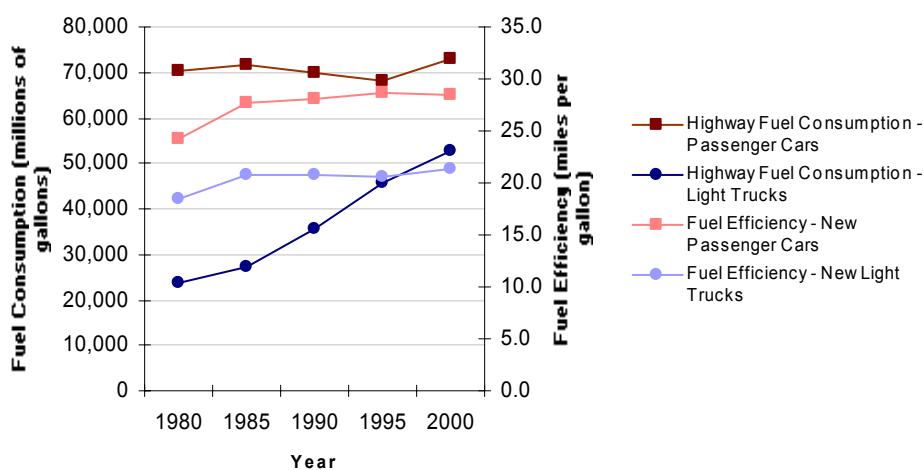
<sup>35</sup> USDOT, "Press Release on The Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2003 (SAFETEA)," 14 May 2003, p. 1. Also, see [http://www.fhwa.dot.gov/reauthorization/safetea\\_analysis.htm](http://www.fhwa.dot.gov/reauthorization/safetea_analysis.htm) for the full proposal.

For several alternative fuel sources, there are no current tax structures. Among these are: electricity (i.e., electric cars); fuel cell technologies; liquefied petroleum gas (LPG), a mix of propane and butane; natural gas; and methanol. Together, these alternative fuel sources (excluding gasohol) make up a very small percent of current motor fuel use. While there is much discussion about electric vehicles and fuel cell technologies, many experts believe they are unlikely to have a significant impact in the next two to three decades at least.

## 2.2 Increased Fuel Efficiency and CAFE Standards

The potential for increased fuel efficiency is one of the more politically awkward discussions when dealing with Highway Trust Fund revenues. On the one hand, increased fuel efficiency is desirable because it

**Figure 5. Highway Fuel Consumption and Fuel Efficiency of Passenger Cars and Light Trucks, 1980 – 2000**



Source: U.S. Department of Transportation, Bureau of Transportation Statistics, *National Transportation Statistics 2002, BTS02-08* (Washington, DC: U.S. Government Printing Office, December 2002), Tables 4-5 and 4-23.

reduces U.S. reliance on external fuel sources and it helps decrease greenhouse gas emissions. However, increased fuel efficiency also means less fuel is consumed, translating into decreased revenues for the HTF. Indeed, the Federal Highway Administration estimates that for

every 1 mpg increase in fuel efficiency, the HTF loses about \$3.5 billion in revenue.<sup>36</sup> Of that, roughly 87% is felt in the Highway Account and 13% in the Mass Transit Account.<sup>37</sup> Furthermore, notwithstanding the fact that for the last fifteen years, the fuel efficiency of new passenger cars and light trucks<sup>38</sup> has

<sup>36</sup> Urban Mobility Corporation, "Financing Future Transportation Needs Part III: Long Term Alternatives – New Funding Concepts," *Innovation Briefs* 13, 5 (September/October 2002).

<sup>37</sup> U.S. House of Representatives, *Hearing on Long-Term Outlook on Highway Trust Fund: Are Fuel Taxes a Viable Measure?* "Testimony of Larry King, Deputy Secretary for Planning, Pennsylvania Department of Transportation on behalf of AASHTO," 16 July 2002.

<sup>38</sup> Light trucks refer to pick up trucks, minivans, and sports utility vehicles.

remained relatively flat (Figure 5), the technology already exists for greater fuel efficiency so how to deal with this conundrum is a realistic concern.<sup>39</sup>

The corporate average fuel economy (CAFE) standards were mandated by the Energy Policy and Conservation Act of 1975 and affect all manufacturers selling over 10,000 vehicles in a given year. The standards are divided into 4 areas: imported passenger cars; domestically-produced passenger cars; 2-wheel drive light trucks; and 4-wheel drive light trucks.<sup>40</sup> To be in compliance, a manufacturer must ensure that the average fuel efficiency of its vehicles in a particular category meet or exceed the specified standard. Today's standard for passenger vehicles is 27.5 miles per gallon (mpg); for light trucks it is 20.7 mpg.<sup>41</sup> The rationale for a lower standard for light trucks was that vehicles in this category were predominantly used for farming and construction, but in more recent years, light trucks have come to include minivans and sports utility vehicles – SUVs – as well, which are utilized primarily as passenger vehicles.

The CAFE standards for passenger cars have not been changed since 1985 and for light trucks, the same level standard has been in place since 1996. To date, all recent bills that have sought to raise and/or modify the CAFE standards have failed, but there is ongoing political pressure stemming primarily from the growth in the proportion of the vehicle fleet now made up by light trucks. Light trucks accounted for 30% of the entire U.S. vehicle fleet in 1988, but as a result of the popularity of minivans and SUVs, that number had grown by 1994 to just over 40%; by 2000 it was roughly 45%.<sup>42</sup> Even as fuel consumption for passenger cars has remained relatively steady since 1980, fuel consumption for light trucks has increased significantly (Figure 5). Indeed, between 1985 and 1995, the share of gas consumption for light trucks increased at an annual rate of 4.5%.<sup>43</sup>

What does this all mean for the Highway Trust Fund? The Fund has been a beneficiary of the sharp increase in fuel consumption among light trucks even as fuel consumption among passenger vehicles remained relatively steady. However, that is likely to change. On December 16, 2002, the National Highway Traffic Safety Administration (NHTSA) issued a notice of proposed rulemaking to the U.S. Office of Management and Budget. It proposed an increase in fuel efficiency standards for light trucks of 0.5 mpg each year for 3 years, beginning with the manufacturer model year 2005. Thus, by 2007 the CAFE standard for light trucks would be 1.5 mpg more than the current standard. If FHWA's estimate of the HTF

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<sup>39</sup> The *average* fuel efficiency of passenger cars (new and used) and of light trucks had a more dramatic increase between 1980 and 1990 but also leveled off during the past decade and even worsened a bit in recent years. In 2000, average fuel efficiency for passenger cars was 21.9 mpg and for light trucks was 17.4 mpg.

<sup>40</sup> In 1992, the two categories for all light trucks were combined. Vehicles over 8,500 pounds are exempt. Though the standard is the same for all passenger cars, manufacturers must meet them separately for the two passenger car categories.

<sup>41</sup> U.S. Congressional Budget Office, *Reducing Gasoline Consumption: Three Policy Options* (November 2002).  
<http://www.cbo.gov/showdoc.cfm?index=3991&sequence=0>.

<sup>42</sup> Robert Bamberger, "Automobile and Light Truck Fuel Economy: The CAFE Standards," *Issue Brief for Congress*, U.S. Library of Congress, Congressional Research Service (30 January 2003), IB90122, p. 6.

<sup>43</sup> <http://www.ncseonline.org/NLE/CRSreports/03Feb/IB90122.pdf>.

<sup>43</sup> Ibid.

losing \$3.5 billion in revenue for every 1 mpg increase in fuel efficiency is correct, then this rulemaking would certainly have a negative impact on the HTF revenue stream even as other policy goals are met.

### 3. ALTERNATIVE REVENUE SOURCES

There are several ways to think about alternative revenue sources for the federal Highway Trust Fund and two broad slices are taken in the following pages. Options are grouped into broad categories of user-related revenue sources and non-user related revenue sources. They are further characterized as near-term (often depicted as enhancements) or long-term alternatives.

Much work has been done to develop a means for categorizing and evaluating alternative revenue sources for the Federal Highway Trust Fund. In particular, Arlee Reno and Joseph Stowers identified a number of parameters by which to judge alternatives in *Alternatives to Motor Fuel Taxes for Financing Surface Transportation Improvements*, NCHRP Report 377. Modified more recently, among the key categories generally used when assessing new revenue sources are the following:

- Adequacy and Stability. New revenue sources should be compared to current and future sources and to current and future needs. Their potential for fluctuating should also be taken into account.
- Simplicity and Ease of Implementation. How readily can the new source be placed into effect and can the chances for evasion be minimized?
- Equity. New revenue sources should be assessed for fairness. In other words, will certain economic or social groups a disproportionate share of the burden?
- Economic and Cost Efficiency. Are benefits maximized in relation to the use of resources? Are the costs to society for a trip and the price paid for that trip commensurate?
- Political Acceptability. What is the likelihood of acceptance of the new revenue source by policy leaders and the public?<sup>44</sup>

When discussing potential options, these parameters will be used in this report as well, though the assessments have primarily been assembled and distilled from other sources rather than performed directly by the author.

#### ***A Word about Innovative Financing***

Before moving on to discuss alternative revenue sources, it is worthwhile to take a moment to touch on “innovative financing” since it is a phrase that has been bandied about frequently over the past few years. There are several broad categories of innovative financing: relaxing financial restrictions on the use of federal aid; establishing financing institutions at the state level (e.g. State Infrastructure Banks – SIBs); providing federal credit assistance; developing private-public partnerships.<sup>45</sup> With the possible exception of this last category, innovative financing does not generally create *new* sources of revenues. Indeed,

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<sup>44</sup> Based on Arlee T. Reno and Joseph R. Stowers, *Alternatives to Motor Fuel Taxes for Financing Surface Transportation Improvements*, Transportation Research Board, National Cooperative Highway Research Program (NCHRP), Report 377 (Washington, DC: National Academy Press, 1995); Cambridge Systematics, Inc., “Review of the Potential Feasibility of Using Alternative Revenue Sources to Fund Future State Transportation Needs,” Draft report; and Florida Department of Transportation, “Issue Paper: Alternative Transportation Revenue Sources,” Prepared for the Transportation Research Board, National Conference on Transportation Finance (August 2000).

<sup>45</sup> U.S. Congress, Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals* (January 1998), <http://www.cbo.gov/>.

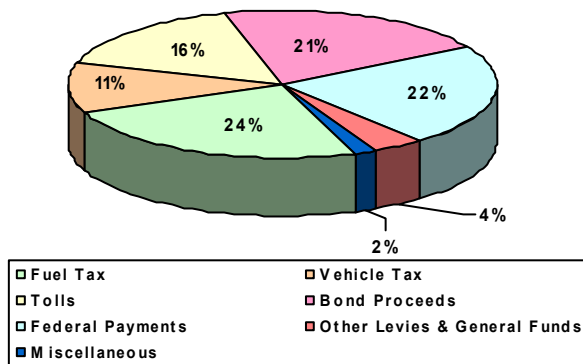
innovative financing is simply a means for making funding available sooner and may serve as a means for managing revenue streams more effectively.<sup>46</sup> Thus, the various forms of innovative financing cannot truly augment the HTF revenue streams and are therefore not discussed in the following pages.

### 3.1 Revisiting Fuel Taxes

Raising taxes is one of the more politically heated options for increasing revenues to the federal Highway Trust Fund, but at least in the short-term this is an alternative to be seriously considered at both the Federal and State levels of government. Since many of the dilemmas facing State transportation funding and application of fuel excise taxes mirror the Federal difficulties, it is worthwhile to broaden the discussion since their may be similar answers for increasing revenues at both levels of government.

Taxes on fuel were first implemented at the State level over eighty years ago. Oregon was the first State

**Figure 6. NY State Revenues for State-Administered Highways by Source Used, 2001**



Source: Robert Puentes and Ryan Prince, "Fueling Transportation Finance: A Primer on the Gas Tax," *The Brookings Institution Series on Transportation Reform* (March 2003), p. 5, Table 2.

to adopt such a tax in 1919; within a decade all the States had fuel taxes. While the collection process, administration, and distribution formulas vary, all States use them as a way to help finance the costs of building roads, and some use the receipts to fund public transportation as well. For example, of the approximately \$5.8 billion in State motor fuel tax receipts generated in New York from 1998 – 2001, 67.5% was spent on State-administered highways; 14.2% was spent on locally-administered roads; and 16.5% was spent on transit.<sup>47</sup> If one includes federal aid funds, on average

States rely on motor fuel taxes for about three-quarters of their highway revenues.<sup>48</sup>

Motor fuel taxes form the bulk of HTF receipts; this is mirrored at the State level as well. According to a recent Brookings Institution study, "today, gas tax receipts are the most important source of revenue for

<sup>46</sup> U.S. Congressional Budget Office, *Innovative Financing of Highways: An Analysis of Proposals*, p. 3. Also, Cambridge Systematics, Inc., "Review of the Potential Feasibility of Using Alternative Revenue Sources to Fund Future State Transportation Needs."

<sup>47</sup> Puentes and Price, "Fueling Transportation Finance," p. 11. According to Puentes and Price, during this period only 11 States spent more than 5% of their State fuel tax receipts on transit – 4 of these spent more than 15%, including New York, Connecticut (24.6%), Rhode Island (19.8%), and Maryland (22.7%). See p. 12, Table 4.

<sup>48</sup> Cambridge Systematics, Inc., "Review of the Potential Feasibility of Using Alternative Revenue Sources to Fund Future State Transportation Needs," p. 1.

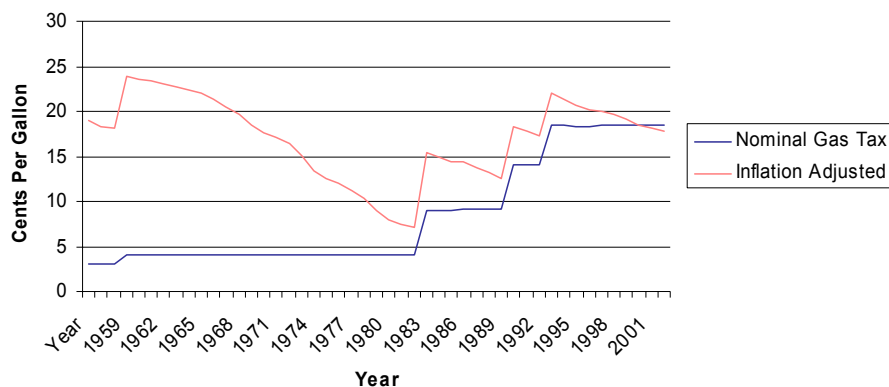


aggregate state highway spending.”<sup>49</sup> In FY 2001, \$132.9 billion was raised for highway programs across the nation by the Federal, State, and Local governments. Of this, over one-third of the total receipts were derived from gas taxes alone.<sup>50</sup> Indeed, fuel taxes were the primary means for funding highways in 29 of the 52 States, including New York (Figure 2).

The average tax rate at the State level has always been higher than that of the Federal government. New York’s tax rate for gasoline, for example, is currently 22 cents per gallon, compared to the 18.4 cents at the Federal level. However, State fuel tax rates have not kept pace with inflation. Indeed, most States’ current tax rates, though nominally higher than in 1992, have actually declined in real terms.<sup>51</sup> New York, in fact, decreased its nominal gas tax from 22.89 cents per gallon to its current 22 cents per gallon, resulting in a -24.79% change in the inflation-adjusted tax rate.<sup>52</sup> Add to this the fact that in many States, including New York, revenues from motor fuel taxes have lagged behind transportation budgets and the result is not surprising – more borrowing. In 2001, New York allocated more than 50% of State fuel tax receipts spent on highways to servicing debt.<sup>53</sup>

Federal fuel taxes have arguably done a better job of keeping pace with inflation overall if one looks to 1957 as the base year (i.e. the basket of goods one could buy with the current charge is only a bit less

**Figure 7. Nominal and Inflation-Adjusted Federal Gas Tax, 1957-2003 (2001 dollars)**



than what one could buy in 1957). However, because increases are done through legislation rather than indexed to inflation one sees a step-like pattern with sharp increases and then decreases in purchasing power over time (Figure 7). Furthermore, looking at the inflation-adjusted

federal motor fuel taxes, one can see that although important gains were made between the early 1980s and mid 1990s, to bring them in line with inflation, their real rates (adjusted for inflation) have been trending downward since 1994, and have not been anywhere near their highest levels for 40 years.

<sup>49</sup> Puentes and Price, “Fueling Transportation Finance,” p. 3.

<sup>50</sup> Ibid., p. 4.

<sup>51</sup> Ibid., p. 9, Table 3.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid., p. 10.

To keep fuel tax rates more closely in line with inflation and prevent such fluctuations, many analysts urge indexing both Federal and State motor fuel taxes to the Consumer Price Index (CPI). Such indexing for inflation would result in increases to HTF revenues but they would still not be able to keep pace with transportation needs.<sup>54</sup> Cambridge Systematics, Inc. goes a step further suggesting that the rates be indexed to general changes in the GDP as well so they can also be responsive to economic expansion.<sup>55</sup>

A greater generator of revenues in the near term would be increasing fuel taxes. It has been estimated that each one-cent increase to the gas tax alone would generate between \$1 and \$1.5 billion annually in revenues to the HTF.<sup>56</sup> Furthermore, a recent Congressional Budget Office report calculated that a 4.3 cents per gallon increase in the Federal gas tax would cost the average urban household roughly \$32 annually (in 1990 dollars); the suburban household would feel an average increase of about \$39 annually; and rural households about \$45 annually.<sup>57</sup> On average, those living in New York and New Jersey would feel an increase of about \$28 annually compared with their neighbors to the north and south who would find themselves paying roughly \$36 more annually.<sup>58</sup>

By the assessment parameters described at the beginning of this Section, motor fuel taxes rank well (not surprising given that they have formed the basis of the revenue stream for the HTF since 1957). The tax is simple to administer, difficult (though not impossible) to evade,<sup>59</sup> and compliance costs are low. Further, it is relatively equitable since it is applied as a user fee, and as the numbers in the previous paragraph demonstrate, the burden on each citizen is fairly small. All of these points have helped make the gas tax politically acceptable – at least at the current levels; raising it is another issue in the current political climate. Current discussions have included at least one proposal that would raise the gasoline tax by 5 cents per gallon. However, unless the fuel taxes are indexed at the same time to at least the CPI, the gains are likely to be quickly eroded as they have been in the past.

Furthermore, even if current motor fuel taxes were increased and indexed, the weaknesses of relying on the current structure of revenues as described in Section 2 would still hold. In the long term, alternative revenue sources beyond fuel taxes are still likely be required.

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<sup>54</sup> Urban Mobility Corporation, "Financing Future Transportation Needs – Part I: Short-Term Revenue Enhancements," *Innovation Briefs* 13, 4 (July/August 2002).

<sup>55</sup> Cambridge Systematics, Inc., "Review of the Potential Feasibility of Using Alternative Revenue Sources to Fund Future State Transportation Needs," p. 20. For a full discussion of taxing other types of fuel, see pages 19-20.

<sup>56</sup> Ibid., and Urban Mobility Corporation, "Financing Future Transportation Needs Part II: The Next Six Years," *Innovation Briefs* 13, 5 (September/October 2002).

<sup>57</sup> U.S. Congress, Congressional Budget Office, *Reducing Gasoline Consumption*, especially Chapter 6.

<sup>58</sup> Ibid.

<sup>59</sup> For an interesting case study of fuel tax evasion, see Dwight V. Denison, et al., "Cheating Our State Highways: Methods, Estimates and Policy Implications of Fuel Tax Evasion," *Transportation Quarterly* 54, 2 (Spring 2000): 47-58.

### 3.2 Other User-Related Sources of Revenues

As was the case with fuel taxes being applied first at the State level and then followed by the Federal government, many of the alternative sources of revenues for the federal Highway Trust Fund are already being applied at the State and/or Local levels of government or are being considered. The following paragraphs briefly describe each option and summarize the benefits and weaknesses for each. Several options that either currently exist or have been mentioned in the past, like emission fees, are not discussed because they are already deemed unviable in the long term.<sup>60</sup>

#### ***Vehicle Miles of Travel (VMT) Fees***

These fees are based on annual mileage and could be collected for travel within a region, a state, or nationally. Fees could be assessed either using annual odometer readings or alternatives such as hubodometers or global positioning system (GPS) equipment (the latter two cost more to deploy but it is more difficult to evade). Such fees could vary according to vehicle class. The cost of administering such fees and compliance are greater than with current fuel taxes, primarily as a result of equipment needs and monitoring and enforcing compliance.<sup>61</sup> As the Cambridge Systematics, Inc. report notes, though the VMT “would be an appropriate federal fee, either with or without parallel state and local VMT fees...it would be much easier to administer jointly if state or local programs existed that involved monitoring and checking of mileages traveled or of the vehicle miles accumulated.”<sup>62</sup> The political feasibility of VMT fees is questionable given the issues of privacy and initial costs that could be raised. Nevertheless, they may offer a promising solution to bolstering the long-term revenue streams for the HTF, particularly if alternative fuels become more prevalent.

A variation on the VMT fee is the Weight Distance Fee which is based on mileage and *weight* of a vehicle, such fees are currently in use in many States on multi-axle trucks but they could be assigned to all classes of vehicles. Such fees have the benefit of taking into account the cost of deterioration, congestion, and traffic accidents posed by different vehicle classes.<sup>63</sup>

#### ***Tolling and Value Pricing***

Tolling is already widely used throughout the United States, often as a mechanism for paying off the debt assumed when building new facilities or for maintaining conditions and making improvements. Tolls are responsive to usage though generally not to inflation (though they could be) and they can be structured

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<sup>60</sup> Emission fees face a similar difficulty to fuel taxes in the long-term. As emission requirements continue to tighten, the revenue stream from such fees will be reduced. Also, politically and socially, such fees fall into the same awkward situation as fuel taxes – the goals of raising revenues utilizing such fees run counter to other policy objectives.

<sup>61</sup> Florida Department of Transportation, “Issue Paper: Alternative Transportation Revenue Sources,” p. 4.

<sup>62</sup> Cambridge Systematics, Inc., “Review of the Potential Feasibility of Using Alternative Revenue Sources to Fund Future State Transportation Needs,” p. 24.

<sup>63</sup> Florida Department of Transportation, “Issue Paper: Alternative Transportation Revenue Sources,” p. 4.

so they are equitable across vehicle classes. However, these are more likely to be applied at state and local levels.

On the other hand, value pricing schemes that work together with VMT fees hold promise. Jon Kuhl testified before the House Subcommittee on Highways and Transit in July 2002, describing a major study in progress that aims to develop a new approach using Intelligent Transportation Systems (ITS) for charging vehicles based on their travel on public roadways. Through a Consortium of FHWA and 15 State Departments of Transportation, the new approach utilizes an on-board computer to store a record of actual road-use charges. Periodically, the data is uploaded and sent to a data processing center which then bills the owners and reimburses the appropriate operator(s) of the roadway(s) on which the vehicle traveled. The most simple application of this technology is, of course, for VMT fees, but those involved are speaking in terms of using this system to incorporate the cost of trips into the fees, thereby applying value pricing.<sup>64</sup> Of course, this system would have to overcome the same political feasibility issues raised under VMT fees.

### ***Vehicle User Fees and Sales Taxes***

Currently, States collect vehicle registration fees for all vehicle types and the Federal government levies a heavy vehicle use tax on trucks with gross vehicle weights (GVW) over 55,000 pounds. Each year, vehicles weighing between 55,000 and 75,000 pounds pay \$100 plus \$22 for each 1,000 pounds in excess of the lower figure. Trucks over 75,000 pounds pay \$550 annually. A 12% sales tax is also levied on tractors and trucks over 33,000 pounds GVW and trailers over 26,000 pounds GVW. (See Section 1 – Figure 2.) Heavy vehicles also pay tire taxes which are imposed on tire weights exceeding 40 pounds.

Such vehicle fees could be modified in several ways. First, the heavy vehicle cap, currently at \$550 could be raised. In her March 2002 Testimony before the House Transportation and Infrastructure Committee, JayEtta Hecker noted that raising the cap from \$550 to \$1,900 could generate approximately \$100 million per year.<sup>65</sup> Second, federal vehicle fees and sales taxes could be applied to other classes of vehicles, as has been done in the past (federal vehicle fees were levied from 1919-1926 and 1942-1946; federal sales taxes on passenger cars were in place from 1917 to 1971). Vehicle user fees are relatively easy to implement and difficult to evade and could provide a stable source of revenue to the HTF. However, determining how to apply such fees in an equitable manner is difficult. Sales taxes on new vehicles and parts are also easy to implement and difficult to evade, but are likely to have cyclical fluctuations – the sales tax on new vehicles is directly related to the economy while sales of parts tend to be inversely

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<sup>64</sup> U.S. House of Representatives, *Hearing on Long-Term Outlook on Highway Trust Fund: Are Fuel Taxes a Viable Measure?* “A New Approach to Assessing Road User Charges – Testimony of Jon Kuhl, Public Policy Center, University of Iowa,” 16 July 2002. <http://www.house.gov/transportation/highway/07-16-02/kuhl.html>.

<sup>65</sup> U.S. House of Representatives, “Highway Financing: Factors Affecting Highway Funding Fluctuation and Revenue Trends – Statement of JayEtta Z. Hecker.”

related. Thus, they may not be as stable as some alternatives. Nevertheless, combined with other options, they too could provide some worthwhile revenue streams for the HTF.

A variation on the vehicle user fee that could be applied at the state level is a personal property tax based on the value of motor vehicles. Kansas currently imposes this type of fee. Such fees respond to inflationary pressures and are relatively easy to administer – they can be collected annually either at the time of registration or inspection. However, they do not fair well in terms of highway user fees since they do not correspond to actual highway usage. Nevertheless, as one report has noted that “because personal property taxes are deductible for those who file federal returns with itemized deductions, a personal property tax is almost an ideal mechanism for a specific state to raise revenues....” On the other hand, such fees are not politically acceptable in many cases – perhaps because they are very much visible as opposed to fuel taxes which most people are not even aware they are paying. Indeed, some States like Virginia and Washington, which have such fees are either doing away with reducing them.<sup>66</sup>

### 3.3 Potential Non-Vehicle Related Sources of Revenues

The examples in the preceding Section were all user-related fees, but increasingly States are relying on non-user-related fees to pay for transportation and there is precedent for the Federal government to do the same (indeed, 20% of the current federal funding for mass transit is derived from the General Fund). However, such revenue sources are likely to be *supplemental* and are generally not spoken about in terms of replacing the options described above. According to a 2000 report by the Florida State Department of Transportation, there is significant potential in leasing of space and right of way. Many items (e.g., fiber optic cables and cell phone towers) require air space over existing right of way for buildings and other facilities. Such fees utilize already existing assets but would need development of a new program and guidelines for implementation.<sup>67</sup> Though not an easy task, admittedly, this may be an opportunity that should be further explored and assessed for feasibility.

Finally, portions of general sales and income taxes are increasingly being dedicated at the state and local levels to finance transportation projects. Such taxes have a broad base which allows significant revenues to be raised from a marginal increase that most taxpayers do not even notice since the increments are so small. However, such taxes are also strongly regressive and are negatively affected by downturns in the economy. Because they are not related to usage, some have suggested they might be best used on multimodal programs that benefit more than just highway or transit users.

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<sup>66</sup> Cambridge Systematics, Inc., “Review of the Potential Feasibility of Using Alternative Revenue Sources to Fund Future State Transportation Needs,” p. 22. Also, Florida Department of Transportation, “Issue Paper: Alternative Transportation Revenue Sources,” pp. 4 and 6.

<sup>67</sup> Florida Department of Transportation, “Issue Paper: Alternative Transportation Revenue Sources,” p. 6.

## 4. CONCLUSION

Relying on motor fuel excise taxes for the bulk of Highway Trust Fund revenues has proven to be a successful strategy since the inception of the HTF in 1956. However, faced with current and projected transportation needs, a variety of emerging factors that are likely to erode this base, and competing national policy goals, relying on motor fuel excise taxes in the longer term to the degree they are relied upon now is likely to prove insufficient. This is not to say that motor fuel taxes should not be a part of the overall revenue stream going forward but that alternatives will be needed to bolster them.

Among these alternatives, attention should especially be paid to other types of user fees since they would continue to uphold the implicit “user compact” of the HTF, and would tend to be more efficient and equitable than general fees. Nevertheless, given the tremendous needs of the system, non-user fees are worthy of consideration as well. Furthermore, there is precedence at the State and Local levels for implementing such fees.

### ***Short-term Recommendations***

Among the short-term recommendations are the following:

- End the current diversion of 2.5 cents on gasohol from the HTF to the General Fund. Redirecting these monies would result in increased revenues to the Highway Account of approximately \$6 million annually between 2004 and 2012.<sup>68</sup> Further, judging by the current discussions and the recent proposal by the Bush Administration, there is a great deal of political support for this redirection of funds.
- Increase receipts to the Highway Account by the amount of the current partial exemption on gasohol. The partial exemption on gasohol is important for other national policy goals (i.e. increasing the use of gasohol by making it less expensive). However, as gasohol replaces gasoline it helps erode the revenue stream since fewer taxes are collected. Raising the tax may not be as politically feasible at this time, but the Highway Account could be “refunded” by the General Account for the comparable amount lost, resulting in increased revenues of about \$1.3 billion annually between 2004 and 2012.<sup>69</sup>
- Raise and index current motor fuel excise taxes to help keep pace with inflation and economic growth. Motor fuel taxes have been a successful means for funding transportation needs for almost fifty years. They are likely to be a critical source of revenues for at least the next two decades, but to mitigate the current weakness of relying on them they need to at least keep pace with inflation. Raising them, which is already being seriously discussed, will help, but unless they are indexed their purchasing power will quickly be eroded. Indexing them at the same time will help avoid this ongoing problem.
- Reinststitute the interest on the HTF balance. Under current estimates, the Highway Account could accrue \$550 million for a total of \$1.9 billion between 2004 and 2012, and the Mass Transit Account could accrue \$100 million in 2004 and a total of \$1 billion through 2012.<sup>70</sup>

### ***Mid-Term Recommendation***

In the mid-term, current non-motor fuel excise taxes (i.e., tires, truck and trailer sales, and heavy vehicle use) should be reevaluated to determine whether current taxes are in line with the costs incurred.

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<sup>68</sup> U.S. Senate, “Status of the Highway Trust Fund – Statement of Kim P. Cawley,” p. 12.

<sup>69</sup> Ibid., p. 14.

<sup>70</sup> Ibid., p. 17.

### ***Long-Term Recommendations***

If the three short-term recommendations were implemented, they would help bolster the short-term revenue base during the next reauthorization. However, revenue streams would still likely fail to keep pace with transportation needs if the revenue base shrinks due to increased fuel efficiency or alternative fuel use. Further, there is still the political conundrum of relying on motor fuel taxes for transportation funding in the face of competing policy goals.

Thus, there are several long-term recommendations as well:

- Develop policies on alternative fuels that are not currently taxed. There are several alternative fuels already in use or likely to be used at some point in the not-too-distant future. Determining the best means for taxing them as well as the rate at which they should be taxed will necessitate policy decisions that balance the desire to apply a user fee with other competing goals.
- Develop specific revenue predictions for several alternatives already being discussed. Vehicle related taxes such as vehicle miles of travel (VMT) or vehicle user fees, potentially combined with value pricing schemes hold a great deal of promise. However, full cost-benefit analyses need to be developed as well as clear policies for implementation.

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