

**Future Financing Options  
to Meet Highway and Transit Needs**

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## **Abstract**

The objective of this paper is to analyze options for all levels of government to close the nation's highway and transit investment deficits on a sustainable basis both short- and long-term. It is organized into five key sections as follows:

Current Funding Picture at all Levels of Government  
Funding Gap Including Highway Trust Fund Solvency  
Short-Term Options for Closing the Gap  
Making the Long-Term Transition  
Overall Conclusions

## **About the Author**

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Mr. Maring is an expert in Federal finance and Highway Trust Fund revenue issues; he was responsible for working with the Department of Treasury to develop periodic forecasts of revenue income to the HTF including assessment of alternative fuel impact and tax evasion on HTF revenues. Mr. Maring also has extensive international experience, including transport financing, pricing, economic, and intermodal issues.

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## **Future Financing Options to Meet Highway and Transit Needs**

### **I. Current Funding Picture at all Levels of Government**

The FHWA Highway Statistics and the FTA National Transit Database (NTD) compile summary data on Federal, state, and local funding sources used by state DOTs, local governments, and transit agencies to support highway and transit investments. These data sources were used to identify funding sources, levels of annual funding, and historical trends. For highways, data was reviewed for the last 25 years, whereas for transit, data was available in a consistent format for only the last 11 years. The most recent data available from both sources is for 2005.

Revenues collected in 2005 at all levels of government totaled \$137.7 billion for highways and \$39.4 billion for public transportation as shown in Table 1. Of the \$177 billion total, Federal revenues used for highway and transit programs constitute approximately 23 percent of the total, state revenue about 42 percent, and local about 35 percent.

**Table 1. Highway and Transit Revenue from All Levels of Government**  
*Billions of Dollars (2005)*

<b>Revenue Type</b>	<b>Federal</b>	<b>State</b>	<b>Local</b>	<b>Total</b>
<b>Highway</b>	\$33.1	\$66.1	\$38.5	\$137.7
<b>Transit</b>	\$6.9	\$8.2	\$24.3	\$39.4
<b>Total</b>	\$40.0	\$74.3	\$62.8	\$177.1
<b>Percent</b>	23%	42%	35%	100%

Motor fuel taxes and motor vehicles taxes and fees are the main sources of revenue for highway investments at the state level as they are at the Federal level, accounting for 73 to 80 percent of the total state highway funding over the last 25 years. Of the other sources (i.e., toll, general fund, specialized taxes, and miscellaneous), specialized taxes such as sales taxes are the ones that have increased significantly in terms of funding share over the last 25 years.<sup>1</sup> Specialized taxes accounted for 1.4 percent of the state highway funding in 1978, increasing to 5.6 percent by 2004. Tolls have increased slightly in share in recent years to about nine percent of total state highway revenues in 2004.

At the local government level, general fund and property taxes account for most of the highway funding. In 2003, highway funding from general fund and property taxes accounted for about two-thirds of the total highway funds. The shares of these revenue sources have declined over the last 25 years, due to increases in the funding share from

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<sup>1</sup>Specialized revenue sources include local-option sales taxes, lease revenues, and improvement district levies. They are typically applied to consumers, landowners, businesses, and homeowners. These sources are distinct from user fees because they are applied to non-transportation consumption and activity. The largest and most rapidly growing source of specialized tax revenue is state and local option sales taxes.

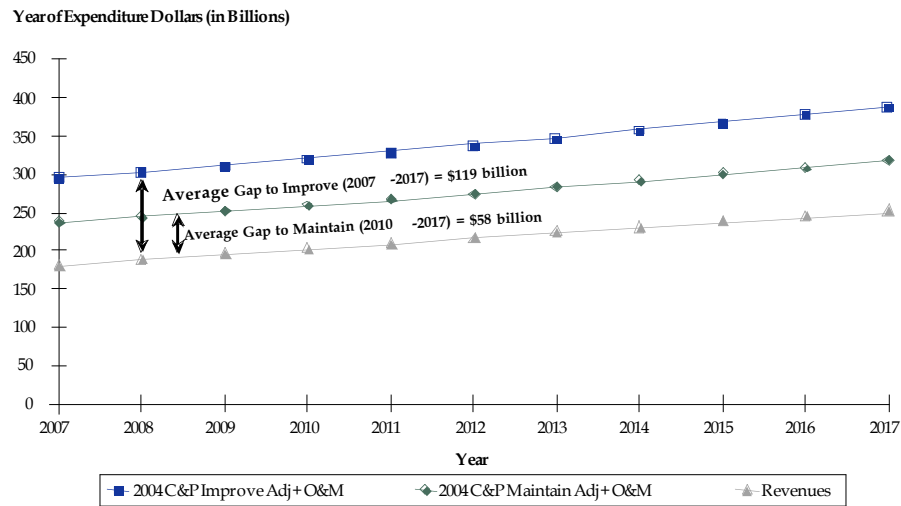
specialized taxes such as local option sales taxes. Specialized taxes accounted for 2.8 percent of the local highway funding in 1978, increasing to 11.4 percent by 2003.

For transit, passenger fares and other operating revenues accounted for 37 percent (excluding Federal allocations and apportionments), over the last 11 years on average. General funds, the next largest share, have declined over time, whereas specialized taxes such as dedicated sales taxes have become an increasingly important revenue source for transit investments. Specialized taxes accounted for 22.5 percent of transit funding in 1993, increasing to 30.1 percent by 2004.

## II. Funding Gap Including Highway Trust Fund Solvency

The recently published National Cooperative Highway Research Program project (NCHRP) 20-24(49) – Future Financing Options to Meet Highway and Transit Needs-, conducted by the author of this paper, estimates an average annual gap to “maintain” the nation’s highway and transit systems of over \$50 billion and an average annual gap to “improve” of over \$100 billion as shown in Figure 1. These estimates build upon the U.S. DOT 2004 Conditions and Performance (C&P) Report to Congress as noted below.<sup>2</sup>

**Figure 1. Highway and Transit Needs and Revenues all Levels of Government**  
2004 C&P Adj + O&M

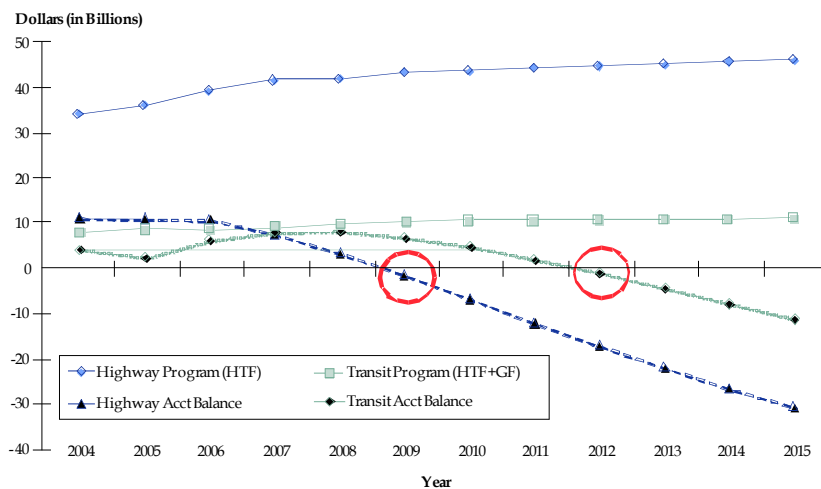


<sup>2</sup> Needs for the NCHRP study are calculated by adding noncapital highway and transit operations, maintenance, and administration costs (O&M) to capital investment requirements for the system as reported in the 2004 U.S. DOT Conditions and Performance Report to Congress (C&P) and adjusting for inflation of costs to the current year (including the increasing cost of construction as represented by the BLS Highway Producer Price Index, which has recently been increasing more rapidly than consumer prices).

## Highway Trust Fund Shortfall

Congress has periodically increased Federal motor fuel taxes to keep pace with the nation's transportation needs, but the last increase of 4.3 cents per gallon was in 1993. Federal motor fuel taxes have lost about one-third of their purchasing power to inflation since then. SAFETEA-LU did not provide for an increase in motor fuel taxes. It achieved temporarily higher funding levels by spending down the accrued balances in the trust fund accounts. Based on current Federal budget projections, the HTF Highway Account will have insufficient balances by 2009 to sustain the authorized program level as shown in Figure 2. The shortfall problem accelerates after 2009 assuming that at least modestly growing program levels are desired in the next authorization period to meet growing needs. Figure 2 is based on 2007 Treasury Mid-Session Review revenue estimates; just released Treasury revenue estimates for the 2008 Budget show little change from Mid-Session but some accounting changes apparently reduce the level of the shortfall in 2009.

Figure 2. Estimated Highway and Transit Program Levels and HTF Account Balances Through 2015 <sup>a</sup>



<sup>a</sup> Based on 2007 Treasury Mid-Session Review revenue estimates; spending assumption 2010 - 2015 based on current services baseline for discretionary outlays at 1.15% growth per year.

### III. Current and emerging funding options available to Federal, state, and local governments to help close the funding gap.

Table 2 provides a comprehensive listing of specific revenue measures being used or considered around the country based on the NCHRP review; their potential use for highway and transit funding, both for preservation and new capacity; their likely use as program-wide and/or project-specific tools; their potential yield in qualitative terms (high, medium, low), and a listing of the locations where these measures already are known to be used.<sup>3</sup>

<sup>3</sup> Revenue evaluation criteria utilized in the NCHRP 20-24(49) revenue study included: Equity, Economic Efficiency, Yield, Cost/Administrative Feasibility, Technical Feasibility, and Political Acceptability.

**Table 2. Candidate Revenue Sources**

Specific Revenue Tool	Modes				Scope		Yield	Locations Used
	Highway/Bridge		Transit		Program	Project	Potential <sup>a</sup> Yield	
	Preservation, Maintenance	New Capacity	Operations, Maintenance	Capital				
<b>Fuel Taxes</b>								
Motor fuel excise (per gallon) tax	●	●		●	●		H	All states, Federal
Indexing of the motor fuel tax (can be indexed to inflation or to other factors)	●	●		●	●		H	FL, IA, KY, ME, NE, NC, PA, WV
Sales tax on motor fuel <sup>d</sup>	●	●		●	●		H	CA, GA, HI, IL, IN, MI, NY
Petroleum franchise or business taxes	●	●		●	●		H	NY, PA
<b>Vehicle Registration and Related Fees</b>								
Vehicle registration and license fees	●	●			●		H	All states
Vehicle personal property taxes	●	●			●		M	CA, KS, VA
Excise tax on vehicle sales dedicated to transportation	●	●			●		H	CT, IA, KS, MD, MI, MN, MO, NC, NE, OK, SD, VA; Federal for heavy trucks
<b>Tolling, Pricing, and Other User Fees</b>								
Tolling new roads and bridges		●	●	●		●	M	About half of states (e.g., TX, FL, VA)
Tolling existing roads	●	●	●	●		●	L	VA proposed, others considering
HOT lanes, express toll lanes, truck toll lanes		●	●	●		●	M	CA, CO, GA, MN, TX
VMT fees	●	●	●	●	●		H	OR testing; recommended by 15 state-pooled fund study
Transit fees (fares, park-and-ride fees, other)			●		●		H	All transit agencies
Container fees, customs duties, etc.		●			●	●	M	CA
<b>Beneficiary Charges and Local Option</b>								
Dedicated property taxes	●	●	●	●	●		H	Many local governments
Beneficiary charges/value capture (impact fees, tax increment financing, mortgage recording fees, lease fees, etc.)		●		●		●	L	Many states and localities (e.g., CA, FL, OR, NY)
Permitting local option taxes for highway improvements								
• Local option vehicle or registration fees	●	●			●	●	M	AK, CA, CT <sup>b</sup> , CO, HI, ID, IN, MS <sup>b</sup> , MO, NE, NV, NH, NY, OH, SC, SD, TN <sup>b</sup> , TX, VA <sup>b</sup> , WA, WI
• Local option sales taxes	●	●			●	●	H	AL, AZ, AR, CA, CO, FL, GA, IA, KS, LA, MN, MO, NE, NV, NM, NY <sup>b</sup> , OH, OK, SC, TN, UT, WY
• Local option motor fuel taxes	●	●			●	●	M	AL, AK <sup>b</sup> , FL, HI, IL, MS, NV, OR, VA, WA
Permitting local option taxes for transit								
• Local option sales taxes			●	●	●	●	H	AL, AZ, CA, CO, FL, GA, IL, LA, MO, NV, NM, NY, NC, OH, OK, TX, UT, WA
• Local option income or payroll tax			●	●	●	●	M	IN, KY, OH, OR, WA
<b>Other Dedicated Taxes</b>								
Dedicate portion of state sales tax	●	●	●	●	●		H	AZ, CA, IN, KS, MA, MS, NY, PA, UT, VA
Miscellaneous transit taxes (lottery, cigarette, room tax, rental car fees, etc.)			●	●	●	●	L	Various states and localities
<b>General Revenue Sources</b>								
General Revenue <sup>c</sup>	●	●	●	●			H	Most states and localities

<sup>a</sup> Potential Yield; H= High, M= Medium, L= Low.

<sup>b</sup> Revenues go into General Fund but can be earmarked or used for transportation.

<sup>c</sup> For purposes of this report, the leveraging of tax subsidies through tax credit bonds and investment tax credits is treated effectively as producing revenue from general fund sources for transportation.

<sup>d</sup>In some states, revenues from sales taxes on motor fuel are not dedicated or only partially dedicated to fund transportation needs.

A critical review of the current and emerging options suggests that:

- **Fuel and vehicle taxes provide all of the revenues going into the Highway Trust Fund (HTF) and have consistently provided about 75 percent of current state highway revenues over the last 25 years.** Assuring that they keep up with needs, including the inflation of costs, must be a centerpiece of any short-term effort to close the funding gap. Adopting multiple fuel-oriented taxes (e.g., gallonage, sales taxes, and/or petroleum business or franchise taxes) has proven successful in several states and has future potential. Vehicle registration fees play an important second tier role in most states and will continue to be an important revenue source for the foreseeable future. Several states have found that dedication of motor vehicle sales taxes for transportation purposes can be an important additional tier of vehicle fees that are inflation responsive.
- **Tolling, especially in the most congested urban corridors, is becoming an increasingly important capacity expansion tool.** Although tolling currently is only about five percent of all highway revenues nationally (or about 9 percent of state highway revenue), SAFETEA-LU significantly expanded the authority for states to advance toll and value pricing projects; many more states and local authorities are considering tolling options for capacity expansion, and pricing is emerging as an important congestion management tool so we could see modest increases in the overall share of total revenues from toll and pricing in the decade or so.
- **Specialized/dedicated state and local taxes such as sales taxes and beneficiary fees have proven very effective for state and local government use for both highway and transit programs and should be considered more widely.** State and local sales tax referenda have been particularly successful for transportation purposes in recent years. More than 200 special transportation referenda have been considered by voters in the last five years with about a 65 percent success rate; a remarkably high success rate. Beneficiary charges are more of a ‘niche’ tool, particularly for faster growing localities, and can be an important part of a local package of strategies. Transit also has utilized an array of other dedicated fees such as rental car fees, mortgage or real estate transfer fees, and lottery revenues.
- **State and local governments continue to rely on general fund appropriations to support surface transportation needs.** Local governments particularly rely on general funds to support their highway expenditures, with about 46 percent of local highway revenue coming from that source in 2004. Competition with other program areas such as health care and education may limit expansion opportunities from general sources.
- **The use of existing and emerging finance tools and public private partnerships (PPP) can play an important role in raising additional investment capital and advancing project delivery.** These tools normally do not represent new resources per se, but rather, can be used to leverage the revenue mechanisms listed in Table 3 below.

## Gap Closing Potential of Packages of Funding Measures

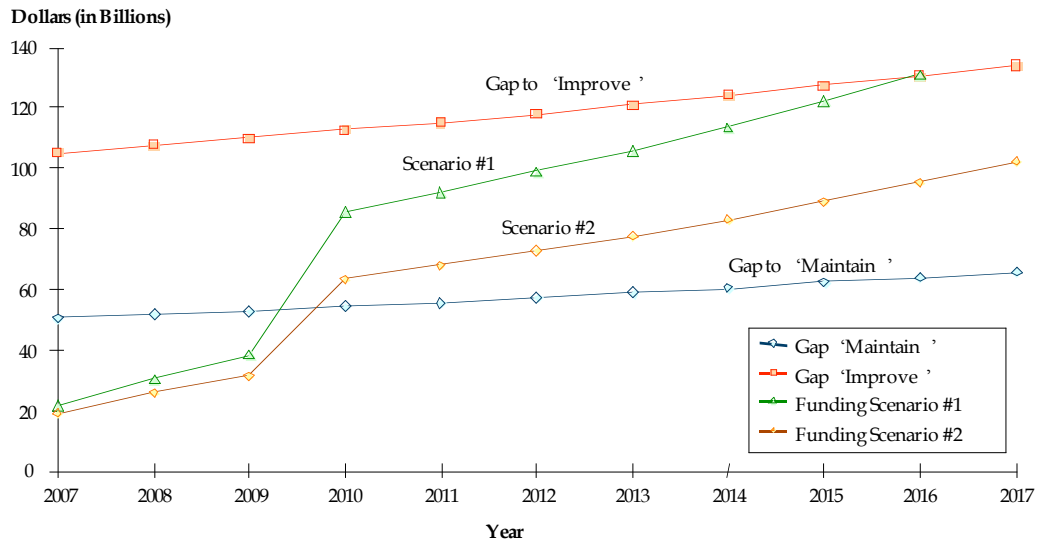
The annual and cumulative national gap-closing potential of two illustrative funding packages were tested in the recent NCHRP study as described in Table 3 below.

**Table 3. Description of National Gap Closing Scenarios**

<b>Scenario 1 – Aggressive</b>	<b>Scenario 2 – Less Aggressive</b>
<i>This scenario chooses all actions from Appendix A (except Federal vehicle light duty sales tax) and applies them at their most aggressive levels as estimated in Appendix A:</i>	<i>This scenario chooses the following actions from Appendix A at their less aggressive rates where more than one rate is shown:</i>
<ul style="list-style-type: none"> <li>• □ Federal fuel tax increase of 10 cents plus indexing;</li> <li>• □ HTF interest and exemption treatment and HVUT indexing retroactively</li> <li>• □ All other Federal revenue options in Appendix A</li> <li>• □ State fuel tax increases averaging five cents with indexing;</li> <li>• □ State sales taxes on fuel, vehicles, and general one-half cent sales statewide;</li> <li>• □ Increase tolling and pricing; and</li> <li>• □ Local option taxes, beneficiary charges, transit fees, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• □ Federal fuel tax increase of five cents plus indexing;</li> <li>• □ HTF interest and exemption treatment and HVUT indexing from 2010</li> <li>• □ Other Federal revenue options in Appendix A at their less aggressive rates</li> <li>• □ State sales tax on fuel, motor vehicles, and general one-half cent sales tax;</li> <li>• □ Increased tolling and pricing; and</li> <li>• □ Local option taxes, beneficiary charges, transit fees, etc.</li> </ul>

Their gap closing potential of the scenario packages is illustrated in Figure 3. The gap closing potential of individual measures is detailed in Appendix A.

**Figure 3. Annual Gap Closing Potential of Revenue Scenarios**



**Scenario 1, a full aggressive package of revenue enhancement strategies at all levels of government, would:**

- Fully close both the national annual gap to maintain by 2017 and the cumulative gap to maintain through 2017; and
- Close the national annual gap to improve by 2016 and the cumulative gap to improve through 2017 by almost 75 percent.

**Scenario 2, a less aggressive package of revenue enhancement strategies would:**

- Fully close both the national annual gap to maintain by 2017 and the cumulative gap to maintain through 2017; and
- Close the national annual gap to improve by 76 percent by 2017 and the cumulative gap to improve through 2017 by about 56 percent.

In addition to these gap closing scenarios which apply to all levels of government, a specific Federal Highway Trust Fund enhancement strategy was tested as illustrated in Figure 4. This illustrative Federal revenue scenario consists of the following measures:

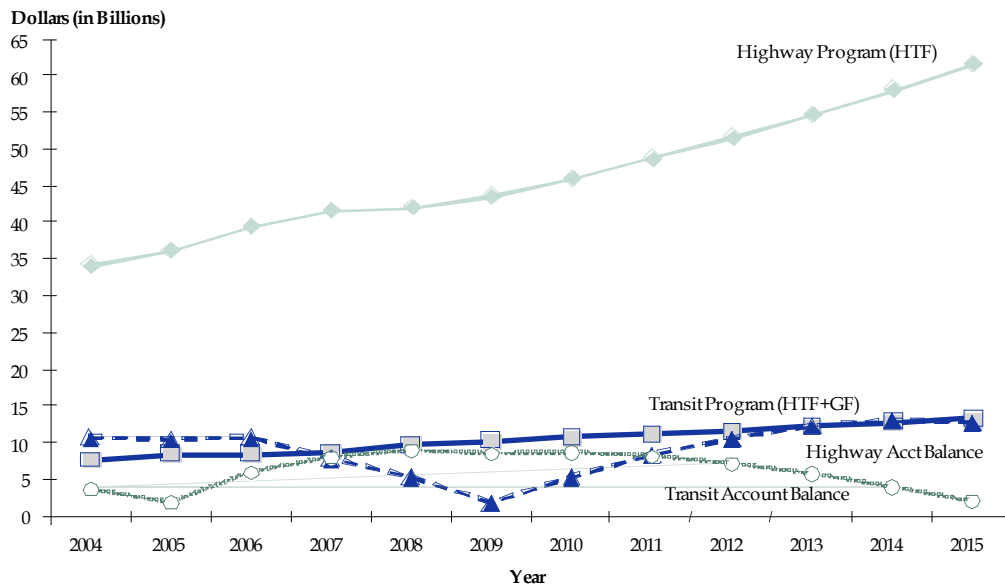
1. Eliminate the cost to the HTF of certain Federal excise exemptions beginning in 2008;
2. Credit interest earnings on HTF balances to the HTF beginning in 2008;
3. Increase the Federal fuels taxes by five cents per gallon beginning in 2010 (this would effectively recapture half of the purchasing power lost due to inflation since the last fuels tax increases in 1993); and
4. Index the Federal fuels taxes to the Consumer Price Index (CPI) beginning in 2011.

Implementation of the first two measures beginning in 2008 would generate an estimated \$2.6 billion for the Highway Account and \$3.6 billion for the HTF overall during the final two years of SAFETEA-LU – revenue likely sufficient to avoid the impending solvency crisis and enable full funding of the authorized amounts for highway and safety programs through 2009. Implementation of the other two measures would put Federal spending on a path supporting highway and transit investments that would fully meet the levels required to maintain system condition and performance. In aggregate, the package of revenue measures in this scenario would generate about \$125 billion of additional revenue for highway and transit system investments through 2017.

Implementation of all four measures contained in this scenario would enable significantly higher funding levels in the next authorization cycle. It is estimated that the combined Federal highway and transit funding could increase by about 39 percent from the SAFETEA-LU authorization level of nearly \$54 billion in 2009 to about \$75 billion by 2015.

**Figure 4. Illustrative HTF Revenue Enhancement Scenario and Index for Inflation**

*Eliminate HTF Exemptions and Recapture Interest Starting in 2008;  
Enact 5 Cent Fuel Tax Increase in 2010 and Index Forward*



#### IV. Making the Longer-Term Transition

Although much of the paper focuses on shorter-term actions that need to be taken to enhance surface transportation funding it is imperative that we begin planning the transition from the current transportation revenue system to modified or new transportation revenue systems for the future. Many have raised concern about the future viability of fuel taxes given the potential shift to alternative fuels and propulsion systems, including the possibility of higher prices speeding this trend. The recent report of the Transportation Research Board Committee for the Study of the Long-Term Viability of Fuel Taxes for Transportation Finance concluded that such erosion of fuel tax revenues is

not expected to be a significant concern in the next 10 to 15 years and that fuel price increases alone (without additional regulation) probably will stimulate only a small improvement in fuel economy in this period.<sup>4</sup> However, there is clearly longer-term vulnerability of the current motor fuel based revenue system. We need to begin planning the transition now. Burning of more and more fossil fuel to sustain our highway and transit revenue systems into the future puts transportation financing on the wrong side of energy and environmental policy.

One path of phasing and sequencing of actions needed to sustain short-term investment and transition to long-term revenue sources is summarized in Figure 5, based on recommendations originally presented in the National Chamber Foundation Finance study conducted by the author of this paper.<sup>5</sup>

For states and local governments, transition to new charging systems will inevitably be piecemeal, based on individual needs and political feasibility. The next 10 to 15 years are likely to be a period of significant experimentation with tolling, pricing, and VMT-based road charging systems driven by a number of different factors, including revenue needs as well as demand management. With Federal support for VMT pilots and promulgation of architecture and standards for the technology in the short-term, we could see fairly wide implementation of such systems in the period past 2015 as illustrated in Figure 5. Eventually, the Federal government may choose to piggyback on state VMT systems as is the case with fuel taxes now.

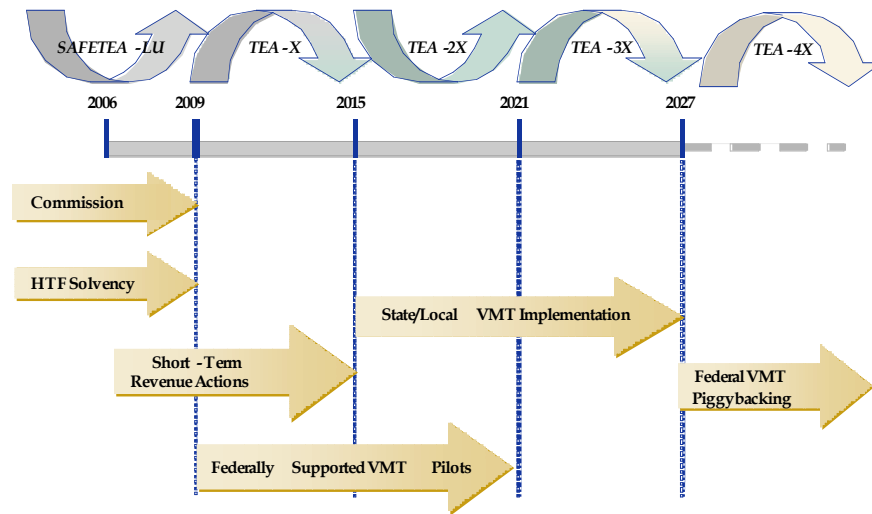
The current motor fuel tax system has been in place for more than 60 years. It will take time and a broad public education effort to develop and explain the need for a new or modified transportation revenue system and to gain political and public acceptance.

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<sup>4</sup> TRB Special Report 285, *The Fuel Tax and Alternatives for Transportation Funding*, 2005.

<sup>5</sup> U.S. Chamber Foundation; *Future Highway and Public Transportation Financing-Phase II*, by Cambridge Systematics, 2005

Figure 5. Timeframe for Transition



The TRB policy report on alternatives for transportation funding suggests that a clear policy rationale may be the most important factor in implementing new or modified revenue mechanisms.<sup>6</sup> The transition will inevitably involve policy discussion of the future Federal role in highway and transit programs, a topic being considered by the National Surface Transportation Policy and Revenue Study Commission authorized in SAFETEA-LU.

## V. Overall Conclusions

- **Motor fuel and vehicle taxes and fees are the mainstay of Federal and state highway programs, are a major contributor to transit funding, and will continue those roles for the horizon of this study.** A major challenge will be to keep them responsive to growing needs, including the impacts of cost inflation.
- **The Federal Highway Trust Fund (HTF) faces a very short-term funding challenge before the end of SAFETEA-LU and an even larger challenge in the years beyond.** A specific illustrative scenario that would solve both this short-term solvency crisis as well as provide growing funding through the next authorization cycle has been demonstrated.
- **State and local governments continue to innovate with new or expanded sources.** The largest growth in revenue shares in recent years, particularly for transit, has come from specialized taxes such as sales taxes. Impact fees and other beneficiary charges play a ‘niche’ but expanding role. Tolling and pricing innovations offer the potential to expand state and local revenues and perhaps more importantly provide incentives for additional leveraging and fostering of public private partnerships (PPP) that can play an important role in raising additional private investment capital and advancing project delivery.

<sup>6</sup> *The Fuel Tax and Alternatives for Transportation Funding, Appendix A*; TRB Special Report 285, January 2006.

- **Growing freight oriented bottlenecks suggest the need for targeted intermodal freight sources of revenue.** Container fees, Waybill fees, Customs duties, and tax credit approaches are all being actively discussed.
- **The key issue is how to successfully implement these strategies at all levels of government over the next decade and beyond to achieve the investments that are needed in our surface transportation systems.** The most successful programs to date have blended a menu of funding and financing tools that complement and, in some cases leverage, the traditional sources. Review of successful implementation at all levels of government in the NCHRP study suggests that most, if not all of the following steps, will be needed for successful implementation of major revenue-raising initiatives:
  1. Develop a consensus on the scope of current and future transportation investment needs and the importance of addressing them;
  2. Develop a specific plan and program of investments for which additional funding is needed and demonstrate the benefits expected from the proposed investments;
  3. Establish clear roles, responsibilities, and procedures for executing the plan and proposed improvements;
  4. Describe proposed revenue sources in detail and provide clear rationales for their use;
  5. Design and carry out a public education and advocacy campaign;
  6. Develop sustained leadership and support for the initiative; and
  7. Lay out a clear timetable for action.
- **Longer-term, fuel taxes will be vulnerable to fuel efficiency improvements and penetration of alternative fuels and propulsion systems for motor vehicles.** Further, continuing reliance on more use of fossil fuel will likely run counter to long-term environmental and energy needs and policies. Several recent national policy studies have recommended shifting to nonfuel-based revenue sources such as VMT fees over the next 15 to 20 years. States such as Oregon have begun tests of VMT approaches based on emerging technology. In addition to expanding the Value Pricing Program, SAFETEA-LU provided funds for testing of VMT fees through a demonstration to be led by the University of Iowa. VMT fees have many advantages, including the ability to charge directly by use by time of day, by roadway, by geographic area, by weight of the vehicle, by environmental friendliness of the vehicle, etc. Current innovations in tolling and pricing in the U. S. and abroad can help lead the way to this transition.

## Appendix A

**Table A.1 Potential Contribution of Short-Term Funding Mechanisms to Federal, State, and Local Highway and Transit Needs**  
*Year of Expenditure Dollars*

Short-Term Funding Mechanisms	Revenue Generation 2010	Revenue Generation 2017	Average Annual Revenue 2010 to 2017	Revenue Generation Cumulative 2007 to 2017	Comments
<b>Federal Revenue Options to Increase Highway Trust Fund Revenues</b>					
Index Federal fuel taxes retroactive to 1993 to capture full loss due to inflation	\$19.4 billion	\$31.7 billion	\$25.3 billion	\$202.6 billion	Would result in 10 cent fuel tax increase in 2010 with indexing to CPI thereafter.
Capture half of the loss due to inflation since 1993	\$9.6 billion	\$19 billion	\$14.1 billion	\$113 billion	Would result in five cent fuel tax increase in 2010 with indexing to CPI thereafter.
Index Federal fuel taxes starting in 2010	\$0.8 billion	\$7.6 billion	\$4.0 billion	\$32.3 billion	Index fuel tax rates to CPI starting in 2010; first year of next reauthorization cycle.
Implement motor fuel sales taxes at the Federal level	\$10.8 billion	\$14.0 billion	\$12.3 billion	\$98.4 billion	Assume three percent sales tax on motor fuels, starting in 2010.
Reinstitute Federal light duty new vehicle sales tax at rate of 3 percent	\$15 billion	\$20.4 billion	\$17.6 billion	\$141 billion	Seven percent tax phased out in 1971. Assume tax is reinstated at three percent in 2010 and deposited to HTF.
Index Heavy Vehicle Use Tax (HVUT) retroactive to 1997	\$2.1 billion	\$3.7 billion	\$2.9 billion	\$21.3 billion	Has been fixed at maximum of \$550 since 1984; assume indexing retroactive to 1997 to capture one-half loss due to inflation.
Index HVUT starting in 2010	\$30 million	\$374.3 million	\$200 million	\$1.5 billion	Assume indexing to CPI implemented in 2010.
Eliminate exemptions to HTF starting in 2008	\$1.2 billion	\$1.3 billion	\$1.2 billion	\$12.3 billion	As proposed in President's 2006 budget; shift exemptions to general fund.
Recapture interest on HTF balances starting in 2008	\$0.5 billion	\$0.5 billion	\$0.5 billion	\$5.0 billion	Depends on HTF balances; estimates assume minimal balances through next reauthorization cycle.
<b>Other Federal Revenue Options</b>					
Authorize tax credit bonds (modeled after the Senate-proposed "Build America Bonds" - assumes \$5 billion in net proceeds per year)	\$5 billion; General Fund supported	\$5 billion	\$5 billion	\$55 billion	Debt-oriented financing technique that leverages a Federal tax subsidy to generate new transportation funding.

**Table A.1 Potential Contribution of Short-Term Funding Mechanisms to Federal, State, and Local Highway and Transit Needs**  
*Year of Expenditure Dollars (continued)*

Short-Term Funding Mechanisms	Revenue Generation 2010	Revenue Generation 2017	Average Revenue 2010 to 2017	Revenue Generation Cumulative 2007 to 2017	Comments
Utilize 5 to 10 percent of current Customs duties for port and intermodal improvements	\$1.7 billion at 5 percent \$3.3 billion at 10 percent	\$2.2 billion at 5 percent \$4.5 billion at 10 percent	\$1.9 billion at 5 percent \$3.9 billion at 10 percent	\$20.0 billion at 5 percent \$40.1 billion at 10 percent	These funds would be set aside for port and intermodal purposes; 30 percent assumed to offset highway needs, such as intermodal connectors.
Authorize freight/intermodal investment tax credits (assumes \$500 million annual limit on monetization of 20-year tax credit streams)	\$1.2 billion	\$1.2 billion	\$1.2 billion	\$13.2 billion	Modeled after the Graves proposal. Only 15 percent of ITCs are estimated to fund highway or transit-related needs such as highway-rail grade crossings.
Container fees	\$1.7 billion	\$2.7 billion	\$2.2 billion	\$17.5 billion	Start in 2010; applied on all import and export containers
<b>State Revenue Options</b>					
Index state motor fuel taxes	\$1.4 billion	\$6.5 billion	\$3.8 billion	\$31.9 billion	If all states indexed fuel taxes by 2010.
Increase state motor fuel taxes to catch up for inflation losses since 2000	\$6.6 billion	\$8.6 billion	\$7.6 billion	\$70.0 billion	If all states were to catch up for inflation losses by 2010; results in average 5.2 cent increase.
Implement motor fuel sales taxes	\$8.9 billion	\$11.6 billion	\$10.1 billion	\$94.3 billion	Three percent assumed dedicated to transportation.
Raise motor vehicle registration fees to keep up with inflation	\$1.8 billion	\$6.4 billion	\$4.0 billion	\$33.4 billion	If all states were to raise in concert with inflation starting in 2007.
Use vehicle sales tax for transportation	\$6.2 billion	\$8.4 billion	\$7.2 billion	\$66.6 billion	If all states who have sales tax dedicate at least three percent of vehicle sales tax to transportation.
Portion of state sales tax dedicated to transportation	\$9.0 billion	\$12 billion	\$10.5 billion	\$108.8 billion	Assume one-half percent dedication.
Increase tolling/pricing revenues (above current 5 percent per year increase)	\$0.2 billion	\$2.4 billion	\$1.1 billion	\$8.9 billion	Estimate based on aggressive use of tolling and pricing opportunities in SAFETEA-LU.
VMT fees (future); transition from short-term toll/pricing innovation					High potential but widespread deployment assumed after 2015.
<b>Local Revenue Options</b>					
Increased use of specialized dedicated local taxes, e.g., local option taxes, impact fees, miscellaneous transit fees	\$5.3 billion	\$17.6 billion	\$10.8 billion	\$96.2 billion	Assume more aggressive growth rate of last 10 years continues.

Source: NCHRP 20-24 (49).