

April 2006

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Repository Citation

Stephen McDonald, *Why VEETC Is Not Enough: Protecting the National Highway Transportation Infrastructure*, 30 Wm. & Mary Envtl. L. & Pol'y Rev. 731 (2006), <https://scholarship.law.wm.edu/wmelpr/vol30/iss3/6>

WHY VEETC IS NOT ENOUGH: PROTECTING THE NATIONAL HIGHWAY TRANSPORTATION INFRASTRUCTURE

STEPHEN McDONALD*

INTRODUCTION

For decades, the highway has been one of the most enduring symbols of American freedom, as well as one of the primary modes of facilitating commerce among the states. As the United States has evolved both commercially and technologically, the national highway system has become increasingly vital to the success of the United States's economy, eclipsing the role previously played by railroads and dwarfing the role currently played by airways.¹ Despite the importance of the U.S. highway infrastructure, a lack of adequate funds dedicated to its creation and maintenance has left it in a state of increasing deterioration.²

Under the current system of highway funding,³ most of the revenue used to fund the creation and maintenance of the national highway infrastructure comes from state and federal gasoline taxes.⁴ Currently, this system is significantly unbalanced, leaving states without enough money to adequately manage their road-

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¹ Salvatore Massa, *Surface Freight Transportation: Accounting for Subsidies in a "Free Market,"* 4 N.Y.U. J. LEGIS. & PUB. POL'Y 285, 295-96 (2000-01).

² See *infra* notes 84-90 and accompanying text.

³ For an analysis of the operation of the Highway Trust Fund ("HTF"), see *infra* notes 64-72 and accompanying text.

⁴ Massa, *supra* note 1, at 318 (stating that the most common form of highway revenue raising is through gasoline taxes).

ways.⁵ This already inadequate system of funding roadway maintenance and construction is in serious danger of becoming further overwhelmed by a confluence of environmental, social, and economic factors that have prompted a recent movement towards more environmentally responsible transportation.⁶

While the environmental and social benefits of such a shift are clear, the long-term economic costs of such progress are much less apparent. As the movement towards more environmentally responsible methods of transportation gains momentum, it is important for both taxpayers and legislators to realize that transportation, the environment, and energy use are all related, and gains for one can equal losses for another.⁷ In the recent movement towards less environmentally harmful fuels and vehicles, the United States's system of funding the construction and maintenance of highways has largely paid the price. The federal government has only recently begun taking steps to address the very serious issue of inadequate highway funding,⁸ and

⁵ See discussion *infra* notes 85-91.

⁶ From flexible-fuel technology to hydrogen powered vehicles, there are several technologies currently being explored that, if adopted on a wide scale, would necessitate further changes in the HTF than are discussed in this paper. This Note confines its analysis to technologies that were commercially available at the time of its writing, specifically ethanol blended fuel and hybrid vehicles.

⁷ See generally AMERICAN ROAD AND TRANSPORTATION BUILDERS ASSOCIATION, THE TAX NEXUS BETWEEN FEDERAL TRANSPORTATION, ENERGY, ENVIRONMENTAL POLICIES, http://www.artba.org/pdf/ARTBA_ethanol_statement.pdf (last visited Feb. 3, 2006).

There exists a unique nexus between federal transportation, energy and environmental policies. Policies in all three areas have a common thread—the use of federal tax law involving motor fuels to advance national objectives. . . . As a result, positive impacts for one policy area sometimes contradict—or even undermine—goals and objectives in another policy area.

Id.; see also Oliver A. Pollard, III, *Smart Growth and Sustainable Transportation: Can We Get There From Here?*, 29 FORDHAM URB. L.J. 1529, 1547 (2002) (stating that “[u]ntil relatively recently, transportation policy and environmental policy operated almost completely independently of one another and often at cross purposes”).

⁸ For a summary of the Safe, Accountable, Flexible, and Efficient Transportation

unless more proactive measures are taken soon,⁹ the integrity of the national highway transportation infrastructure will continue to decline, ultimately causing widespread economic disruption.¹⁰

In October of 2004, Congress passed the American Jobs Creation Act¹¹ in an attempt to address the funding crisis facing the national highway transportation infrastructure. The Volumetric Ethanol Excise Tax Credit ("VEETC"), was attached as a rider to the Jobs Act.¹² VEETC encourages the production of ethanol-blended gasoline through various subsidies aimed at helping producers and suppliers of ethanol to bring their product to market more cheaply.¹³

VEETC directly impacts highway funding by shifting the tax burden of providing these subsidies away from the Highway Trust Fund and placing it on the General Fund.¹⁴ This helps to mitigate the annual multi-million dollar losses suffered by states under the HTF, but it does not provide any long term stability to the nation's system of highway funding. VEETC, though it is certainly a step in the right direction towards preventing a national highway

Equity Act of 2005, see Toni Johnson et al., *Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2005*, CONG. Q., Jan. 24, 2006.

⁹ This Note argues that given the dire consequences of failing to act and the continued reticence of the federal government to take appropriate measures, it is incumbent upon the states to take appropriate action to protect the integrity of the national highway transportation infrastructure.

¹⁰ For a discussion on the relationship between a well-maintained transportation infrastructure and the economic prosperity of the United States, see Paul Stephen Dempsey, *Transportation: A Legal History*, 30 TRANSP. L.J. 235 (2003).

¹¹ The American Jobs Creation Act of 2004, Pub. L. No. 108-357, 118 Stat. 1418 (2004) (enacted).

¹² For a discussion of why the ethanol excise tax credit was an appropriate addition to the Jobs Act, see discussion *infra* Part II.B.

¹³ For a complete summary of the ethanol and biodiesel provisions in VEETC, see *New Ethanol and Biodiesel Provisions in HR. 4520*, RENEWABLE FUELS ASS'N, Jan. 28, 2005, available at <http://www.ethanolrfa.org/policy/papers/view.php?id=6>.

¹⁴ Sherry Collins, *Biofuels Benched*, CORN AND SOYBEAN DIGEST, Aug. 1, 2004, at 7. For a general explanation of how revenue for the creation and repair of highways is raised, see discussion *infra* notes 62-74 and accompanying text.

infrastructure funding crisis, is merely a quick-fix solution that addresses only one factor contributing to the much larger problem of inadequate highway transportation infrastructure funding.

One major weakness of the HTF is that it is designed to rely on the extra revenue created by fuel-inefficient vehicles through a tax on the sale of gasoline.¹⁵ In fact, for the current system of highway funding to achieve sustainability, the average fuel efficiency of vehicles in the United States would have to drop considerably.¹⁶ Such a drop is unlikely, however, given recent developments in the automotive industry and an increasing national awareness about the dangers of foreign oil dependence.¹⁷

Likely developments such as an increase in the average fuel efficiency of vehicles and steadily increasing energy prices will further endanger the national highway transportation infrastructure unless a different method of funding the construction and maintenance of highways is adopted. Despite its long history, the manner in which the highway transportation infrastructure is funded has become obsolete and needs to be updated before this funding problem causes a serious national economic crisis.¹⁸ Fortunately, states are already exploring different funding mechanisms that could stop the deterioration of the nation's highways and shift the tax burden for funding the nation's highways to the people who use it most. Ultimately, states need to establish highway funding mechanisms that would either supplement or replace the state tax on gasoline.

Section I of this Note discusses the history of the highway transportation infrastructure in the United States, ultimately concluding that the national highway transportation infrastructure has grown too large to be adequately supported by the current gas tax system.¹⁹ Section II examines VEETC, particularly its tax

¹⁵ See *infra* notes 172-73 and accompanying text.

¹⁶ For a discussion on the relationship between fuel efficiency and the ability of a tax on gasoline to adequately fund the national highway infrastructure, see Part III.C.

¹⁷ See *infra* note 151 and accompanying text.

¹⁸ See Dempsey, *supra* note 10, at 238.

¹⁹ See *infra* Part I.

consequences for highway funding.²⁰ Section III discusses the factors leading the change towards greener transportation technologies and the impact those technologies have on the future of highway funding.²¹ Section IV examines two different courses of action currently being explored by states to supplement the gas tax as a means of funding their highway transportation infrastructures.²² Finally, Section V concludes that by either supplementing or supplanting the state tax on gasoline with a true road use fee, states can guarantee adequate funding for the national highway transportation infrastructure.²³

I. HISTORY OF THE NATIONAL HIGHWAY TRANSPORTATION INFRASTRUCTURE

A. *Development of the National Highway System*

The drafters of the United States Constitution recognized the importance of a well-developed transportation infrastructure by explicitly granting to Congress the power to create roadways.²⁴ Despite the fact that the framers gave Congress this power, the states were actually the first governmental entity to engage in road building.²⁵ In 1808, twenty years after the adoption of the Constitution, the United States Treasury Secretary “became the first national figure to urge a national system of roads.”²⁶

In the early days of American history, the states’ process of building roads was both slow and inefficient, and generally

²⁰ See *infra* Part II.

²¹ See *infra* Part III.

²² See *infra* Part IV.

²³ See *infra* Part V.

²⁴ U.S. CONST. art. I, § 8 (“Congress shall have Power . . . [t]o establish Post Offices and post Roads”); see also Dempsey, *supra* note 10, at 243 (discussing the importance of the Constitution’s delegation of this power to Congress); Massa, *supra* note 1, at 316-17 (discussing the history of Congress’s role in financing the nation’s highways).

²⁵ Dempsey, *supra* note 10, at 243.

²⁶ *Id.* at 244.

produced poor quality roads. In 1835, Alexis de Tocqueville wrote of travel in New York, "[i]f ever the taste for traveling takes you, I do not counsel you to choose the part of America where I am now. The roads are fearful, detestable . . . so rough that it's enough to break the toughest bones."²⁷ Given the limited usefulness of these early roadways for commercial travel, there was little incentive for states and localities to fund their development. With the advent of the automobile in the early twentieth century, however, a need soon developed to adequately fund and plan a high-quality national system of roadways.

As motor vehicles became more prevalent, their use was initially limited by the poor road conditions that existed throughout most of the nation.²⁸ Recognizing the economic potential of the automobile, Congress first "began to promote [the automobile's] growth with federal matching grants for highway construction . . . with the Federal-Aid Road Act of 1916, which established the Bureau of Public Roads, and then the Federal Highway Act of 1921."²⁹ The 1916 Act provided that the federal government would "subsidize [the] planning and funding of highway projects, while the States would construct, own, and maintain their highways."³⁰

The Federal-Aid Road Act of 1916 was significant not only for the short-term impacts it had on roadway construction, but also because it was the "first authorized federal financial participation in the construction of the nation's roads"³¹ This shift in transportation policy "changed the future of American roads . . . [by] mark[ing] the beginning of a partnership between state

²⁷ Richard F. Weingroff, *Alexis de Toqueville on Transportation in America*, U.S. DEPT OF TRANSP., FED. HIGHWAY ADMIN., <http://www.fhwa.dot.gov/infrastructure/alexis.htm> (last visited Feb. 3, 2006).

²⁸ Dempsey, *supra* note 10, at 273.

²⁹ *Id.* at 273-74.

³⁰ *Id.* at 274; *see also* Massa, *supra* note 1, at 317 (stating that "[g]enerally, federal assistance for road construction and maintenance projects consisted of appropriations to the states which in turn implemented the projects").

³¹ Craig J. Albert, *Your Ad Goes Here: How the Highway Beautification Act of 1965 Thwarts Highway Beautification*, 48 U. KAN. L. REV. 463, 469 (2000).

governments and the federal government”³² in the development of a national highway system. In the beginning years of federally organized highway construction, “user fees—initially in the form of a gasoline tax—developed to partially offset the [federal] subsidy for road construction.”³³

With the additional gasoline tax revenue, “[w]hat had previously been a haphazard network of roads developed by accidents of history and habit, politics and necessity, was to be extended and improved through a process of orderly planning.”³⁴ Progress took several years, but by the 1930s, roads and highways were being constructed all across the United States.³⁵ The problem, however, was that despite the fact that the federal government was organizing the construction of a nationwide system of interconnected roadways, the vast majority of highway construction was taking place in “rural areas and the urban fringe of cities.”³⁶ Congress addressed this issue in 1944 when it expanded the scope of national road construction by setting out an ambitious plan to connect all of the major cities and industrial centers in the United States with a “national network of high quality roads.”³⁷ It was this program that “created the impetus for the modern interstate highway system.”³⁸

Under this program, similar to the Federal-Aid Road Act of 1916, the federal government was obligated to provide money for the planning of an interconnected highway system.³⁹ This was important because a comprehensive transportation plan “can

³² *Id.* at 472-73.

³³ Massa, *supra* note 1, at 318.

³⁴ Albert, *supra* note 31, at 473; *see also* Massa, *supra* note 1, at 317 (explaining just how poorly the roads were planned and constructed at the time, stating that “by 1919, the interstate road network was still very underdeveloped; a military convoy celebrating the Allied victory in World War I expended sixty-two days traveling from Washington D.C. to San Francisco”).

³⁵ Massa, *supra* note 1, at 317.

³⁶ *Id.*

³⁷ *Id.* at 317-18.

³⁸ *Id.* at 318.

³⁹ Dempsey, *supra* note 10, at 274.

facilitate creation of an efficient and productive transportation infrastructure better able to satisfy the broader needs of the public for safe, secure, seamless, expeditious and reasonably priced transportation.”⁴⁰ It is widely understood that a well-planned and developed transportation system is a “fundamental component of economic growth” and “a fundamental element in the growth of civilization.”⁴¹ In fact, throughout history, an awareness of this has led governments to consistently make the development of a transportation infrastructure a top priority.⁴² In the 1950s, the United States government set out to accomplish this goal by articulating, for the first time, a well-developed plan for a national highway transportation infrastructure.

Though 1944 is often recognized as the beginning of the national highway system, several major highways were actually constructed before the start of World War II,⁴³ and the movement towards the construction of a unified national highway system really gained momentum in the mid-1950s. In fact, the decade after the end of World War II saw the most dramatic change in the national highway infrastructure. “During the 1950s, it was President Dwight Eisenhower who saw the need to build a national system of interstate highways to link the country for, *inter alia*, purposes of national defense.”⁴⁴ In a speech on February 22, 1955, Eisenhower emphasized the importance of a well-planned national transportation infrastructure, stating that “[t]ogether, the united forces of our communication and transportation systems are dynamic elements in the very name we bear—United States. Without them, we would be a mere alliance of many separate parts.”⁴⁵

⁴⁰ *Id.* at 238.

⁴¹ *Id.* at 239.

⁴² “Throughout history, it has been the recognition of the role transportation plays in social and economic development that has inspired a strong governmental presence in its promotion, facilitation, and regulation.” *Id.* at 240.

⁴³ Albert, *supra* note 31, at 313-14.

⁴⁴ *Id.* at 314.

⁴⁵ Richard F. Weingroff, *Federal-Aid Highway Act of 1956: Creating the Interstate System*, U.S. DEPT OF TRANSP., FED. HIGHWAY ADMIN., <http://www.fhwa.dot.gov/infrastructure/rw96e.htm> (last visited Feb. 3, 2006).

Eisenhower's vision became a reality just one year later with the passage of both the Federal Highway Act of 1956⁴⁶ and the Highway Revenue Act of 1956.⁴⁷ The Federal Highway Act was a revolutionary piece of legislation that "launched the largest public works project ever undertaken—the 43,000-mile National System of Interstate and Defense Highways."⁴⁸ The Highway Revenue Act was equally significant in scope, establishing the method of funding highway construction and maintenance still used today, the Highway Trust Fund ("HTF").⁴⁹

The HTF was a codification of the user fee idea first effectuated during early highway construction through a tax on gasoline. The HTF was designed to receive funding through revenue generated from various user charges on sales of gasoline, tires, and a weight tax for heavier vehicles.⁵⁰ At the time it was established, "Congress authorized a four cent gas tax to be paid into the Highway Trust Fund by the states, which then [made] requests against the Fund to be spent on construction of the Interstate System."⁵¹

Not only was the HTF the "first formal linkage of construction funding and user fees,"⁵² it was the first time in the history of the United States in which "Congress had earmarked taxes for specific purposes."⁵³ This was due in large part to the fact that legislation that would dedicate gasoline taxes solely to highway

⁴⁶ Federal-Aid Highway Act of 1956, 70 Stat. 374 (1956).

⁴⁷ Highway Revenue Act of 1956, 70 Stat. 390 (1956).

⁴⁸ Dempsey, *supra* note 10, at 314.

⁴⁹ *Id.*

⁵⁰ *Id.*; see also Karen L. Spinola, *The Road Less Traveled—Implications for the Goodman Oil Decision*, 38 IDAHO L. REV. 637, 646, n.67 (2002) (stating that state highway funds are raised in much the same manner, primarily through "gasoline tax; registration and license fees; gross receipts and mileage taxes; bond issues; toll and use fees; and property tax").

⁵¹ Liam A. McCann, Note, *TEA-21: Paving Over Efforts to Stem Urban Sprawl and Reduce America's Dependence on the Automobile*, 23 WM. & MARY ENVTL. L. & POL'Y REV. 857, 862-63 (1999).

⁵² Massa, *supra* note 1, at 318.

⁵³ Dempsey, *supra* note 10, at 314.

construction had been actively sought by both the automobile lobby and the highway construction lobby.⁵⁴ After the creation of the HTF, under the pressure of these interests, several states issued constitutional mandates that largely mirrored the HTF and imposed a tax on the sale of gasoline at the state level that was then earmarked exclusively for highway construction and maintenance.⁵⁵

The 1956 Federal Highway Act marked the beginning of an era in highway construction that lasted for almost forty years.⁵⁶ As this massive phase of construction on the national highway system was drawing to a close, Congress passed the Intermodal Surface Transportation Efficiency Act of 1991⁵⁷ ("ISTEA"), which mandated that further transportation construction comply with the Clean Air Act⁵⁸ and contained several other environmentally-oriented provisions.⁵⁹ In 1998, Congress reinforced the vision set forth in the ISTEA by passing the Transportation Efficiency Act of the 21st Century⁶⁰ ("TEA-21"), which reauthorized ISTEA and committed a massive amount of federal money to further infrastructure development in metropolitan areas as well as continued highway development.⁶¹ Throughout these decades of highway expansion, the primary method of funding the highway transportation infrastructure, the HTF, has not evolved in kind.

⁵⁴ Joseph F. Speelman, *The MTBE Controversy: Defending Mass Tort Claims*, 69 DEF. COUNS. J. 35, 46 (2002).

⁵⁵ Paul Sabin, *Free Markets Don't Exist and Never Could. But the Phrase is Still Used to Further a Political Agenda*, 2004-DEC LEGAL AFF. 25, 26 (2004).

⁵⁶ Dempsey, *supra* note 10, 317.

⁵⁷ Intermodal Surface Transportation Efficiency Act of 1991, Pub. L. No. 102-240, 105 Stat. 1914 (1991) (enacted).

⁵⁸ 42 U.S.C. §§ 7401-7671 (1994).

⁵⁹ Robert D. Bullard, *Addressing Urban Transportation Equity in the United States*, 31 FORDHAM URB. L.J. 1183, 1198 (2004).

⁶⁰ Transportation Equity Act for the 21st Century, Pub. L. No. 105-178, 112 Stat. 107 (1998) (enacted) (as amended by Title IX of Pub. L. No. 105-206, 112 Stat. 685 (1998) (enacted)).

⁶¹ *Id.*; see also Robert I. McMurry, *Transportation and Air Quality*, SK002 ALI-ABA 687, 692-93 (2004) (stating that Congress committed \$155 billion over six years to fund TEA-21).

B. *Current Highway Transportation Infrastructure Funding*

Currently, under the HTF, the construction and maintenance of highways is funded through a variety of revenue streams, though the primary source of income remains taxes on gasoline,⁶² which are paid directly into the HTF.⁶³ To determine how much money to pay back to each individual state, the Federal Highway Administration estimates the proper amount based on each state's total fuel consumption.⁶⁴ TEA-21 was designed to ensure that most of what states pay into the HTF is returned to them,⁶⁵ but it lapsed in 2003.⁶⁶ Congress then passed a temporary extension through the winter of 2004, but it lapsed a few months later.⁶⁷ Thus, despite the intent of TEA-21, states are still receiving less money from the HTF than they put into it through fuel taxes.⁶⁸ In 1968, Congress first began the practice of withholding some of the money that states paid into the HTF and paying it out to other sources.⁶⁹ The decision by Congress to withhold this money from the states only

⁶² See MARTIN WACHS, U.C. BERKELEY, INST. OF TRANSP. STUDIES, A DOZEN REASONS FOR RAISING GASOLINE TAXES 1 (2004), available at <http://www.its.berkeley.edu/publications/UCB/2003/rr/UCB-ITS-RR-2003-1.pdf>.

⁶³ U.S. DEP'T OF TRANSP., FED. HWY. ADMIN., *Highway Statistics 2002, Highway Finance*, <http://www.fhwa.dot.gov/policy/ohim/ho02/hfinfo.htm> (last visited Nov. 14, 2004).

⁶⁴ *Id.*

⁶⁵ McCann, *supra* note 51, at 863 (stating that "[u]nder TEA-21, states are guaranteed at least 90.5 cents in highway funds for each dollar they contribute in fuel taxes"); see also John Kincaid, *Social Standards and Labor Market Policy in American Federalism*, 1995 ST. LOUIS-WARSAW TRANSATLANTIC L.J. 133, 145-46 (1995) (explaining that the nature of the planned highway project ultimately effects the amount that a state will receive in federal funds for that project, stating that the federal government "pays 90 percent of the cost of state construction of interstate highways and smaller percentages for certain state and local roads").

⁶⁶ See Bullard, *supra* note 59, at 1198-99.

⁶⁷ *Id.*

⁶⁸ McCann, *supra* note 51, at 863.

⁶⁹ *Id.* (explaining that Congress began withholding money from the HTF in the late 1960s to offset the deficits created by the Vietnam War, and the practice continued for every new budget cycle thereafter).

exacerbated the problem that already existed with the HTF; not only did the money paid to the states by the HTF never actually correspond to the amount put into the HTF by the states, but some "donor states" receive far less per dollar than they put into HTF compared to other states.⁷⁰ Because the amount of federal funds dedicated to transportation is quite substantial,⁷¹ this disparity between what some states pay into the HTF and what they receive in return often translates into losses of huge amounts of money.⁷²

States also utilize a state-level gasoline tax to raise further revenue for their highway transportation infrastructures. The revenue raised by this tax currently constitutes a large portion of the \$40 billion spent annually on the national roadway transportation infrastructure.⁷³ State gasoline tax revenue is primarily used for highway construction and maintenance, and in thirty states, it is used exclusively for this purpose.⁷⁴ Raising and dedicating so much state gasoline tax revenue to highway construction and maintenance shortchanges other forms of transportation,⁷⁵ and costs the American taxpayer a lot of money.⁷⁶ In fact, "Americans spend more on transportation than they do on food, education, and health care. The nation's poorest families currently spend more than 40% of their take home pay on transportation."⁷⁷

⁷⁰ *Id.*

⁷¹ See McMurry, *supra* note 61, at 690 ("Federal spending on transportation accounts for a great deal of the American economy. More than \$700 billion annually—an eighth of America's economy—is devoted to transportation products and services.").

⁷² *Id.*

⁷³ *Id.*

⁷⁴ See Bullard, *supra* note 59, at 1187.

⁷⁵ "On average, states spend just \$0.55 per person of their federal transportation funds on pedestrian projects, less than 1% of their total federal transportation dollars." *Id.* Despite the implications that such inadequate spending has for urban sprawl, this figure also demonstrates how little money states believe that they are able to afford to divert from the construction and maintenance of highways.

⁷⁶ "On average, Americans spend \$0.19 out of every dollar earned on transportation expenses." *Id.* at 1188-89.

⁷⁷ *Id.* at 1189.

These extremely high figures belie the fact that the federal gasoline tax rate is lower than it has been at any previous point in the history of the United States.⁷⁸ The federal tax on a gallon of gasoline in 2004 was 18.4 cents per gallon.⁷⁹ Compared to the tax rate historically applied to the sale of gasoline, the current rate is so low that many scholars have called for both state and federal taxes on gasoline to be raised.⁸⁰ The Bush administration has adamantly opposed this idea, and most experts agree that there is almost no chance of federal gasoline taxes being raised until a new administration is elected in 2008.⁸¹ Because of this, several states recently began debating increases in gasoline taxes at the state level in order to generate more revenue for their highway systems.⁸² There is some merit to this idea, as many states have had a history of highway funding problems stemming in large part from their low state gasoline tax rate.⁸³ Low federal and state gasoline taxes are only a part of the bigger problem; as transportation technologies have evolved, a tax on gasoline has become an

⁷⁸ See Wachs, *supra* note 62.

⁷⁹ *Id.*; see also AM. PETROLEUM INST., POL'Y ANALYSIS & STAT., NATIONWIDE AND STATE-BY-STATE MOTOR FUEL TAXES, JANUARY 2004, Jan. 2004, available at <http://api-ep.api.org/filelibrary/ACF15F.pdf> (noting that nationally, the total average taxes on a gallon of gasoline equaled 42.7 cents per gallon).

⁸⁰ *Id.* For a comparative analysis of how the U.S. gasoline tax rate stacks up against the rates of other developed countries, see Tanyarat Mungkalarungsi, *The Trade and Environment Debate*, 10 TUL. J. INT'L & COMP. L. 361, 364 (2002) (stating that in 2000, gasoline taxes ranged from "eighty percent of the fuel price in Britain . . . seventy percent in France and Germany, sixty percent in Spain, and twenty-five percent in the United States").

⁸¹ Brian Friel, *Are Tolls the Answer?*, NAT'L J., Dec. 18, 2004.

⁸² BLUE RIBBON TAX REFORM COMMISSION, OPTIONS TO ADDRESS REVENUE ADEQUACY FOR FUNDING OF HIGHWAY MAINTENANCE AND CONSTRUCTION AND TO IMPROVE EQUITY (Sept. 11-12, 2003), available at http://legis.state.nm.us/lcs/blue_taxdocs/HighwayRedo.pdf; see also Spinola, *supra* note 50, at 656 (discussing how, "despite the last state fuel tax increase . . . of four cents per gallon, the gap between highway construction and maintenance costs and fuel tax revenues has been steadily widening each year").

⁸³ Editorial, *New Warning on State Road Woes*, POST & COURIER (Charleston, S.C.), Oct. 15, 2003, at 12A.

increasingly inadequate method of raising revenue for highway construction and repair.

Due to years of inadequate funding, today the national highway system "is falling apart across the country."⁸⁴ An ever-increasing population in the United States has led to an even larger increase in traffic,⁸⁵ without a corresponding rise in user fees paid into the system.⁸⁶ The inability of the highway transportation infrastructure to keep up with the demands of increased traffic and the subsequent deterioration of the roadways results from the fact that the HTF has transformed itself from a system that collects tax revenue and disburses it to the states into a system through which the federal government subsidizes the construction and maintenance of the national transportation infrastructure.⁸⁷

Unfortunately, this disparity between the intake of user-fee revenue and expenditures on the national highway system is not a new problem. Between 1921 and 1965, "less than half of the \$140 billion expended on road improvements . . . came from user taxes."⁸⁸ This problem only compounded with time; the federal

⁸⁴ McMurry, *supra* note 61, at 690.

⁸⁵ *Id.* at 696; see also ITALLADDUSUP.GOV, SIMPLE STEPS FOR DRIVERS, <http://www.italladdsup.gov/drivers/didyouknow.asp> (last visited Feb. 18, 2006) (stating that between the years 1970 and 1999, the average distance traveled by a vehicle in the United States increased by 143%).

⁸⁶ McMurry, *supra* note 61, at 690 (stating that "[w]ith increased traffic and a lack of funds, the freeway is falling apart at a rapid pace. During the past 25 years, the number of vehicles has at least doubled on most sections of the highway. Yet, the highway has not been substantially improved.").

⁸⁷ Massa, *supra* note 1, at 318-40 (explaining that "user fees have consistently fallen short of highway expenditures. Thus, the government has subsidized the nation's system of roads . . . [e]mpirical evidence demonstrates that user taxes collected for road construction and maintenance have not consistently covered the government expenditures on such projects"). The United States federal government spends approximately \$14 billion on direct fossil fuel subsidies annually, and the Bush Administration has consistently advanced policies that have steadily increased this amount. Richard L. Ottinger & Rebecca Williams, *2002 Energy Law Symposium: Renewable Energy Sources for Development*, 32 ENVTL. L. 331, 345 (2002).

⁸⁸ Massa, *supra* note 1, at 319-20.

government provided over \$9 billion in highway subsidies in 1975, and over \$49 billion in 1995.⁸⁹ Because the federal government uses the HTF less as a method of facilitating a user-fee sustained system of highway creation and maintenance and more as a system of subsidizing the national transportation infrastructure, states have been left with the near-impossible task of managing an expansive highway infrastructure with needs that greatly exceed their current revenue-raising capabilities.⁹⁰ This problem was only exacerbated by the ethanol excise tax exemption. Section II discusses this exemption in greater detail, including an analysis of a well intentioned policy initiative designed to promote the production of environmentally friendly fuel, that actually increased the shortfall of funds available to states to use for the purpose of building and maintaining roadways.

II. VOLUMETRIC ETHANOL EXCISE TAX CREDIT

A. *How VEETC Works*

The ethanol excise tax exemption, originally included as part of the National Energy Act of 1978,⁹¹ applies to the sale of gasoline blended with ethanol, called gasohol.⁹² The current

⁸⁹ *Id.* at 319.

⁹⁰ *Id.* at 323. The sheer amount of land in the United States that has been paved and requires funding is astounding. *See, e.g.,* Pollard, *supra* note 7, at 1538 (stating that “[p]ublic highways, streets, and adjacent rights of way occupy approximately 20 million acres in the United States, an area the size of South Carolina”).

⁹¹ “The National Energy Act of 1978 suspended the motor excise tax for gasoline blended with alcohol derived from bio-mass . . . namely, ethanol.” Speelman, *supra* note 54, at 38.

⁹² Gasohol is defined by the United States Environmental Protection Agency (“EPA”) as “[a] mixture of 80% or 90% petrol with 20% or 10% ethyl alcohol, for use as a fuel in internal combustion engines Vehicle fuel consisting of a mixture of gasoline and ethyl or methyl alcohol; typically 10 to 23 percent ethanol by volume.” U.S. ENVTL. PROT. AGENCY, TERMINOLOGY REFERENCE SYSTEM, http://oaspub.epa.gov/trs/trs_proc_qry.navigate_term?p_term_id=4245&p_term_cd=TERM (last visited Nov. 15, 2004).

federal excise tax on gasoline is 18.4 cents per gallon, while the federal tax on gasohol with a ten-percent ethanol blend is only 13.2 cents per gallon.⁹³ This excise tax exemption exists primarily for environmental policy reasons as an incentive to promote the production and use of gasohol.⁹⁴ The problem with the ethanol excise tax exemption was that before the passage of the Volumetric Ethanol Excise Tax Credit ("VEETC"), the 5.2 cent per gallon subsidy was paid directly out of the HTF.⁹⁵ Not only did the HTF lose the amount of the tax exemption, it was also required to pay an additional 2.5 cents per gallon as a "deficit reduction transfer."⁹⁶ Thus, because drivers paid less in federal taxes at the pump for gasohol, states received less in federal grants from the HTF, which resulted in further financial losses for states' transportation budgets.⁹⁷

VEETC maintains these ethanol subsidies, but provides a fix for the national highway funding problem that arose from the ethanol excise tax exemption. Under VEETC, the 5.2 cent ethanol excise tax exemption is not taken out of the HTF, but instead comes out of the general fund.⁹⁸ VEETC also extends the ethanol excise tax exemption through 2010 and provides "significant new flexibility to refiners with regard to ethanol blend levels."⁹⁹ Before the passage of VEETC, gasohol constituted thirty percent of the gasoline sold in the United States,¹⁰⁰ and as a result, the ethanol

⁹³ See Collins, *supra* note 14, at 7.

⁹⁴ In fact, the Ethanol Excise Tax Exemption is the "most commonly used incentive" of all federal tax incentive programs. See Ethanol.org, Environmental & Clean Air Benefits, <http://www.ethanol.org/environment.html> (last visited Oct. 1, 2004).

⁹⁵ See Collins, *supra* note 14.

⁹⁶ *Id.*

⁹⁷ See, e.g., CAL. PERFORMANCE REVIEW, INF15 REVENUES FOR TRANSPORTATION PROJECTS ARE INCREASINGLY INADEQUATE TO FUND NEEDED IMPROVEMENTS, available at <http://cpr.ca.gov/report/cprprt/issrec/inf/inf15.htm> (last visited Nov. 15, 2004) [hereinafter CAL. PERFORMANCE REVIEW].

⁹⁸ See Collins, *supra* note 14, at 7.

⁹⁹ RFA, API, NPRA Weigh in on Mid-Year Update, RENEWABLE FUEL NEWS, July 12, 2004.

¹⁰⁰ *The Benefits of Tax Incentives for Producers of Renewable Fuels and Its Impact on Small Businesses and Farmers: Hearing Before the Subcomm. on*

excise tax exemption caused an estimated loss of fourteen billion dollars a year to states' transportation budgets nationwide.¹⁰¹ Payments from the HTF to states correspond to the money paid into the HTF by individual states, so environmentally-progressive states that use gasohol faced larger losses than states still using more environmentally harmful fuel oxygenates.¹⁰²

B. Why VEETC Was Necessary

VEETC was passed to achieve a number of environmental and economic ends, though one of its main aims was to help stop states from losing money as a result of the ethanol excise tax credit under the HTF. It may seem strange that the Jobs Act included a fuel excise tax exemption, but the Act was actually designed to encourage the creation of jobs by American farms and manufacturers through tax relief, thus making VEETC an appropriate addition.¹⁰³ Not only do ethanol producers benefit from the tax provisions in VEETC, but it also helps states secure more adequate funding for the construction and maintenance of highways by revising the ethanol excise tax exemption.¹⁰⁴ VEETC would not have become necessary, however, if it was not for the recent

Rural Enterprises, Agriculture, and Technology of the Comm. on Business, 108th Cong. (2004) (statement made by Carol Werner, Executive Director, Environmental and Energy Study Institute).

¹⁰¹ James S. White, *The Ethanol in Gasoline Penalty*, WHITE ENVTL. ASSOCS., Nov. 2003, <http://www.calgasoline.com/WEAfhft04.pdf>.

¹⁰² See notes 110-12 and accompanying text. California, the largest gasohol market in the country, stood to lose approximately \$500 million per year before the passage of VEETC. CAL. ENERGY COMMISSION, *ETHANOL AS A TRANSPORTATION FUEL IN CALIFORNIA*, available at <http://www.energy.ca.gov/ethanol/index.html> (last visited Oct. 1, 2004). Like most states, California had transportation funding problems even before they adopted gasohol. Congestion caused by repairs on inadequately maintained roadways cost California \$4.7 billion in 2000, a number which was certain to worsen without the passage of VEETC. See CAL. PERFORMANCE REVIEW, *supra* note 97.

¹⁰³ John Everly, *Bill's Fuel Incentives Would Help Farmers; U.S. Senate Approves Tax Credits for Ethanol*, TELEGRAPH HERALD (Dubuque), May 23, 2004, at B4.

¹⁰⁴ See Collins, *supra* note 14, at 7.

movement away from the use of Methyl Tertiary-Butyl Ether ("MTBE") as a fuel oxygenate and towards the use of ethanol for the same purpose.¹⁰⁵

The problem with using MTBE as a fuel oxygenate is almost exclusively environmental—MTBE is highly water soluble, and even when only present at low levels, it can contaminate the water supply for an entire locality.¹⁰⁶ After years of its widespread use as an oxygenate in gasoline, EPA has detected the presence of MTBE "in [drinking water supplies] throughout the country."¹⁰⁷ Researchers at the University of California recently reported on the MTBE contamination of water supplies throughout much of California, and noted that cleanup would be both "costly and technically challenging."¹⁰⁸

As a result of the adverse environmental effects of MTBE on water supplies nationwide, EPA has formally recommended that MTBE use be phased out nationally.¹⁰⁹ In fact, EPA is actively encouraging Congress to mandate that ethanol replace MTBE as a fuel oxygenate.¹¹⁰ Of the twenty-five states that have already passed legislation prohibiting the use of MTBE as a fuel oxygenate, seventeen have also mandated the exclusive use of ethanol as MTBE's replacement.¹¹¹

¹⁰⁵ EPA defines MTBE as "a chemical compound which . . . is often added to gasoline to boost its octane or to meet clean fuel oxygen requirements." U.S. ENVTL. PROT. AGENCY, GASOLINE FUELS, *available at* <http://www.epa.gov/oms/consumer/fuels/mtbe/mtbe.htm> (last visited Apr. 8, 2006).

¹⁰⁶ See Speelman, *supra* note 54, at 36-38. In 1996, Santa Monica, California, had to abandon use of most of its water supply due to MTBE contamination from leaking underground storage tanks. As a result, three oil companies were required to provide drinking water for the citizens of Santa Monica for five years. *Id.* at 41.

¹⁰⁷ U.S. ENVTL. PROT. AGENCY, DRINKING WATER CONCERNS ABOUT MTBE, <http://www.epa.gov/mtbe/water.htm> (last visited Nov. 15, 2004).

¹⁰⁸ *Id.*

¹⁰⁹ See White, *supra* note 101; see also U.S. ENVTL. PROT. AGENCY, *Methyl Tertiary-Butyl Ether Overview*, <http://www.epa.gov/mtbe/faq.htm> (last visited Mar. 12, 2006).

¹¹⁰ *Id.*

¹¹¹ Ethanol.org, Public Policy: MTBE Bans, <http://www.ethanol.org/mtbe/bans.html> (last visited Nov. 15, 2004).

These factors combined make ethanol a serious contender to eventually replace MTBE nationwide.¹¹² “The ethanol lobby has used its strong political influence to support laws that would create a virtual monopoly in the oxygenated fuels market.”¹¹³ Gasohol has already secured a large portion of this market; it currently constitutes thirty percent of the nation’s supply of gasoline.¹¹⁴ In 2003, before both California and New York adopted their MTBE bans, 3.3 billion gallons of ethanol were produced within the United States from more than 1 billion bushels of corn.¹¹⁵ The Renewable Fuels Association anticipates that the use of ethanol will continue to accelerate, predicting that “ethanol production [will] continu[e] to break records.”¹¹⁶ This projection is based in part upon the passage of VEETC, which is widely expected to “boost ethanol plant construction by twenty percent per year for the foreseeable future.”¹¹⁷

This relatively sudden shift towards a more environmentally-friendly fuel oxygenate posed a significant threat to the national highway transportation infrastructure’s under the current gas tax system of funding. By restructuring the payment of the ethanol excise tax exemption, Congress was able to take quick action to prevent the further loss of millions of dollars from states’ transportation budgets. Unfortunately, VEETC alone is insufficient to return the highway transportation infrastructure to a level of sustainability.

¹¹² See Speelman, *supra* note 54, at 38.

¹¹³ *Id.* at 46; *see, e.g.*, 10 U.S.C.S. § 2398 (LexisNexis 2004) (mandating Department of Defense preference for purchasing gasohol over regular gasoline); 15 U.S.C.S. § 26(a) (LexisNexis 2004) (guaranteeing ethanol the same high level of economic protections as regular gasoline).

¹¹⁴ *The Benefits of Tax Incentives for Producers of Renewable Fuels and Its Impact on Small Businesses and Farmers: Hearing Before the Subcomm. on Rural Enterprises, Agric., & Tech., House Comm. On Small Bus., 108th Cong. (2004)* (statement of Carol Werner, Executive Director, Environmental and Energy Study Institute) [hereinafter *Benefits of Tax Incentives*].

¹¹⁵ Chris Anderson, *Energy Mandate Unlikely*, PANTAGRAPH, June 18, 2004, at C1.

¹¹⁶ *Id.*

¹¹⁷ *Id.*

Though VEETC solves the portion of the highway funding problem caused by the ethanol tax exemption, the future integrity of the national highway infrastructure is not yet secure. In the same way that changing the oxygenate in gasoline created very real economic problems for highway funding, current and impending changes in the automotive industry have the potential to do the same, if not much worse. Under the current system of highway funding, as the average fuel efficiency of vehicles begins to rise, the already-inadequate gasoline tax will generate less revenue than it does now.

III. THE CHANGING FACE OF TRANSPORTATION IN AMERICA

A. *Changes in the American Automotive Industry*

Currently, the national highway transportation infrastructure is critically underfunded, despite the fact that gas tax revenues have been boosted by a slow decline in the average fuel efficiency of vehicles on American roadways for the past nearly twenty years. In 2003, cars on American roads averaged only 20.1 miles per gallon ("mpg"), a six percent drop from the late 1980s, due primarily to the popularization of sport utility vehicles ("SUVs") in the 1990s.¹¹⁸ In the following years, the fuel efficiency of vehicles on American roads continued their slow decline, and by the turn of the century, the

¹¹⁸ *Id.* (stating that the average fuel economy of new vehicles in 1988 was 22.4 mpg). Only 3.5% of the new cars sold in 2003 were able drive thirty miles or more per gallon. Carol Emert, *New Cars Headed in Reverse on Fuel Usage Only 3.5 Percent of Next Year's Models hit 30 MPG Threshold*, S.F. CHRON., Oct. 30, 2002, at A1; see also Barbara Stark, *Sustainable Development and Postmodern International Law: Greener Globalization?*, 27 WM. & MARY ENVTL. L. & POL'Y REV. 137, 166 (2002) (explaining that SUVs receive an exemption under the Corporate Average Fuel Economy ("CAFE") regulations, which removes any legal incentive for auto makers to produce more fuel-efficient SUVs. The federal government promises to be of no help with the problem of SUVs contributing to a low national average gas mileage; "[t]he Bush administration is not only committed to keeping this [CAFE] dispensation [for SUVs] in place, it has recently dropped support for a \$1.5 billion program aimed at developing more fuel-efficient cars"). *Id.*

average “fuel efficiency for 2001 model year vehicles was the lowest since 1980.”¹¹⁹ The average fuel efficiency of vehicles on American roads then plateaued for several years; EPA’s Fuel Economy Trends Report (“FETR”) calculated that the average mpg for 2004 vehicles was the exact same as the 2003 models.¹²⁰ Finally, in 2005, the average mpg for vehicles rose almost one mile per gallon, to twenty-one mpg.¹²¹ This increase was tied to the increase in market share enjoyed by manufacturers of more fuel-efficient vehicles, particularly Japanese manufacturers.¹²²

After years of manufacturing and selling vehicles with an absolute disregard for fuel efficiency, it appears as if the American automotive industry is finally being forced to change. American auto-manufacturers Ford, GM, and DaimlerChrysler (“Big Three”), who rode to record profits in the 1990s on the high profit margins generated by the sale of SUVs,¹²³ have found themselves in a precarious situation as high energy prices have significantly diminished consumer interest in fuel-inefficient SUVs.¹²⁴ Polls indicated that sixty-four percent of Americans were experiencing “financial hardship” due to rising gasoline

¹¹⁹ Pollard, *supra* note 7, at 1538.

¹²⁰ U.S. ENVTL. PROT. AGENCY, LIGHT DUTY AUTOMOTIVE TECHNOLOGY AND FUEL ECONOMY TRENDS: 1975 THROUGH 2004, July 2004, *available at* <http://www.epa.gov/otaq/fetrends.htm>.

¹²¹ U.S. ENVTL. PROT. AGENCY, LIGHT DUTY AUTOMOTIVE TECHNOLOGY AND FUEL ECONOMY TRENDS: 1975 THROUGH 2005, July 2005, *available at* <http://www.epa.gov/otaq/cert/mpg/fetrends/420r05001.pdf> (noting that though the average gas mileage for 2005 vehicles was at the highest level for new vehicles since 1996, it was still lower than its peak in 1987-88 at over twenty-two mpg).

¹²² *See generally* Jui Chakravorty, *GM Net Loss \$4.8 Billion, Much Worse Than Expected*, REUTERS INT’L VIA METRONEWS CAN., Jan. 26, 2006, *available at* <http://www.google.com> (in Google cache; search on “Chakravorty” and “GM Net Loss,” select first search result and click on “cached”).

¹²³ *See* Dorinda Elliot, *Can This Man Save The American Auto Industry?*, TIME, Jan. 30, 2006, at 35 (noting that in the 1990s, the Big Three enjoyed record profit margins of twenty-five percent on the sale of light trucks and SUVs). *Id.*

¹²⁴ *See, e.g.*, Chris Isidore, *Bumpy Road For GM, Ford*, CNN/MONEY.COM, Oct. 31, 2005, http://money.cnn.com/2005/10/31/news/fortune500/auto_outlook/ (stating that high gasoline prices have had a direct and adverse effect on the sale of SUVs).

prices after the busy hurricane season of 2005.¹²⁵ Many experts believe that higher gasoline prices are permanent: Ex-Chairman of the Federal Reserve, Alan Greenspan, declared in May of 2005 that “the recent surge in energy prices will undoubtedly be a drag from now on.”¹²⁶ Current high energy prices and the prospect that they may continue indefinitely created a consumer backlash against SUVs that hit the Big Three very hard,¹²⁷ and forced them to offer deep discounts in an attempt to spur flagging sales.¹²⁸ Unfortunately, however, these discounts and record incentives were not enough to turn things around for the Big Three; each saw a decline in sales in 2005.¹²⁹ GM and Ford posted the biggest losses of market share—twenty-three percent and twenty-six percent respectively.¹³⁰ Despite the fact that Ford and GM have been hemorrhaging U.S. market share, total domestic

¹²⁵ Jenny Deem, *What's the Breaking Point? As Gas Prices Keep Rising, Drivers Aren't Defecting From Their Cars—Yet*, DENV. POST, Oct. 13, 2005, at F-01.

¹²⁶ Fred Barbash, *Inflation Soars in September*, WASH. POST, Oct. 18, 2006, available at <http://www.washingtonpost.com/wp-dyn/content/article/2005/10/18/AR2005101800443.html>; see also *Oil in Troubled Waters*, ECONOMIST, April 28, 2005, available at http://www.economist.com/surveys/displaystory.cfm?story_id=3884623.

¹²⁷ Most market commentators agree that high gasoline prices are the primary reason that SUVs are no longer selling well. See, e.g., Bryce G. Hoffman, ‘*Black Monday*’ looms over Ford’s future, DETROIT NEWS, Jan. 22, 2006, available at <http://www.detnews.com/apps/pbcs.dll/article?AID=/20060122/AUTO01/601220408>. But see Paul Harris, *How the US Fell Out of Love with Its Cars*, GUARDIAN, Jan. 29, 2006, available at <http://www.guardian.co.uk/usa/story/0,,1697518,00.html> (arguing that the market’s current shift towards foreign cars which are smaller and more fuel-efficient is actually symptomatic of a larger culture shift away from the “open road” ideals held by the baby boomer generation). Regardless of the reason for the loss in market share for the Big Three, the numbers are astounding. “In 1979 the Big Three sold nearly nine out of every 10 [sic] vehicles on US roads. . . . By October 2005, cars made by the Big Three accounted for about 40 per cent of the US market . . .” *Id.*

¹²⁸ *Big Three CarMakers See Sales Slump in US*, BRIETBART.COM, Nov. 1, 2005, <http://www.breitbart.com/news/2005/11/01/051101214945.t2l4fd5a.html> [hereinafter *Big Three Sales Slump*].

¹²⁹ DaimlerChrysler fared the best of the Big Three, with U.S. sales declining only three percent from 2004 figures. *Id.*

¹³⁰ *Id.*

automobile sales for 2005 actually reached a four-year high.¹³¹ Thus, consumers have been purchasing new cars, just fewer from American auto manufacturers.¹³² Foreign auto manufacturers, particularly Japanese auto manufacturers, have experienced a significant increase in market share.¹³³

This sudden shift in the automobile purchasing habits of the American public has both short- and long-term consequences for the Big Three. In the short term, both Ford and GM have been forced to institute serious cutbacks; in 2005 Ford cut approximately 30,000 jobs and closed fourteen of its manufacturing plants,¹³⁴ and GM also announced plans to cut approximately 30,000 jobs and close twelve manufacturing plants.¹³⁵ These cutbacks have created additional financial burdens; the massive layoffs have potentially cost both GM and Ford tens of billions of dollars on union and pension related expenses.¹³⁶ These are difficult times for the American auto industry; GM CFO Fritz Henderson recently stated that GM is in “crisis mode,”¹³⁷ and the head of the Center for Automotive Research recently remarked that Ford’s current situation is the “most serious crisis [Ford has faced] in modern times.”¹³⁸ If GM and Ford are unable to stem

¹³¹ Chris Isidore, *A Bright, Shiny Car Wreck: The Auto Industry Is Actually in Pretty Good Shape—If You Look Past Serious Problems at GM, Ford*, CNN/MONEY.COM, Jan. 8, 2006, http://money.cnn.com/2006/01/07/news/companies/detroit_autoshow_preview/index.htm.

¹³² See generally *GM, Ford Seen Losing US Market Share*, REUTERS.COM, Mar. 31, 2006 (noting that “nimble foreign rivals” have been capturing the market share lost by the GM and Ford) [hereinafter *Losing US Market Share*].

¹³³ See Chakravorty, *supra* note 122.

¹³⁴ See Harris, *supra* note 127; see also Elliot, *supra* note 123 (noting that Ford employs a total of 123,000 people in North America—thus Ford cut almost a quarter of its domestic workforce).

¹³⁵ See Chakravorty, *supra* note 122. The same week that Ford announced its plan to cut 30,000 jobs and close fourteen plants, DaimlerChrysler announced plans to cut 6,000 jobs due to poor domestic sales. See Harris, *supra* note 127.

¹³⁶ See, e.g., Isidore, *supra* note 131.

¹³⁷ *GM CFO Agrees with York’s Sense of Urgency*, AUTOMOTIVE NEWS, Jan. 10, 2006, <http://www.autonews.com/apps/pbcs.dll/article?AID=/20060110/REG/60110021/1003/SUB&Profile=>.

¹³⁸ Hoffman, *supra* note 127.

their losses, both companies could soon be headed for serious long-term financial troubles. In 2005, both Standard & Poor's Ratings Service and Moody's Investors Service lowered Ford's credit rating to junk status,¹³⁹ and many analysts are predicting that GM may soon be forced to file for Chapter 11 protection.¹⁴⁰

To regain market share and reverse this trend of incurring serious financial losses, the Big Three must adapt to a more energy-conscious world. Specifically, the Big Three will need to fundamentally change the nature of the vehicles they offer for sale.¹⁴¹ Traditionally, the Big Three has marketed larger, fuel-inefficient vehicles,¹⁴² that produced higher profit margins than smaller, more fuel-efficient vehicles.¹⁴³ Despite all of the environmental and economic problems that arise from such reckless gasoline consumption, it is this disregard for fuel economy by the

¹³⁹ *Id.*

¹⁴⁰ *Consumers Won't Buy Car From Bankrupt Co.*, FOXNEWS.COM, Dec. 27, 2005, <http://www.foxnews.com/story/0,2933,179821,00.html> (noting that not only is GM in danger filing for Chapter 11 protection, but also that a recent study indicated that only twenty-six percent of the American public "would purchase or lease a new car from a manufacturer that had declared bankruptcy").

¹⁴¹ Though this may seem to be a rather far-fetched assertion, the Big Three are all currently in the process of making this transition. *See, e.g., Losing US Market Share*, *supra* note 132 (noting that "both GM and Ford are banking on new products," namely a "shift towards cars from trucks").

¹⁴² Sadly, the Big Three has manufactured and marketed their fuel-inefficient fleet of vehicles with little to no regard for the environmental externalities that inevitably result. For example, Ford's vehicles average only 18.8 mpg, which has given them the dubious honor of being the worst in fuel efficiency among the top six automobile manufacturers for the past five years in a row. *See Ford Crushes Clean Cars While Greenwashing Gas Guzzlers; EV Drivers Forced to Turn Over Cars to Be Crushed*, ASCRIBE NEWSWIRE, Aug. 23, 2004 [hereinafter *Greenwashing Gas Guzzlers*]. To put this in historical perspective, "Ford's current fleet of cars and trucks gets fewer miles per gallon on average than its Model-T did 80 years ago." *Id.* Not only that, but in 2004, Ford's vehicles were responsible for producing more harmful emissions than the entire country of Mexico. *Id.*; *see also* Danny Hakim, *Ford Executives Adopt Ambitious Plan to Rein in Global Warming*, N.Y. TIMES, Oct 5, 2004, at 11. These facts have led to some observers to refer to Ford as "America's oil addict." *See, e.g., Greenwashing Gas Guzzlers.*

¹⁴³ *See supra* note 123 and accompanying text.

Big Three that has kept gasoline tax revenues high enough to provide the bulk of the funding for the national highway transportation infrastructure.

With the recent steep decline in SUV sales in the United States,¹⁴⁴ the automobile market has seen significant increases in sales of more fuel-efficient vehicles.¹⁴⁵ Notably, this trend has been primarily market driven, with little help from the federal government.¹⁴⁶ In fact, the CAFE standards proposed by the Bush Administration operate in direct opposition to currently prevailing market forces; they provide no incentive for auto manufacturers to improve the fuel efficiency of the least fuel-efficient vehicles in their fleet.¹⁴⁷ Though the environmental impacts of the Bush Administration's CAFE standards are certainly negative, they are actually beneficial for short-term highway funding. By providing no incentive for automakers to improve the fuel efficiency of their least fuel-efficient vehicles, the federal government has helped to ensure that a major source of highway funding does not shrink any further—which would be the inevitable result of improving the fuel efficiency of vehicles under the current gas tax system.¹⁴⁸ Continuing to rely almost exclusively on a system of revenue creation that requires the sale of large amounts of gasoline is certainly a poor policy decision, particularly at a time when foreign oil dependence is such a pressing topic.¹⁴⁹ It is also interesting to note that the

¹⁴⁴ See Isidore, *supra* note 131 (noting that SUV sales declined twelve percent between 2003 and 2005).

¹⁴⁵ See generally *Big Three Sales Slump*, *supra* note 128.

¹⁴⁶ For an interesting discussion about the 2008 CAFE standards proposed by the Bush Administration and their shortcomings, see Daniel Ramish, *Government Regulatory Initiatives Encouraging the Development and Sale of Gas/Electric Hybrid Vehicles: Transforming Hybrids from a Curiosity to an Industry Standard*, 30 WM. & MARY ENVTL. L. & POL'Y REV. 231, 265-68 (2005).

¹⁴⁷ *Id.* at 266-67 (noting that under the new CAFE standards, "[e]xtra large trucks and SUVs that exceed 8500 pounds . . . [are] excluded from all regulation").

¹⁴⁸ See discussion *infra* Part III.C.

¹⁴⁹ See generally Edward H. Ziegler, *American Cities and Sustainable Development in the Age of Global Terrorism: Some Thoughts on Fortress America and the Potential for Defensive Dispersal II*, 30 WM. & MARY ENVTL. L. & POL'Y REV. 95, 111-13 (2005).

2008 CAFE standards ignore the advice the Bush Administration itself put forth only a few years earlier.

In 2001, the "Bush Administration's National Energy Policy Development Group created the National Energy Policy ("NEP") as an attempt to remedy the U.S.'s energy situation," particularly the country's dependence on foreign oil.¹⁵⁰ After an appraisal of current domestic fuel use trends, the NEP concluded that "transportation is responsible for twenty-seven percent of total U.S. energy consumption and, that a three mile-per-gallon increase in fuel efficiency for on road fleet vehicles would save one million barrels of oil a day."¹⁵¹ The NEP also found that cars could achieve a sixty percent increase in fuel efficiency by reducing vehicle mass and using a more efficient transmission; changes that would be easily attainable, even through the use of currently available technology.¹⁵² Indeed, with the commercial popularization of hybrid vehicles, such changes are already taking place.

B. *Hybrid Technology*

One of the most promising currently-available methods of improving automobile fuel economy is hybrid technology. Though hybrid vehicles have yet to produce the NEP's predicted fuel efficiency gains of sixty percent, most hybrids currently achieve up to a forty percent increase in fuel economy over their non-hybrid counterparts;¹⁵³ more than enough to yield substantial economic and environmental gains.¹⁵⁴ For example, an increase in the average fuel efficiency of vehicles in the United States to forty miles per gallon

¹⁵⁰ Jon Schultz, *An Analysis of the 2001 National Energy Policy: Is a Domestic Production-Based Oil Policy Appropriate for the United States?*, 12 PENN ST. ENVTL. L. REV. 307, 308 (2004).

¹⁵¹ *Id.* at 328.

¹⁵² *Id.*

¹⁵³ See Heather Munoz, *The Clean-Fuel Vehicle Tax Deduction: Will it Drive an Increase in Fuel Efficiency Standards?*, 15 VILL. ENVTL. L.J. 115, 134 (2004).

¹⁵⁴ See Schultz, *supra* note 150, at 327 (stating that "if three to four percent of America's cars were as efficient as current hybrid models, we would save the equivalent of four ANWRs").

would conserve three million barrels of oil per day and save drivers \$45 billion annually in fuel costs.¹⁵⁵ Not only would such an increase in fuel efficiency lessen domestic dependence on foreign oil, it would greatly reduce the need to drill for oil in new and environmentally-sensitive locations.¹⁵⁶ Most experts believe that improving the fuel efficiency of vehicles is an economically and environmentally superior alternative to new drilling.¹⁵⁷

Though hybrid vehicles have been available for several years, recent changes in hybrid technology have made hybrids commercially viable for the average consumer for the first time since their introduction to the automobile market.¹⁵⁸ Before 2004, hybrid vehicles did not sell very well. This is evidenced by the fact that until 2004, EPA's ten most fuel efficient vehicles have consistently comprised less than two percent of the total new automobile sales each year.¹⁵⁹ Changes in hybrid technology, rising customer interest in hybrid vehicles, rising gasoline costs, concerns about foreign oil dependence, and the arrival of American automobile manufacturers ("Big Three") to the hybrid market will all work together to ensure that hybrids will finally hold a prominent place in the automobile market.

¹⁵⁵ *Id.*

¹⁵⁶ For instance, in 2005 the Bush Administration decided to allow oil drilling in the Alaskan National Wildlife Reserve ("ANWR"). *Id.* at 328-29 (stating that "the Bush Administration [has] chosen to address the problem [of dependence upon foreign oil] by attempting to increase the domestic oil supply. This domestic production-based oil policy is unbalanced and unlikely to succeed"); see also Warren Cornwall, *Much Ado Made About Not Much Oil?*, SEATTLE TIMES, Mar. 17, 2005, available at http://seattletimes.nwsources.com/html/nationworld/2002210_277_anwrside17m.html (last visited Mar. 19, 2005) (discussing the March 16, 2005, vote by the Senate to allow drilling in ANWR which is estimated to produce, at best, only three to six percent of the United States's oil consumption). *Id.*

¹⁵⁷ See Schultz, *supra* note 150, at 328-29 (stating that "[t]he benefits of [increased automobile fuel] efficiency are huge, immediate, and inexpensive . . . [i]f the [United States] is truly interested in decreasing its dependence on oil, efficiency must play a more active role"); see also Cornwall, *supra* note 140.

¹⁵⁸ See generally Keith Naughton, *Green and Mean*, NEWSWEEK, Nov. 22, 2004, at 50.

¹⁵⁹ See Emert, *supra* note 118, at A1.

Hybrid technology finally progressed to a point where the average consumer became interested in purchasing one in 2003.¹⁶⁰ In fact, the surge of consumer interest in hybrid vehicles caught the automobile industry by surprise. Starting in 2003, prospective hybrid consumers paid to get on waiting lists for the vehicles that often stretched as long as thirteen months,¹⁶¹ while foreign automobile manufacturers scrambled to increase production to meet demand.¹⁶² In light of the dramatically declining sales of their less fuel-efficient vehicles,¹⁶³ the Big Three made their first entrance into the hybrid market in 2005.

Continuing to bank on Americans' notorious love of SUVs,¹⁶⁴ the Big Three decided that the most profitable way to enter the hybrid market was to produce hybrid SUVs and trucks.¹⁶⁵ By

¹⁶⁰ See, e.g., Naughton, *supra* note 158, at 50 (declaring that "hybrid cars [are finally] legit in the land of the SUV"); see also *Motor Trend Announces 2004 Car of the Year*, MOTOR TREND, Nov. 20, 2003, available at http://www.motortrend.com/roadtests/alternative/112_031120_coy/ (last visited Nov. 15, 2004) (discussing how a hybrid vehicle was named Motor Trend's 2004 car of the year). *Id.* at 50.

¹⁶¹ AM. INT'L AUTOMOBILE DEALERS ASSOC., *Electric!; Growing Consumer Interest in Hybrid Cars Produces Waiting Lists, Firm Prices at South Sound Car Lots*, July 12, 2004, <http://www.aiada.org/article.asp?id=19548>.

¹⁶² Toyota raised its hybrid vehicle sales target by seventy-one percent in January of 2004 and dramatically increased hybrid production on two separate occasions that same year. See AUTOWEB, *Toyota Increases Prius Production by 50 Percent*, Aug. 19, 2004, http://www.autoweb.com.au/cms/A_102397/news/article.html; see also Toyota North American Pressroom, *Toyota Announces 100K Allocation and 100K Sales For Popular Prius Mid-Size Sedan*, Sept. 30, 2004, <http://pressroom.toyota.com/Releases/View?id=TYT2004093053348>.

¹⁶³ See *supra* notes 123-33 and accompanying text.

¹⁶⁴ Debra L. Hart-Munchel, *Hybrid Cars: How They Can Reduce American Air Pollution and Oil Consumption, But Why They Are Not Replacing Traditional Gas Guzzling Cars and Trucks Just Yet*, 10 PENN ST. ENVTL. L. REV. 35, 48 (2001).

¹⁶⁵ A spokesperson for Ford recently explained Ford's decision to enter the hybrid market, saying that by making hybrid SUVs and trucks, Ford will be able to tap into the substantial pre-existing market and generate the maximum amount of interest in hybrid technology. See Michael Hiltzik, *GOLDEN STATE: Ford Expects Rules, Not Self, to Shift on Hybrid Issue*, L.A. TIMES, Aug. 26, 2004, at C1; see also Michael Hastings, *The Gas Miser*, NEWSWEEK, Sept. 6, 2004, available at <http://msnbc.msn.com/id/5830015/site/newsweek>; Greg Schneider,

putting hybrid technology in vehicles that have the worst fuel economy, it has been argued that “this is where the consumer is going to see the greatest benefit” in terms of fuel efficiency.¹⁶⁶ On average, hybrid SUVs and trucks will see a thirty percent increase in gas mileage over their non-hybrid counterparts.¹⁶⁷

The introduction of commercially viable hybrid vehicles to the market and the movement by the Big Three towards producing more fuel efficient vehicles will have a generally positive impact on the average fuel economy of vehicles on American roadways. Though it is easy to understand the environmental benefits of increased vehicle fuel efficiency, as was noted earlier, transportation, the environment, and energy use are interrelated,¹⁶⁸ and as average fuel economy increases, states will lose even more money from their transportation budgets unless they take rapid action to either supplement or completely replace the state tax on gasoline.¹⁶⁹

C. *What the Sale of More Fuel-Efficient Vehicles Means for Highway Funding*

As drivers begin to purchase and drive more fuel-efficient vehicles, domestic consumption of gasoline will decrease. When drivers purchase less gasoline, they pay an equally reduced amount of gasoline taxes. Thus, a consumer who buys a fuel-efficient vehicle that offers a thirty to forty percent increase in fuel economy will pay the same percentage less in gasoline taxes. Under the HTF, as the average fuel economy rises, both states and

U.S. Carmakers Slow to Join Hybrid Parade, Detroit to Focus on Trucks First, WASH. POST, Dec. 27, 2003, at E1.

¹⁶⁶ Schneider, *supra* note 85, at E1 (quoting Walter McManus, automotive industry analyst for J.D. Power and Associates).

¹⁶⁷ *Id.* More traditional, non-SUV hybrids typically achieve forty percent gains in fuel efficiency, though they make up a substantially smaller portion of the total number of vehicles driven in the United States, compared to SUVs. See Munoz, *supra* note 153, at 134.

¹⁶⁸ See *supra* note 7 and accompanying text.

¹⁶⁹ See Part V.

the federal government will generate less revenue to support the national highway infrastructure.¹⁷⁰

The increased highway funding shortage arising from greater vehicle fuel efficiency will have an additional consequence that could cost motorists even more. Though drivers who own more fuel-efficient vehicles will purchase less gasoline, there is no indication that they will drive any less. Thus, not only will more fuel efficient vehicles create less tax revenue, they will also create excess uncompensated wear and tear on roadways by virtue of being able to drive further on a gallon of gasoline than less fuel-efficient vehicles.¹⁷¹

This acceleration of roadway deterioration has serious financial costs aside from the actual costs of repairing the roadways. As highways and roadways deteriorate further, in addition to the increased cost of repairing the roadway, motorists will have to pay increasingly more in vehicle repair costs.¹⁷² Poor road conditions also slow the flow of traffic; not just when the roadways are repaired, but also in the general congestion caused by poor quality roadways.¹⁷³

The federal government has not demonstrated a commitment to policy options that will adequately preserve the national transportation infrastructure,¹⁷⁴ so it is incumbent on the states to secure a level of funding necessary to maintain the national transportation infrastructure. Fortunately, however, there are at least two viable alternative methods of revenue raising being

¹⁷⁰ See CAL. PERFORMANCE REVIEW, *supra* note 97.

¹⁷¹ *Id.*

¹⁷² In 2005, it was estimated that the average U.S. driver paid \$401 annually in vehicle repair costs, with significant variation between states. See TRANSP. CAL., *California Has the Roughest Roads in the Country*, <http://www.transportationca.com/displaycommon.cfm?an=1&subarticlenbr=3> (last visited Apr. 9, 2006). California estimated their average repair costs to be the highest in the nation at just under \$700 per year. *Id.*

¹⁷³ Highway traffic congestion caused by inadequately maintained roadways cost California \$4.7 billion in 2000. See CAL. PERFORMANCE REVIEW, *supra* note 97.

¹⁷⁴ See discussion Part I.B.

explored by states; Global Positioning System ("GPS") tracked per-mile user fees, and toll roads.

IV. POSSIBLE FUNDING SOLUTIONS

A. *Per-Mile User Fee Charge*

In the quest to return highway funding to a truly sustainable user-fee based system, states are exploring new methods of revenue creation, some of which completely jettison the gasoline tax. The most extreme example of this is the GPS-based "vehicle miles traveled" program, which is currently being tested in Oregon and being considered for use in California.¹⁷⁵ This is a "toll-road system that downloads GPS data and odometer readings at the gas pump to collect fuel taxes on each gallon based on the amount a motorist drives."¹⁷⁶ States may choose whether they want to entirely supplant or merely supplement the state gasoline tax with a GPS-monitored tracking system. Oregon's per-mile road user fee charges almost 1.2 cents per mile, but the per-mile fee is assessed in lieu of a gasoline tax.¹⁷⁷ The gasoline tax is still charged for vehicles without the GPS location system, which under the plan, will ultimately only be out-of-state vehicles.¹⁷⁸ As the average fuel-

¹⁷⁵ See Howard Fine, *Huge Department Proposed to Manage Infrastructure; California Performance Review*, SAN DIEGO BUS. J., Aug. 23, 2004, at 14. In 2001, the Oregon legislature commissioned the Road User Fee Task Force to explore different alternatives to the gasoline tax. The Task Force considered twenty-eight possible alternative methods of highway revenue creation before ultimately selecting a GPS-tracked user fee system. See Russ Steele, *Ridin' With a Tax Collector Onboard*, ST. NET CAP. J., Dec. 13, 2004. Shortly after Oregon instituted this program, Minnesota adopted a similar method of GPS-tracking for highway revenue raising. *Id.*

¹⁷⁶ Bob Gritzinger, *Under the Hood, with Big Brother; Forget Orwell's 1984—20 Years Later It's Our Cars That Are Giving Us Up*, AUTOWEEK, Nov. 8, 2004, at 30.

¹⁷⁷ See John Valenti, *ON THE ROADS; Drive, and Then Pay Up*, NEWSDAY, Dec. 1, 2004, at A8.

¹⁷⁸ Currently, out-of-state vehicles and older vehicles (without onboard computing equipment) are exempt from the GPS requirement. See Steele, *supra* note 175.

efficiency of vehicles increases, Oregon's 1.2 cent per mile user-fee will generate more revenue than the state gasoline tax of twenty-four cents per gallon.¹⁷⁹

A GPS-monitored tracking system is extremely simple in its operation. When the GPS-equipped car pulls up to the gas pump, onboard computers transmit data to the pump, which then calculates the appropriate user-fee to charge the driver.¹⁸⁰ By calculating the appropriate user-fee and charging the driver at the same time that the car is being refueled, this system operates in a manner very similar to the previously-existing method of charging a gasoline tax; both taxes are paid at the pump, and both happen with equal regularity.¹⁸¹

There are several other benefits to a GPS-monitored pay-as-you-go system that make it an attractive option of revenue raising for states. More than just tracking the particular roads upon which a GPS-equipped car travels, the GPS tracking system can also record the time of day during which those roads were traveled. This type of user-fee assessment is called "congestion pricing."¹⁸² Under a system of congestion pricing, drivers pay a higher user fee for using certain high-traffic roads during busier times, thus reducing the amount of congestion on those roads.¹⁸³ Also, on highways, "vehicles [could] pay to use certain lanes at peak hours."¹⁸⁴ A GPS tracking system also allows for rate differentiation among different types of vehicles, charging more for heavier

¹⁷⁹ See Valenti, *supra* note 177, at A8.

¹⁸⁰ See Steele, *supra* note 175.

¹⁸¹ James M. Whitty, manager of Oregon's Office of Innovative Partnerships and Alternative Funding, believes that this attribute is important to the continued success of this program. "Drivers will fill up just like they do now, the only difference is how the gas tax is calculated." *Id.*

¹⁸² *Id.*

¹⁸³ "To keep people off freeways at peak hours, for example, per-mile fees for city streets could be pegged at a lower rate than the highway. That could prompt people to use alternative routes." Robert Salladay, *DMV Chief Backs Tax by Mile; New Appointee has Advocated a Levy Based on How Much and Where Motorists Drive. Idea is Gaining Support, but Privacy Advocates Worry*, L.A. TIMES, Nov. 16, 2004, at B1.

¹⁸⁴ *Id.*

vehicles and even exacting a greater fee when those heavier vehicles use certain types of streets where their wear and tear will be much greater than on others.¹⁸⁵ Eventually, Oregon hopes to have their system capable of charging different road-use fees based on the fuel-efficiency of a particular vehicle, whereby less fuel efficient vehicles would pay a higher per-mile fee than vehicles with greater fuel-efficiency.¹⁸⁶

Despite all of its possible benefits, there are some issues with a GPS tracking system that should be considered by states that are interested in pursuing alternatives to a state gasoline tax. First, depending on the location and environmental setting of the GPS receiver, GPS readings can sometimes be inaccurate.¹⁸⁷ Mn/DOT determined that in order to get accurate readings in downtown areas, an electric odometer needed to be used in conjunction with the GPS recorder.¹⁸⁸ The failure of GPS to

¹⁸⁵ *Id.* (for example, “[l]arge trucks could be charged higher fees for using residential streets rather than more fortified freeways”). This is a particularly attractive benefit of a GPS tracking system, because

large trucks don’t generate enough revenue from . . . [gasoline] taxes to pay for the burden they place on roads . . . [a] large truck . . . can do as much damage on a city street as 10,000 cars, but [under the current system] it still pays the same amount of per-gallon gasoline tax, assuming the gas was purchased in [that state] in the first place.

Id.

¹⁸⁶ A system that could differentiate between types of vehicles in charging variable user-fees would further environmental and national security-related objectives of promoting fuel efficiency and thereby reducing the United States’ dependence on foreign oil. One of the main problems with any type of highway funding system that charges drivers based on the miles they drive and not the amount of gasoline they use is that it reduces the incentive for drivers to purchase fuel-efficient cars, because drivers of fuel efficient vehicles currently enjoy gasoline tax savings over drivers of less fuel-efficient vehicles. See generally Valenti, *supra* note 177.

¹⁸⁷ When the Minnesota Department of Transportation (“Mn/DOT”) studied alternatives to the gas tax, they found that “GPS had the desired accuracy in rural areas; however, the position accuracy was compromised in urban settings where tall buildings blocked satellite signals or signals bounced off buildings.” Steele, *supra* note 175.

¹⁸⁸ *Id.*

accurately record data in urban settings is a more of a serious issue in areas where "roads and jurisdictional boundaries are in close proximity," such as the Northeast.¹⁸⁹

The difficulty of obtaining accurate GPS readings in some areas and the significant cost and amount of time required to establish a national GPS monitored network¹⁹⁰ are not the only problems facing the implementation of a GPS tracking system. Privacy and informational-security issues about a GPS-monitored user-fee system have already caused privacy advocates much concern.¹⁹¹ If vehicles are able to record when and where a person has driven, privacy issues arise about where and how that data will ultimately be stored and who will have access to it.

Despite the reticence of privacy advocates to support any type of GPS tracking system, currently-existing methods of recording and storing a vehicle's data offer privacy protections for the driver. For example, GPS tracking systems equipped with smart cards store the vehicle's data within the vehicle itself, rather than transmitting it elsewhere to be stored.¹⁹² Chris Hoofnagle, Associate Director for the Electronic Privacy Information Center, warns that if the data collected by the GPS receiver is stored by governmental agencies, it will "create[] a honey pot for law enforcement information requests."¹⁹³ Regardless of where the data is stored, many transportation experts and privacy advocates believe that "legal safeguards [should] be built into any GPS-based

¹⁸⁹ *Id.* (stating that "New Jersey would be upset, for example, if vehicles were using their roads but the collection system was sending tax revenue to Pennsylvania.").

¹⁹⁰ Friel, *supra* note 81, at 3758.

¹⁹¹ See Steele, *supra* note 175.

¹⁹² With the protection of privacy in mind, the University of Iowa's Public Policy Center "has proposed a national six-year test using a more accurate GPS technique and smart cards to collect the data on board the vehicle. This data would then be transferred to a collection station using the removable smart card." *Id.* Other methods of data collection by GPS technology involve sending the signals directly back to the GPS satellites which would then be used to calculate the appropriate user-fee for the driver, or sending the signals directly to the gasoline pump from the car, which would then calculate the appropriate road-use tax. See Salladay, *supra* note 185, at B1.

¹⁹³ Steele, *supra* note 175.

mileage fee to prevent anyone other than the vehicle owner/operator from knowing the vehicle's movements without the consent of the vehicle/owner operator."¹⁹⁴

If a vehicle's data is transferred to and managed by a third party, regardless of whether that entity is private or governmental, it may ultimately prove impossible to guarantee the privacy of that data. If the information is managed by a private business, many of the privacy protections available to citizens when dealing with the government will be inapplicable.¹⁹⁵ In a post-September 11th world, legal privacy protections that usually apply to information held by private businesses do not apply to data related to travel. Specifically, under the USA Patriot Act,¹⁹⁶ the FBI can demand, without judicial oversight, the records of an individual's travel patterns.¹⁹⁷

Though GPS tracking has some issues that have not yet been perfectly resolved, it offers a real alternative to states considering either supplementing or supplanting the state tax on gasoline with a user-fee system. As the technology progresses, both the cost and the effectiveness of a GPS-monitored system will continue to improve. States who do not wish to take on such an ambitious project, however, might find the answer to their roadway funding woes in the more time-tested system of toll roads.

B. *Toll Roads*

Another possible method of raising revenue for the construction and maintenance of the national transportation infrastructure is through the increased use of toll roads. If implemented on a wide

¹⁹⁴ Gritzinger, *supra* note 176, at 30.

¹⁹⁵ *Id.* (noting that legal safeguards that would normally apply to the federal government when dealing with private information would not apply in the GPS tracking context).

¹⁹⁶ Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT ACT) Act of 2001, Pub. L. No. 107-56, 115 Stat. 272 (2001) (codified as amended in scattered sections of 50 U.S.C.) (enacted).

¹⁹⁷ 50 U.S.C.S. § 1861 (LexisNexis 2006); *see also* Gritzinger, *supra* note 176, at 30.

enough scale, "tolling could bring billions of dollars into the nation's highway system" in a short amount of time.¹⁹⁸ For this reason, many state and federal officials have been pushing to replace the gasoline tax by transforming the interstate system from one that is mostly unfettered with tolls into one that uses tolling facilities to operate on a pay-as-you-go basis.¹⁹⁹

Currently, "[o]f the 46,730 miles of road on the interstate highway system, only about 2,900 miles are tolled."²⁰⁰ Most of the currently tolled sections of highway were constructed before the Federal-Aid Highway Act of 1956.²⁰¹ In this Act, Congress agreed to provide federal funds to states for the creation and maintenance of the national highway system if the states "agree[d] not to impose tolls on the roads."²⁰² Rather than being forced to dismantle their tolled highways, states were allowed to incorporate them into the interstate system, but Congress refused to provide any funding for the tolled sections of highway.²⁰³

Congress relaxed this general prohibition on tolling in 1991 by allowing "a few states to experiment with tolling projects aimed at reducing congestion" while still receiving federal transportation funds.²⁰⁴ These projects were largely successful and ultimately produced a more sophisticated method of charging a user fee—a variable toll that increases in price with the amount of traffic on a given section of roadway at a particular time.²⁰⁵ With a variable-

¹⁹⁸ Friel, *supra* note 81 at 3758.

¹⁹⁹ *Id.* at 3755.

²⁰⁰ *Id.*

²⁰¹ 70 Stat. 374 (1956).

²⁰² Friel, *supra* note 81, at 3755.

²⁰³ "To this day, the New Jersey Turnpike, Ohio Turnpike, and other tolled interstates receive no federal support." *Id.*

²⁰⁴ *Id.* at 3756.

²⁰⁵ San Diego participated in a toll experiment project on Interstate 95. Under the terms of the project, single-occupancy vehicles are allowed to drive in the high-occupancy vehicle ("HOV") lane by paying a toll. The toll starts off at fifty cents and increases in twenty five cent increments up to four dollars as more cars enter the HOV lanes. The amount of traffic on the road and the corresponding toll are calculated automatically by sensors on the road. "The variable toll, by discouraging some lone drivers from entering the lanes at higher

toll system, toll roads are able to monitor traffic and combat congestion in a manner similar to a GPS tracking system, but for a lower cost.

The dire funding situation facing the national highway transportation infrastructure combined with both the success of these tolling projects and the lobbying efforts of states for more tolling authority recently resulted in the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users²⁰⁶ ("SAFETEA-LU"). SAFETEA-LU provides new exceptions to the federal government's prohibition on tolling, and modifies one previously existing section.²⁰⁷ Specifically, SAFETEA-LU modifies the section of the U.S. Code that "generally prohibits the imposition of tolls on facilities that use Federal Funds" so long as the state actions are allowed under 23 U.S.C. section 1229(a)(1).²⁰⁸

When establishing new toll roads or modifying existing toll roads, SAFETEA-LU allows states to take advantage to three new tolling mechanisms. First, SAFETEA-LU allows states to convert new or existing HOV lanes into "high-occupancy toll" lanes, known as HOT lanes.²⁰⁹ HOT lanes operate by allowing a single-occupancy vehicle to pay a fee to use HOV lanes that are usually reserved for multi-occupant vehicles.²¹⁰ Second, SAFETEA-LU allows states to take part in either the Express Lanes Demonstration program²¹¹ or the Interstate System Construction Toll Pilot program,²¹² depending

prices, helps keep traffic moving on the HOV lanes so that people who pay the toll are guaranteed to drive close to the speed limit." *Id.*

²⁰⁶ Pub. L. No. 109-59, Aug. 10, 2005 (codified in scattered sections of 23 U.S.C.).

²⁰⁷ Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU); Opportunities for State and Other Qualifying Agencies to Gain Authority to Toll Facilities Constructed Using Federal Funds, 71 Fed. Reg. 965 (Jan. 6, 2006), *available at* <http://frwebgate6.access.gpo.gov/cgi-bin/waisgate.cgi?WAISdocID=705191204285+88+0+0&WAIAction=retrieve> (last visited Apr. 10, 2006) [hereinafter SAFETEA-LU Notice].

²⁰⁸ *Id.* (noting that SAFETEA-LU modifies 23 U.S.C.S. § 301 (LexisNexis 2006)).

²⁰⁹ *Id.*; *see also* 23 U.S.C.S. § 166 (LexisNexis 2006).

²¹⁰ *See* SAFETEA-LU Notice, *supra* note 207.

²¹¹ 23 U.S.C.S. § 1604(b) (LexisNexis 2006).

²¹² 23 U.S.C.S. § 1604(c) (LexisNexis 2006).

on whether there is any pre-existence tolling infrastructure in the state. The Express Lanes Demonstration program "permits tolling authority for up to fifteen demonstration projects for existing HOV facilities or where toll capacity is added," thus making the program applicable to states that already have tolled highways.²¹³ If a state does not currently have any tolled sections of roadway, the Interstate System Construction Toll Pilot program will "authorize[] up to three toll pilot facilities on the Interstate system for the purpose of constructing new Interstate highways."²¹⁴ Finally, SAFETEA-LU also "modifies and extends" the Value Pricing Pilot Program²¹⁵ that was initially included as a part of ISTEA.²¹⁶

Essentially, SAFETEA-LU finally allows tolling to be used by states as a means of offsetting the significant annual financial losses from their transportation budgets. Though toll roads do not provide the same level of flexibility as GPS tracking, they avoid the privacy issues and high cost associated with such a system. Now that the federal government has finally relented from their strict anti-toll stance, states finally have options to help to achieve a level of balance with their highway transportation infrastructure funding.

CONCLUSION

From its inception, the American highway transportation infrastructure has been funded through the user fees. While the United States's system of highways has grown in size and transportation technologies have advanced, the method of funding the national highway infrastructure has failed to evolve in kind. Though the costs associated with the construction and maintenance of the national transportation infrastructure have grown, the increased use of heavily-subsidized fuels, the advancement of fuel-efficient vehicle technologies, and the drive to reduce foreign oil dependence have caused the gasoline tax method of revenue

²¹³ SAFETEA-LU Notice, *supra* note 207.

²¹⁴ *Id.*

²¹⁵ *Id.*; see also 23 U.S.C.S. § 149 (LexisNexis 2006).

²¹⁶ SAFETEA-LU Notice, *supra* note 207.

creation to become even less adequate. Simply put, the national highway system has evolved into something too large to be supported by the system originally designed to fund it.

Thus, what is needed is not quick-fix legislation like VEETC that merely shifts around from where subsidies are paid, but rather a system of revenue creation that allows for flexibility and change in the United States's fuel use. When the only available method of financing the maintenance and construction of the highway infrastructure is inseparably linked to the sale and use of gasoline, it provides a serious disincentive for pursuing environmentally positive transportation goals such as reducing the United States's dependence on foreign oil, increasing the use of alternative fuels, and increasing the fuel efficiency of automobiles. A true roadway user fee should reflect the amount a driver uses the roadway, not the amount of gasoline that a driver consumes.

States are currently exploring two new methods of making up this budgetary shortfall; GPS tracking and toll roads. By either supplementing or supplanting the state gasoline tax with user-fee revenue based on the drivers' travel patterns, states can ensure that their highway transportation infrastructure will remain secure during the inevitable transition away from the current period of oil-heavy transportation towards whatever types of transportation technologies tomorrow will bring.