

## Commission Briefing Paper 5A-02

# Evaluation of Fuel Taxes as a Transportation Revenue Source

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### Introduction

This paper is part of a series of briefing papers to be prepared for the National Surface Transportation Policy and Revenue Study Commission authorized in Section 1909 of SAFETEA-LU. The papers are intended to synthesize the state-of-the-practice consensus on the issues that are relevant to the Commission's charge outlined in Section 1909, and will serve as background material in developing the analyses to be presented in the final report of the Commission.

This paper presents information on the ability of motor fuel taxes to produce revenue needed by the federal government and the states for highway capital and maintenance programs and for the support of public transportation. It briefly reviews the history of the adoption of motor fuel taxes as a source of support for major transportation facilities and contrasts them with local transportation finance programs. It examines trends over time in fuel tax rates at the national and state levels, and considers the impacts on fuel tax revenues of changing fuel economy and energy conservation policies. It also discusses the implications of these trends in the short term and long terms.

### Background and Key Findings

Motor Fuel taxes have for eighty years been the principal source of highway funding at the state and federal levels, though other forms of taxation are more prominent in funding local roads and transit. Increasing fuel efficiency and inflation are compounding the fiscal impacts of political unwillingness to raise per gallon motor fuel tax rates. In the short term, say the next fifteen years, this presents a complex political problem that can be addressed through a variety of strategies, but in the longer term it appears that alternatives will have to be found for motor fuel taxes in order to keep the transportation funding program viable.

- *At the state and federal levels, motor fuel tax rates per gallon have increased over time far more slowly than prices in general or than the costs of providing transportation services to the public.*
- *Improvements in automobile fuel economy are compounding the fiscal impacts of reluctance on the part of legislators to raise gasoline and diesel tax rates per gallon.*
- *Transportation system costs are continuing to rise and transportation agencies are responsible for broader missions than in earlier decades.*

- *While in the next decade or two there will be increasing pressure on motor fuel taxes as a source of transportation program revenue, the decline in their viability will be gradual and there are several strategies by which to close this funding gap.*
- *Indexing and shifting to ad valorem taxes (a fixed percentage of a transaction) are widely considered and have some obvious benefits, but they also present some political challenges.*
- *In the longer term, the motor fuel tax should be replaced as the heart of the transportation revenue program by an alternative system of user fees. It cannot keep pace with changing need and new technology is available to charge users more directly and precisely in relation to their use of the system*

## **Origins of Motor Fuel Taxes for Transportation Finance**

A century ago almost all roads were local, while rudimentary intercity roads, many of which were privately owned toll facilities, were completely inadequate to serve rapid growth in vehicle travel. Neighborhood streets and most county roads have long been and still are the responsibility of local governments. Making up the vast majority of the road system's lane miles, local streets and roads carry only a small proportion of traffic by volume. Their purpose is to provide private, commercial, and emergency vehicle access to residential and commercial property. In addition to being essential to residents and employees, access imparts significant value to private property by allowing postal trucks, fire engines, police cars, ambulances, trash collectors, plumbers, and many others to reach individual land parcels. Streets are also the most common channels for electric wires, gas mains, and water and sewer pipes. For these reasons, local governments have long provided and maintained local roads, financing them primarily by levying taxes on the properties that benefit so directly from the access they provide.

Over time, states assumed a different, complementary transportation mission to that of local governments. In the early part of the 20<sup>th</sup> Century, a widely-shared goal was to get farmers out of the mud, connecting them to regional markets. At the same time, rapid growth in automobile use created traffic jams on existing, mostly underdeveloped roads. Gradually, most states, with incentives from the federal government in the form of matching grants in support of post routes, augmented local roads by creating major routes designed for heavy longer-distance traffic. These state highways were expensive, and they quickly strained state treasuries. Around 1920 some states were devoting more than forty percent of all state revenues to maintaining roads and paying interest on bonds issued to build them. Despite these levels of spending, congestion was getting worse because highway travel was growing so rapidly.

In contrast to the land-serving focus of extensive, lightly-traveled local street networks, travel on state highways is largely comprised of longer-distance trips traveling at higher speeds and in greater volumes. Accordingly, the principal beneficiaries were seen to be the users of the system – motorists, truckers, shippers, and so on, rather than adjacent property owners. So from this period of financial exigency came the revolutionary concept of “user fees.” Because the need for and costs of state roads varied in rough proportion to traffic levels, it made sense to cover the costs of state roads by charging travelers to use them. Tolls were considered at the time the

fairest way to charge users, but had a major drawback. Expenses associated with collecting tolls (constructing toll booths, paying toll collectors, and revenue losses from toll evasion, graft, and pilfering) were so large that that they on some roads costs exceeded the revenues generated. Further, the time spent slowing and queuing to pay tolls reduced travel speeds, making toll roads less attractive than they might otherwise be. Finally, private toll road operators in many eastern states were sometimes criticized for poorly maintaining their roads in order to extract maximum profit from their enterprises. And, developing interconnected road networks required construction and maintenance of expensive-to-build links (over waterways or through mountain passes) and some lightly used links that could not be financed entirely by locally generated toll revenues.

The solution to this dilemma came when states, starting with Oregon in 1918, adopted an alternative form of user fee – motor fuel taxes. Although fuel taxes charged road users in rough proportion to their travel, and heavier vehicles paid more because they used more fuel per mile, fuel taxes did not quite match tolls for equity because they did not levy charges at the time and place of road use. Fuel taxes cost much, much less to collect and administer than tolls, however. While the costs of administering toll financing often amounted to 20% or more of the revenue, motor fuel tax programs are typified by costs of administration below often 5%. Because of this, motor fuel taxes soon became the principal means of financing America’s main roads. Because they were user fees, most states reserved fuel taxes exclusively for transportation expenditures; this link between fuel taxes and transportation expenditures has been mandated across the country by in some state constitutions and many more state laws. The Hayden-Cartwright Act of 1935 required that states receiving Federal highway aid spend at least as much of their motor fuel tax revenue on highways as was required by state laws prior to the adoption of the national law and this provision was in effect until it was repealed by TEA21. When the federal government decided in 1956 to finance intercity highways on a national scale, it increased federal fuel taxes and created the Federal Highway Trust Fund, emulating the “user pays” principle that had been so successful in the states.

For better than eight decades, motor fuel taxes have paid most costs of building and operating major roads in the U.S. As public policy gradually came to favor a transportation system balanced to some extent between private cars and public transit, motor fuel taxes were also used to construct and, to a lesser extent, to operate transit systems. This change was objectionable to some interests at the time because it was seen as a “diversion” of road user fees to other purposes and thus a violation of the principle that user fees were to be reserved only for the benefit of those who paid them. But, in order to keep together an effective coalition of highway, transit, construction, and environmental interests, and recognizing that many (though not all) automobile users benefit by the presence of transit in their communities, the funding of public transit in part with highway user fees gradually became institutionalized (Goldman and Wachs, 2003).

## **Erosion of User Fee Finance**

Today, user fees produce over \$110 billion annually in revenue for transportation systems nationally, and motor fuel taxes produce roughly two-thirds of all user fee revenue, the largest source of transportation system finance. Concern arises, however, because a major change in the way we finance transportation systems appears to be underway. Federal and state fuel taxes,

though still by a large margin the greatest source of revenue for transportation, are rising much more slowly than either traffic volumes or transportation system costs. Because fuel taxes are generally levied per gallon, and not per dollar spent on fuel or per mile of driving, inflation and improved fuel efficiency combine to erode the buying power of the motor-fuel tax. To keep pace with rising costs and increasing travel, the per-gallon fuel tax levy needs to be hiked regularly – a significant political liability. While fuel taxes have risen a few times since the early 1980s, they have fallen far short of pacing the combined effects of inflation, improved vehicle fuel efficiency, and new program responsibilities.

In 1957, as the nation started in earnest to build the Interstate Highway system, the average state motor fuel tax stood at 5.7 cents per gallon. Applying the consumer price index to that rate of taxation would result in an average state fuel tax rate of 41 cents per gallon in 2006. Not a single state currently taxes fuel at that rate; only a handful charge as much as 30 cents per gallon. In order to match the per-gallon buying power of the motor fuel tax in 1957, a majority of states would have to raise their gas taxes by more than 20 cents per gallon, which for many states amounts to more than a doubling of current rates. It is beyond the realm of possibility that states would increase tax rates so dramatically. The federal gasoline tax in 1957 stood at 3 cents per gallon and, using the CPI, it would have to be raised to 22 cents per gallon to have the same per-gallon buying power today that it had in that year. Since the federal gasoline tax is today 18.4 cents per gallon, it comes closer than the states do to keeping pace with inflation, but it also falls short of staying even (Wachs, 2003).

These figures only consider the effect of inflation on the buying power of the per gallon motor fuel tax. The fuel tax's eroding purchasing power has been compounded by increasing vehicle fuel efficiency. The average passenger car traveled 13.5 miles per gallon in 1970, and this had risen to about 22 miles per gallon by the year 2000, an improvement in fuel efficiency of 63 percent. Of course, this improvement is highly desirable and happened partly in response to American energy policy initiatives, including the Energy Policy and Conservation Act, which specified Corporate Average Fuel Economy (CAFE) standards. Nevertheless, improved fuel economy directly reduces per-mile revenues from motor fuel taxes. In other words, we burden the road system with many more miles of travel per dollar contributed to federal and state coffers today than we did a half a century ago (Taylor, 2004).

While our transportation programs have faced this relentless and systematic reduction in inflation-adjusted revenues per mile of travel, the cost of roads and other transportation facilities has risen dramatically, further straining the faltering revenue stream. Building and maintaining roads and transit facilities require spending on land, labor, capital equipment, and materials, all of which cost much more than they once did. The *Engineering Newsrecord Construction Cost Index*, for example, tracks over time the average cost in 20 cities of a mix of major ingredients in the cost of transportation facilities: common labor, steel, lumber, and concrete. Between 1957 and 2006 the index rose by 900 percent. It is clear that revenues have declined dramatically in relation to costs (Wachs, 2003).

Despite declining purchasing power of transportation revenues and rising costs, transportation programs also have been called upon to broaden expenditures to address societal demands. One important example of the growth of programmatic responsibility in transportation has been

increased spending on the mitigation of environmental impacts of transportation investments. For example, new highway construction projects often incur additional costs to achieve context sensitive design. While increased sensitivity to aesthetic and environmental impacts of transportation is clearly in the public interest, the increased costs associated with these activities reduces the transportation services that can be provided per dollar of expenditure, further shrinking the buying power of motor fuel tax revenues (Taylor, 2004).

As the transportation system grows in extent and as it ages, an ever increasing share of expenditures is needed to operate, maintain, and renew the existing system, meaning that even less money is available for system growth. The national freeway system has matured to the point that a large and growing share of resources go to replace pavement, bridges, and other structures that have deteriorated over decades of often heavy use. In addition, it has also often been necessary to strengthen existing facilities as new information has come to light about the impacts of earthquakes on roads and bridges. Thus, congestion is growing in part because network capacity is growing far more slowly than is travel. Between 1980 and 1999, vehicle miles of travel on US roadways grew by 76% whereas lane miles increased by only 3%. The Texas Transportation Institute in a study of 68 urban areas reported that the percentage of daily travel taking place during congested periods increased from 32% in 1985 to 45% in 1999 (Shrank and Lomax, 2001).

### **Shorter Term Prospects: The Next Fifteen Years**

A committee of the Transportation Research Board recently examined “The Fuel Tax and Alternatives for Transportation Revenue,” and concluded that despite concerns of the sort raised above, “the risk is not great that the challenges evident today will prevent the highway finance system from maintaining its historical importance over the next fifteen years.” The committee report, however, notes that in order to continue to rely upon motor fuel taxes for the lion’s share of transportation revenues in America, it will be necessary to continue to raise motor fuel excise taxes at rates in a manner consistent with past history (Transportation Research Board, 2006). Per gallon gasoline and diesel fuel taxes are typically raised at the state level by acts of the legislatures and approved by the governor; at the national level by acts of Congress and approved by the President. The political climate is one of wariness of any kind of tax increase – even increases to transportation user fees. While a transportation user fee can arguably be seen as something other than a tax – President Reagan made this argument when the federal motor fuel tax was raised during his administration – the distinction between a user fee and a tax is too subtle a point to sway many legislators today. During the recent debate over reauthorization of the federal surface transportation program there was a strong consensus among legislators that motor fuel taxes should not be increased in order to expand the federal transportation program. And, while a few states have chosen to increase their gasoline and diesel fuel taxes, they have without exception failed to raise their levies sufficiently to keep pace with the combined effects of inflation and improving motor fuel economy.

In the near term, the generally staunch anti-tax sentiment in the United States is likely to continue, and to be compounded by concerns about rising fuel prices, reflecting the growing international demand for petroleum, increasing reliance on more-costly-to-extract reserves, limited domestic refining capacity, and disruptions to the petroleum extraction, refining, and

distribution system by events like the Iraq war and Hurricane Katrina. Whether or not the Federal government and the states will be able to raise motor fuel taxes at approximately the historical rate of increase is difficult to predict. Failure to do so would produce a growing short-term gap between estimated needs and expected revenue flows (Transportation Research Board, 2006).

Two widely considered strategies for stabilizing revenue growth in the relatively short term involve states or potentially the federal government avoiding periodic political firestorms over raising rates by adopting fuel tax rates that adjust automatically under changing conditions. The first way to accomplish this is through legislation to convert from cents per gallon excise taxes to an ad valorem tax, which means that the tax, like most sales taxes, is set as a percentage of the sale price of the fuel. Proponents believe that over time the trend in fuel prices is likely to be upward, so a fixed percentage will inevitably produce a growing revenue stream. While the political battle to achieve such a change may be vigorous, once won it need not be fought every few years. The second way to achieve a similar goal is through legislation indexing the fuel tax to some convenient indicator, such as the consumer price index, or perhaps more logically, to the construction cost index. These approaches are worthy of careful consideration, but they have some subtle potential drawbacks in addition to obvious benefits (Ang-Olson, Wachs, and Taylor, 2000).

Several states adopted one or the other of these “variable rate” fuel taxes between 1974 and 1982 when the nation was experiencing high rates of increase in fuel prices, high rates of inflation, and fearing rapid reductions in fuel tax revenues due to the adoption of corporate average fuel economy standards. But the fuel prices that had risen so rapidly in the seventies fell quite rapidly in the eighties, and fuel tax revenues that were pegged to the price of fuel also produced dramatic reductions in revenues. The case of Michigan is widely cited. After adopting a fuel tax rate that was directly proportional to a highway maintenance construction cost index and inversely proportional to state fuel consumption, that state allowed indexing to expire in the mid-eighties after experiencing a 36 percent decline in revenue under the new system. About fifteen states enacted some form of indexing in the seventies or early eighties, and most reversed themselves after discovering that the volatility of the price of energy was among the most vigorous sources of inflation. The volatility of the price of petroleum was the fundamental cause of decreasing stability in transportation revenues. During this time period the rapidly increasing price of energy caused large jumps in the consumer price index. Since the tax on fuel was tied to that index or similar ones, it led to increases in the rate of fuel taxation. That, in turn, created higher fuel prices. The public became disillusioned and cynical toward fuel taxes that rose automatically under those circumstances, while the states became concerned with the revenue implications when the price of petroleum fell (Ang-Olson, Wachs, and Taylor, 2000). These complexities do not necessarily mean that variable-rate motor fuel taxes are always a poor choice. In order to dampen potential volatility it is possible to index only a portion of the motor fuel tax and it is also possible to couple indexing with a “cap” upon annual changes in the upward or downward direction in order to avoid wild fluctuations in tax revenue and in prices faced by consumers.

## Longer-Term Prospects

While some might dismiss current reluctance to raise motor fuel taxes as a matter of political will that could change, there are stronger reasons to argue that the motor fuel tax is not a viable revenue base for transportation over the long term. The TRB Committee report cited above concluded that “(a) reduction of 20 percent in average fuel consumption per vehicle mile is possible by 2025 if fuel economy improvement is driven by regulation or sustained fuel price increases” (Transportation Research Board, 2006). In an effort to promote the adoption of “gasohol,” federal tax rates on that fuel were for a time set lower than those on gasoline and diesel fuels. The recent introduction of hybrid vehicles provides another indication of what may well be a long-term transition away from exclusively petroleum-based propulsion. One could view the explosive growth of gasoline-electric hybrid vehicles as just another step in the evolution of improved fuel economy, and hybrids still make up only a small proportion of the vehicle fleet, so their effects to date on fuel tax revenues have been minimal. But at the federal level and in some states incentives are being put into place to accelerate the shift to hybrids. Federal tax credits and programs allowing hybrid vehicles carrying a single occupant to use high-occupancy vehicle (HOV) lanes are early indications of even more aggressive incentives that could follow; though it is likely that rising fuel prices will do far more to motivate motorists to purchase hybrids and other high-mileage vehicles than any federal or state incentives.

In addition to hybrids, advances in conventional engine technologies – such as variable cylinder management systems and increasingly sophisticated variable timing control systems – are ushering in a new wave of fuel efficiency improvements. Eventually, and with uncertain timing, the long promised breakthrough in electric battery technology could occur, making purely electric vehicles more feasible than they have been heretofore. And hydrogen fuel-cell technology, seen by many to be promising over a longer time horizon of twenty or more years, may one day be commonplace. Thus, the list of emerging motor vehicle propulsion technologies is long and growing.

It is difficult if not impossible to anticipate with precision the likely market penetration of hybrid, battery electric, biofuels, or hydrogen fuel cell vehicles. More important than any particular technology is increasing concerns with global warming and the links between the use of carbon-based fuels of all sorts and the concentration of greenhouse gases in the atmosphere. What is likely to be a growing national commitment to reducing the production of greenhouse gases is foreshadowed by the California Energy Commission’s current program aimed at automobile engines. In addition to state initiatives, it may soon become national policy to reduce the burning of fossil fuels in order to slow growing concentrations of greenhouse gases. Should this happen, basing our system of transportation finance on the sale of carbon-based fuels at both the federal and state levels via the motor fuels tax will be increasingly problematic because it creates for the US Government a deep conflict of interest. If one national policy is aimed at reducing the consumption of fossil fuels while the surface transportation program depends upon growth in the sale of such fuels as a principal source of needed revenue, there is enormous potential for confusion in which there is an undesirable struggle between environmental and revenue policy objectives. It is possible to envision higher transportation energy taxes as a mechanism by which to induce greater vehicle efficiency, but to the extent that such a strategy

succeeds in improving efficiency it eventually defeats itself as a revenue source. For this reason it seems useful to plan for alternatives user fees, such as tolls and per mile charges for driving on American highways as successors to motor-fuel taxes.

## **Conclusion**

While traditional federal and state motor fuel taxes will undoubtedly produce many billions of dollars in transportation revenues in the years ahead, we are necessarily in the early phases of a transition to a new system or systems of transportation finance. Despite its many virtues, and there are indeed many, all evidence suggests that the fuel tax's days are numbered, though what that number might be remains the subject of considerable debate, and the transition is likely to be gradual. Whether it is ten years or twenty, the successors to the fuel tax should be reflectively and deliberately considered.

## **References**

Ang-Olson, J., M. Wachs, and B. Taylor. "Variable State Gasoline Taxes," **Transportation Quarterly**, Vol. 54, No. 1 (Winter 2000), pp. 55-58.

Goldman, T. and M. Wachs. "A Quiet Revolution in Transportation Finance," **Transportation Quarterly**, Vol. 57, No. 1 (Winter 2003), pp. 19-32.

Shrank, D. and Lomax, T. "The 2001 Urban Mobility Report." College Station: Texas Transportation Institute, 2001.

Taylor, B. D. "The Geography of Urban Transportation Finance," in **The Geography of Urban Transportation**, Third Edition, Susan Hanson and Genevieve Giuliano, Editors. New York: The Guilford Press, 2004, pp. 294-331.

Transportation Research Board. **The Fuel Tax and Alternatives for Transportation Funding. TRB Special Report 285, 2006.** Washington: The National Academies.

Wachs, M. "Commentary: A Dozen Reasons To Raise the Gas Tax," **Public Works Management & Policy**, Vol. 7, No. 4 (April 2003), pp. 235-242; reprinted in **State Tax Notes**. Vol. 29, No. 12 (September 11, 2003), pp. 849-853.

## **SUPPORTING MATERIAL**

**This paper represents draft briefing material; any views expressed are those of the authors and do not represent the position of either the Section 1909 Commission or the U.S. Department of Transportation.**

# Motor Fuel Excise Tax Rates

January 1, 2006

Note: The tax rates listed are fuel excise taxes collected by distributor/supplier/retailers in each state. Additional taxes may apply to motor carriers. Carrier taxes are coordinate by [IFTA](#).

State	----Gasoline----			----Diesel Fuel----			----Gasohol----			Notes
	Excise Tax	Add'l Tax	Total Tax	Excise Tax	Add'l Tax	Total Tax	Excise Tax	Add'l Tax	Total Tax	
Alabama /1	16.0	2.0	18.0	19.0		19.0	16.0	2.0	18.0	Inspection fee
Alaska	8.0		8.0	8.0		8.0	0.0		0.0	
Arizona	18.0		18.0	18.0		18.0	18.0		18.0	/3
Arkansas	21.5		21.5	22.5		22.5	21.5		21.5	
California	18.0		18.0	18.0		18.0	18.0		18.0	Sales tax applicable
Colorado	22.0		22.0	20.5		20.5	22.0		22.0	
Connecticut	25.0		25.0	26.0		26.0	25.0		25.0	
Delaware	23.0		23.0	22.0		22.0	23.0		23.0	Plus 0.5% GRT /5
Florida /2	4.0	10.9	14.9	16.8	10.9	27.7	4.0	10.9	14.9	Sales tax added to excise /2
Georgia	7.5	7.8	15.3	7.5	9.0	16.5	7.5	7.8	15.3	Sales tax added to excise
Hawaii /1	16.0		16.0	16.0		16.0	16.0		16.0	Sales tax applicable
Idaho	25.0		25.0	25.0		25.0	22.5		22.5	/7
Illinois /1	19.0	1.1	20.1	21.5	1.1	22.6	19.0	1.1	20.1	Sales tax add., env. & LUST fee /3
Indiana	18.0		18.0	16.0		16.0	18.0		18.0	Sales tax applicable /3
Iowa	20.7		20.7	22.5		22.5	19.0		19.0	
Kansas	24.0		24.0	26.0		26.0	24.0		24.0	
Kentucky	17.1	1.4	18.5	14.1	1.4	15.5	17.1	1.4	18.5	Environmental fee /4 /3
Louisiana	20.0		20.0	20.0		20.0	20.0		20.0	
Maine	25.9		25.9	27.0		27.0	25.9		25.9	/5
Maryland	23.5		23.5	24.25		24.25	23.5		23.5	
Massachusetts	21.0		21.0	21.0		21.0	21.0		21.0	
Michigan	19.0		19.0	15.0		15.0	19.0		19.0	Sales tax applicable
Minnesota	20.0		20.0	20.0		20.0	20.0		20.0	
Mississippi	18.0	0.4	18.4	18.0	0.4	18.4	18.0	0.4	18.4	Environmental fee
Missouri	17.0	0.55	17.55	17.0	0.55	17.55	17.0	0.55	17.55	Inspection fee
Montana	27.0		27.0	27.75		27.75	27.0		27.0	
Nebraska	26.1	0.9	27.0	26.1	0.9	27.0	26.1	0.9	27.0	Petroleum fee /5
Nevada /1	24.0	0.805	24.805	27.0	0.75	27.75	24.0	0.805	24.805	Inspection & cleanup fee
New Hampshire	18.0	1.625	19.625	18.0	1.625	19.625	18.0	1.625	19.625	Oil discharge cleanup fee
New Jersey	10.5	4.0	14.50	13.5	4.0	17.50	10.5	4.0	14.50	Petroleum fee
New Mexico	17.0	1.9	18.9	21.0	1.9	22.9	17.0	1.9	18.9	Petroleum loading fee

New York	8.0	15.9	23.9	8.0	14.15	22.15	8.0	15.9	23.9	Sales tax applicable, Petrol. Tax
North Carolina	29.9	0.25	30.15	26.9	0.25	30.15	26.9	0.25	30.15	/4 Inspection tax
North Dakota	23.0		23.0	23.0		23.0	23.0		23.0	
Ohio	28.0		28.0	28.0		28.0	28.0		28.0	Plus 3 cents commercial
Oklahoma	16.0	1.0	17.0	13.0	1.0	14.0	16.0	1.0	17.0	Environmental fee
Oregon /1	24.0		24.0	24.0		24.0	24.0		24.0	
Pennsylvania	12.0	19.2	31.2	12.0	26.1	38.1	12.0	19.2	31.2	Oil franchise tax
Rhode Island	30.0	1	31.0	30.0	1	31.0	30.0	1	31.0	LUST tax
South Carolina	16.0		16.0	16.0		16.0	16.0		16.0	
South Dakota /1	22.0		22.0	22.0		22.0	20.0		20.0	
Tennessee /1	20.0	1.4	21.4	17.0	1.4	18.4	20.0	1.4	21.4	Petroleum Tax & Envir. Fee
Texas	20.0		20.0	20.0		20.0	20.0		20.0	
Utah	24.5		24.5	24.5		24.5	24.5		24.5	
Vermont	19.0	1.0	20.0	25.0	1.0	26.0	19.0	1.0	20.0	Petroleum cleanup fee
Virginia /1	17.5		17.5	16.0		16.0	17.5		17.5	/6
Washington /8	31.0		31.0	31.0		31.0	31.0		31.0	0.5% privilege tax
West Virginia	20.5	6.5	27.0	20.5	6.2	27.0	20.5	6.5	27.0	Sales tax added to excise
Wisconsin	29.9	3.0	32.9	29.9	3.0	32.9	29.9	3.0	32.9	/5 Petroleum Inspection fee
Wyoming	13.0	1	14.0	13.0	1	14.0	13.0	1	14.0	License tax
Dist. of Columbia	22.5		22.5	22.5		22.5	22.5		22.5	
Federal	18.3	0.1	18.4	24.3	0.1	24.4	13.0	0.1	13.1	/7 LUST tax

SOURCE: Compiled by FTA from various sources.

/1 Tax rates do not include local option taxes. In AL, 1 - 3 cents; HI, 8.8 to 18.0 cent; IL, 5 cents in Chicago and 6 cents in Cook county (gasoline only); NV, 4.0 to 9.0 cents; OR, 1 to 3 cents; SD and TN, one cent; and VA 2%.

/2 Local taxes for gasoline and gasohol vary from 9.7 cents to 17.7 cents. Plus a 2.07 cent per gallon pollution tax.

/3 Carriers pay an additional surcharge equal to AZ-8 cents, IL-6.3 cents (g) 6.0 cents (d), IN-11 cents, KY-2% (g) 4.7% (d).

/4 Tax rate is based on the average wholesale price and is adjusted quarterly. The actual rates are: KY, 9%; and NC, 17.5¢ + 7%.

/5 Portion of the rate is adjustable based on maintenance costs, sales volume, or inflation.

/6 Large trucks pay an additional 3.5 cents.

/7 Tax rate is reduced by the percentage of ethanol used in blending (reported rate assumes the max. 10% ethanol).

/8 Tax rate scheduled to increase to 34 cents on July 1, 2006.

## CONSOLIDATED COMMENTS FROM MEMBERS OF THE BLUE RIBBON PANEL OF TRANSPORTATION EXPERTS - PAPER 5A-02

One reviewer commented as follows:

A 1966 paper by Ed Cope, then Director of the Statistics Division of the Bureau of Public Roads, issued a wake-up call that, in an era of high inflation, a “static sized gallon” (a term referring to a gallon that does not, for a variety of reasons, maintain its purchasing power over time) is not a viable unit of measure for revenue. Though it has been and currently remains the backbone of our system of revenue for roads for decades, Cope’s concerns were well founded, though the problem is not due solely to high inflation. Also, if four cents were used as a base for the federal tax and adjusted to 2006, a federal tax of about 30 cents per gallon would be required to keep up with inflation, rather than the 22 cents shown in the paper.

Another important part of the problem is the unwillingness of political officials to raise the gas tax to cover inflation. A second key component of the problem relates to the additional costs due to “quality escalation” that have been added to the highway program’s requirements for construction, maintenance, and improvement of roads. These items, which improve the quality of the products, may contribute at least as much in increased costs as the changes in the Consumer Price Index. Given its structural issues and prospective problems, for the longer term, a viable substitute for the fuel tax must be found and the sooner the better.

However, this view runs contrary to the view of the public and many policy-makers (and to the view espoused by Martin Wachs in *A Dozen Reasons for Raising Gasoline Taxes*), who see the fuels tax as being very good for transportation and who tend to be disinclined to endorse a paradigm-changing replacement.

In this light, two fundamental questions need to be addressed. First, how do transportation experts shift policy-makers’ focus from the present (where fuel taxes are highly effective), to the future where fuel taxes are inequitable, never increased, and revenue is declining? A second closely related question is, under what circumstances are policy-makers and the public willing to make a paradigm change? Consideration of these questions will enable the Commission to develop a strategy for moving towards whatever system changes it deems appropriate.

Other specific comments on the paper are:

- Concern that converting the fuel tax from a per-gallon tax to an ad valorem tax, which would increase the volatility of the revenue stream because of the significant variance of the price of motor vehicle fuel. (page 6)
- In addition to the experience in Michigan with indexing the gas tax, the experience in Wisconsin should also be considered. (page 6)
- Consider taxing alternative fuels, after an appropriate period to ramp up their production and introduction into the marketplace. This could potentially delay the obsolescence of the fuel excise tax for some time, a measure believed to be prudent if it is expected that it will take a long time to phase in any direct user fee alternative. (page 7)