

Financing West Virginia's Highways: Challenges and Opportunities¹

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1.0 Introduction and Overview

West Virginia, along with many other states, is faced with the challenge of financing the construction and maintenance of highways and bridges. Over time the increasing fuel efficiency of the vehicle fleet combined with shifts to alternative fuels poses a challenge to conventional fuel tax revenues supporting road funds. When one couples the reduced vehicle miles traveled by driver due to fuel prices in excess of \$4.10 per gallon at the pump in July 2008 and recent prices over \$2.50 per gallon, one can see that fundamental changes will be required to finance road and bridge construction and maintenance. On top of this highway construction costs continue to escalate placing additional pressures on construction and maintenance.

This is even more critical in West Virginia since the state is only one of four (the other states are Delaware, North Carolina and Virginia) having jurisdiction over both state and county roads. In West Virginia the state government is responsible for over 92 percent of public highways while municipalities are responsible for about 5.5 percent and Federal agencies for the balance.

Recent reports have addressed the issue of inadequate highway financing nationally and in West Virginia. This report reviews some of the national studies related to highway financing and summarizes recently released reports on the critical need for additional funding for West Virginia's highway infrastructure.

The funding for West Virginia's highways and bridges is the responsibility of the State Road Fund, which was created in 1921 following the ratification of the Good Roads Amendment of 1920. The State Road Fund was established under the West Virginia Constitution, Article VI, Section 52:

[r]evenue from gasoline and other motor fuel excise and license taxation, motor vehicle registration and license taxes, and all other revenue derived from motor vehicles or motor fuels shall, after the deduction of statutory refunds and cost of administration and collection authorized by legislative appropriation, be appropriated and used solely for the construction, reconstruction, repair and maintenance of public highways, and also the payment of the interest and principal on all road bonds heretofore issued or which may be hereafter issued for the construction, reconstruction or improvement of public highways, and the payment of obligations in the construction, reconstruction, repair and maintenance of public highways.

The State Road Fund major tax revenue sources include motor fuel taxes, motor vehicle consumer sales and use tax, license fees and registration fees. Other revenue sources include interest, litter fees and miscellaneous revenues. In selected years the West Virginia Legislature has even transferred funds from the General Revenue Fund to augment funds available in the State Road Fund. As with many states, these funding sources have become inadequate over the years leading to a shortfall in support for highways and bridge construction and maintenance.

This study was commissioned by the West Virginia Legislature's Joint Standing Committee on Finance to provide updated information and policy recommendations. The study has eight major sections:

1. Principles of highway public finance
2. National trends affecting highway infrastructure financing
3. Current and potential federal highway transportation financing policies
4. West Virginia highway financing: review of recent studies and legislative action
5. Motor fuel excise tax: options
6. Sales/privilege tax: options
7. Registration fees: options
8. Other policy options and concluding comments

The report references extensive data, much of which is included in Appendix A Figures and Appendix B Tables.

2.0 Principles of Highway Public Finance and their Application to West Virginia¹

To better understand the logical basis for how federal and state governments fund public highway construction and maintenance, it's useful to review some basic economic principles of taxation. Highways have some characteristics of a public good. Economists define a public good as a good that has non-rival and non-excludable properties. A non-rival good does not suffer from congestion, which means that additional users do not diminish the quantity available for existing users. A good is non-excludable if it is too costly or simply impossible to prevent other people from consuming it. Roads are partially non-rival until too many users cause congestion. Also, it might be very costly to prevent drivers from using some roads.

In assessing the provision of public goods, such as highways, economists use several different criteria to evaluate the various types of revenues used. These criteria include:

- Efficiency-which focuses on taxes varying positively with mileage driven and vehicle weight and taxes varying negatively with the number of vehicle axles. It is presumed that the more miles driven and the greater weight of the vehicle results in greater construction costs to bear the load as well as greater potential damage and higher costs of maintenance.
- Equity, which incorporates concepts of ability-to-pay (taxes should be distributed in accordance with income or wealth), benefits received (taxes should be distributed in accordance with the benefits received from the highway system, and cost causation (taxes should be distributed in accordance with highway expenditures caused)
- Administration (cost efficiency), which focuses on administrative, enforcement and compliance costs associated with the highway system
- Stability, which focuses on revenue stability over time.

First tier taxes include registration fees and vehicle privilege taxes. Conceptually, first tier taxes should cover the fixed operating costs of the highway system and are often considered to be the equivalent of an 'entry' fee to access the public highway system. Second tier taxes include the motor fuel excise tax and cover the construction costs of the public highway system. Third tier taxes include weight-distance and axle-weight-distance taxes. Conceptually, third tier taxes should track the operation and maintenance costs that users impose on the highway system.

In addition, there may be congestion charges levied through electronic metering in the vehicles that increase the cost of access and use of the highway system during peak load periods. Through the use of congestion charges potential users must weigh the benefits associated with use of the system during potential peak periods of congestion with the potential costs.

One additional justification for the use of motor fuel taxes for financing highway construction and maintenance is the benefits received principle of taxation. Most public finance economists believe this is the soundest tax policy in that the consumers of government services are taxed in proportion to the

¹ This section is based, in part, on Tom S. Witt, *Financing West Virginia's Highways: An Update*, West Virginia University Bureau of Business and Economic Research, January 2007. Available at www.bber.wvu.edu.

benefits they receive from these services. The logic behind this is the fact that motor fuel usage has a high correlation with the operation and maintenance cost imposed by users. In this sense, motor fuel excise taxes serve as a user fee and thus meet the benefits received principle of taxation.²

Highways can be provided both privately and publicly. There are numerous private toll roads in the United States that charge drivers user fees. However, conventional economic theory argues that public goods are going to be underprovided by the private sector because entrepreneurs cannot effectively charge all consumers a fee and prevent all non-paying beneficiaries of public goods from consuming them. This leads to a socially suboptimal provision of roads due to the inability of the private sector to capture in prices all highway related benefits and externalities.

A public sector provision of highways could, in theory, result in a more optimal capture of these benefits and externalities through taxes or user fees. For example, motorists pay for their usage of highways and roads in motor fuel or gasoline taxes and fees that can be spent on road maintenance, safety, and clean up. These revenues could be used to compensate for highway related externalities such as pollution, noise, and accidents.³ Ideally, one would want to tax motorists, businesses, and residents in proportion to the benefits they receive from the publicly provided transportation infrastructure and compensate them for road noise and pollution.

While motor fuel taxes and fees might approach this ideal tax instruments with respect to motorists, they ignore businesses and residents who might be benefited positively by highway related externalities. For instance, a motor fuel tax may not capture the benefits of economic development that might accrue to the local businesses and residents from a new road or highway construction in their area. The ability of motor fuel taxes and fees to accurately target highway “consumers” will be further compromised as alternative sources of energy power vehicle become available. For example, the emergence of natural gas or electric power vehicles results in no usage of motor fuel and thus no contributions to the construction and maintenance of the highway system.

A more comprehensive highway financing strategy is needed in order to allocate the financial burden in accordance with benefits received. This comprehensive highway financing strategy would have to look beyond motor fuel taxes and user fees. For example, general revenue funds, local option sales and property taxes could be used to finance highway construction and maintenance in addition to motor fuel taxes. The benefits to business and residential areas from a new road or highway construction could be captured with tax increment financing (TIF), for example.

Many states recognize that user fees and taxes are insufficient for the funding of public highways. Table B-5 from the Federal Highway Administration shows a comparison of the revenues received by states

² Jonathan Williams, “Paying at the Pump: Gasoline Taxes in America”, *State Tax Notes*, April 14, 2008. Provides a history of the gasoline tax and its theory, incidence, and controversies.

³ Gillen, D., D. Levinson, and A. Kanafani (1998). "The Social Costs of Intercity Transportation: A Review and Comparison of Air and Highway," *Transport Reviews*, Vol. 18, pp. 215-240.

(including the District of Columbia) in 2006 for the construction and maintenance of highway systems.⁴ The following are some key findings from this table:

- In 2006, 32 states reported using appropriations from general revenue funds for highway uses. The amount reported represents gross general fund appropriations for highways reduced by the amount of highway-user revenues placed in the State General Fund. In part, these appropriations may reflect recognition of the public benefits accruing beyond the highway user revenues dedicated to highways...
- In 2006, all states and the District of Columbia reported miscellaneous revenues in support of highways. In the case of West Virginia these funds may have come from miscellaneous revenues (maps sales, etc.) and possibly interest income.
- Based upon the data, it is apparent that nearly all states supplement highway user fees (motor fuel taxes, motor vehicle and motor carrier taxes and road and crossing tolls) with other revenue sources.

Many states also provide for local financing of highway construction and maintenance. The basic public finance principles above also apply to local finance. Since many local governmental agencies impose income, sales and/or property taxes to finance local governmental operations, use of one or more of these taxes results in support of local road construction and maintenance. Generally, the benefits received principle of taxation serves as the basis of local financial contributions.

Within West Virginia local governments have responsibility for municipal roads and bridges. While these tie into the state system and are coordinated with the West Virginia Department of Highways, the primary tax revenue streams used to support these local highway systems are local property taxes and business and occupation taxes (municipalities only). In many other parts of the U.S. local highway system responsibility is supported by sales, fuel, and income taxes levied on local residents.

In recognition that other local revenue options need to be utilized for financing construction and maintenance of portions of the State Highway System within individual counties, the 2006 session of the West Virginia Legislature enacted into law Senate Bill 673. This act, known as the Local Powers Act, permits counties the authority to impose, administer, collect and enforce payment of voter-approved service fees for the purpose of providing special infrastructure projects such as highway construction and maintenance within the county. This act was used by the County Commission of Monongalia County to design a countywide service fee to finance construction of certain infrastructure projects that had been identified by the Greater Morgantown Metropolitan Planning Organization.

The County Commission established the date of February 2, 2008 for a special election permitting the levying of a \$2.00 per week user fee on all employees within Monongalia County. The funds from the fee would be used to issue bonds that would fund \$180 million in 18 transportation projects within Monongalia County. Only 2,542 voted in favor of the user fee while 11,048 people voted against the fee. While there were a number of issues addressed during the period prior to the vote, the following were the most prominent issues:

⁴ Federal Highway Administration, *Highway Statistics 2006*, Table SF-1. Available from www.fhwa.dot.gov.

- Since the user fee was a flat fee levied on all full- and part-time wage earners, it was viewed as being highly regressive. That is, the percent of wage and salary income paid declined rapidly as this income increased.
- Many voters perceived that passage of the fee and resulting bonding and construction would result in a diversion of state highway construction and maintenance to other parts of the state. State highway officials indicated that such diversions would not be made but many voters did not believe in these reassurances.
- Questions were raised about the 'fairness' of a fee being levied on out of county residents who are employed in Monongalia County. On the other hand, the fee permitted the export of the burden to out of county residents. Approximately one-fourth of employees in Monongalia County commute from other counties.

There are several lessons that could be learned from this election outcome. First, the use of a wage based user fee raises issues of equity and incidence. The magnitude of the fee is more significant for low-wage, part-time employees. Second, the use of alternatives such as a general sales tax or local motor fuel excise tax might either spread the burden more widely or track better with the benefits received from improvements in local roads. Finally, there was little incentive for voter approval to take care of local needs if voters believed passage would preclude access to state funds. Linking local revenues raised to a state matching program could increase the incentives for passage.

3.0 National Trends Affecting Highway Infrastructure Financing

Financing of our nation's highway infrastructure has traditionally been shared by both the federal and state/local government units. For federal-aid highway system roads and bridges funding is available from the Federal Highway Trust Fund, matched by state and local funds. Additional funding for specialized infrastructure has come from the Appalachian Regional Commission and other federal agencies; however, these funds are relatively small compared with those provided from the Trust Fund.

The Federal Highway Trust Fund has two major sources of revenue. The first is the federal excise taxes on motor fuels, which is usually included in the pump price of the fuel even though it is paid by business at the rack or terminal. The second is truck related in the form of truck and trailer sales, heavy vehicle use taxes, and truck tires. The receipts from federal gasoline taxes (currently 18.4 cents per gallon) are the largest source of revenue for the Trust Fund.

The funds available in the Federal Highway Trust Fund have been declining relative to the demands on it. Over the period 1975 through 2007 there have been significant structural changes in the U.S. vehicular fleet including (Figure A-1 and Table B-1):

1. The fuel efficiency of passenger cars has gone from 13.8 miles/gallon in 1976 to 22.5 miles/gallon in 2007. Vans, pickup trucks and SUVs' fuel rates have also climbed during the period while there has been a slight increase in efficiency for trucks.
2. The number of vehicle miles traveled (VMT) per vehicle has increased steadily over the period 1975 to around 2005; however, since that time the vehicle miles traveled has fallen.
3. The increased fuel efficiency in vehicles overall has offset the VMT, leading to a decline in the fuel use per vehicle for all vehicle classes except for trucks. Thus Figure 1 illustrates the impacts on fuel consumption for passenger cars as well as vans, pickup trucks and SUVs over the period 1975-2007.

Beginning in 1999 motor fuel prices started an upward climb associated with the increases experienced in world crude prices. Figure A-2 illustrates the volatility in regular retail gasoline prices over the past 18 years. After hitting a national average price of \$4.114 per gallon during the week of July 7, 2008, retail prices fell to \$1.670 per gallon during the week of December 29, 2008. Since the latter date prices nationally have increased reaching a level of \$2.499 per gallon during the week of September 28, 2009. Since September prices have increased in part due to the deterioration in the value of the U.S. dollar, the primary currency in which crude oil is priced in international markets. Most analysts expect upward pressure on crude oil prices in the years ahead.

These higher and more volatile gasoline prices, coupled with a widening recession, have led to a decline in VMT nationally since 2006. Figure A-3 clearly illustrates the significantly lower vehicle miles driven by month in 2008 and the first half of 2009 compared with 2007. Nationally the decline represents 5.3

percent less driving in November 2008 compared to the previous period.⁵ In the case of West Virginia, the decline was 6.2 percent over the same period. Thus far in 2009 the decline in vehicle miles travel nationally is slightly below the 2008, in part due to the recession and possibly a fundamental shift in the nation's driving patterns.

Another challenge to financing highway construction and maintenance comes from the escalation in construction and maintenance costs associated with the highway system over the past thirty years. In a 2004 study of the West Virginia State Road Fund by the West Virginia University Bureau of Business and Economic Research the impacts of inflation on the various revenue streams and expenditures were clearly identified.⁶ The study clearly documented the erosion in purchasing power associated with inflation. While the 2004 study used cost inflation estimates provided by the Federal Highway Administration, the discontinuation of that statistical series necessitated the identification of an alternative series. For the purposes of this report, use was made of the Bureau of Labor Statistics Producer Price Index (PPI) series related to highway construction. Figure A-7 provides the annual percentage change in the Highway Construction Producer Price Index for fiscal years 1999-2009. While the inflation rate rose to nearly 8 percent in 2000, the subsequent recession in 2001 and 2002 led to the elimination of any inflation pressure. Since 2004, however, inflation in highway construction has increased, reaching an annual rate of 14 percent in 2008 coinciding with the high rate of world economic growth. During 2008 there were significant price hikes in steel, concrete and fuel due, in part, to the rapid growth of overseas economies such as China. Once the world economy moved into recession, the pace of inflation declined. Some highway construction costs have actually declined due to the severe recession; however, this is a temporary phenomenon.

⁵ Federal Highway Administration, *Traffic Volume Trends*, May 2009. Available at <http://www.fhwa.dot.gov/ohim/tvtw/tvtpage.cfm>.

⁶ Patrick C. Mann, Mehmet S. Tosun and Tom S. Witt, *Future of West Virginia's Highway System: A Comprehensive Analysis of the West Virginia State Road Fund and Policy Options*, West Virginia University Bureau of Business and Economic Research, August 2004. Available at www.bber.wvu.edu.

4.0 Current and Potential Federal Highway Transportation Financing Policies

In the previous section it was noted that the Federal Highway Trust Fund was the primary source of revenues, matched by state funds, for highway construction and maintenance. But as was demonstrated in section 3.0, there are long term trends in vehicular fuel use and driving as well as construction cost increases that necessitate a revisiting of current federal transportation funding policy. Guiding the Obama administration's decision regarding current and future federal funding will be a variety of recent studies that examined the long-term financing of transportation needs in the U.S.

In 2006, the Transportation Research Board of the National Academies released a comprehensive study on the motor fuel tax and alternatives for the long-term funding of the national transportation system.⁷ This report made the following recommendations related to highway financing:

1. Maintain and reinforce the existing user fee finance system. Through cooperation between federal and state agencies there would be adjustments in user fee rates to provide incentives for more cost-conscious use of the highway system by users. Current fuel tax exemptions should be eliminated where there are abuses so as to reduce tax evasion. Advanced technology vehicles use of the highways should be associated with advances in user fees so that they are apportioned some of the cost burden associated with highways.
2. Expand use of tolls and test road use metering. This recommendation would permit states to expand tolling on existing roads built through the federal-aid program. Both states and the federal government would explore trials or pilot implementation of programs permitting road use monitoring and mileage charging.

The American Association of State Highway and Transportation Officials (AASHTO) 2007 study of Highway Trust fund revenue options identified several short term options⁸:

1. 10-Cent rate increase in the federal motor fuel excise tax with an option that future increases would be indexed to the Consumer Price Index.
2. 5 Percent sales tax on gas
3. 14.2 percent sales tax on gas in lieu of 28.4-cent gas tax

Longer-term AASHTO identified alternatives to either supplement or replace current fuel taxes. These options included a study on the viability of VMT taxes, perhaps in a form similar to the Oregon study.

During the course of its study, AASHTO found two problems of more immediate concern. The first was the projected insolvency of the Federal Highway Trust Fund by FY2009 or FY2010, which will require Congressional action. This act has not been re-authorized, but has been funded on a continuing resolution basis. The second major AASHTO concern was the significant increases in commodity prices for petroleum, concrete, asphalt, steel, and construction machinery, which has significantly reduced the number of transportation projects state and local transportation agencies can fund.

⁷ Transportation Research Board, *The Fuel Tax and Alternatives for Transportation Funding*, 2006. Available at <http://www.nap.edu>.

⁸ AASHTO, *Revenue Sources to Fund Transportation Needs*, September 2007. Available at www.transportation.org.

Following the AASHTO study was the release of the Interim Report of the National Surface Transportation Infrastructure Financing Commission, which was established by Congress as authorized in the last major transportation bill SAFET3A-LU.⁹ While the study was not the final report it identified three major problems nationally with the current financing methods.

1. Given current revenue policies there is a gap between the supply of funds and the demands by users.
2. Current funding options do not promote optimal use of the highway system since the actual use is not linked to the prices paid by users.¹⁰
3. Decisions regarding funding are politicized and complicated by procedures regarding specific expenditures.

While a permanent funding solution has not been identified by Congress, through the American Recovery and Reinvestment Act 10,600 transportation projects worth more than \$30 billion have been authorized for funding as of November 20, 2009. Of the 9,300 highway construction projects authorized to date, more than half were either under construction or completed. In light of the emerging reduction in federal funding AASHTO released a new list of “ready to go” projects worth \$69.5 billion on December 2, 2009.¹¹

Alternatives to the usual motor fuel taxes have been explored in recent years. One pioneering study was the Oregon Road User Fee Study, which substitute motor fuel taxes for fees based on vehicle miles traveled (VMT)¹². The Oregon Department of Transportation designed a pilot program in which on-board mileage-counting equipment was added to vehicles and users paid a VMT user fee equal to 1.2 cents per mile. Participants filled vehicle tanks at participating service stations. Options explored included separate billing of VMT during rush hours. The study was the first in the U.S. exploring alternatives to motor fuel excise taxes. While there are issues involved in costs and installation of the technology as well as interstate travel charges and privacy, the study was the first to explore use of technology in vehicles and fuel vendors to generate funds outside of the motor fuel excise tax. Other variants of vehicle mile traveled fees include use of local option VMT to ease congestion, particularly in metro areas, and optional payments by vehicle weight fuel type and consumption.¹³ The major challenges to adoption of VMT fees lie in the privacy issues associated with such a system as well as the capital costs associated with installation, operating and monitoring this system. In the long run this may be an option

⁹ National Surface Transportation Infrastructure Financing Commission, *The Path Forward: Funding and Financing Our Surface Transportation System*, Interim Report, February 2008. Available at <http://financecommission.dot.gov>. This website has an extensive set of background documents that were submitted and considered during the Commission’s deliberations.

¹⁰ The issue of how to price road usage was addressed by Robin Lindsey, “Do Economists Reach a Conclusion on Road Pricing? The Intellectual History of an Idea”, *Econ Journal Watch*, Volume 3, Number 2, May 2006, pp.292-379.

¹¹ See AASHTO Press Release dated December 2, 2009.

¹² See www.oregon.gov/ODOT/HWY/RUFPP/mileage.shtml.

¹³ Kathryn Clay, Director of Research, Alliance of Automobile manufacturers, “VMT Fee and Other Possible Solutions to Transportation Revenue Shortfalls”, presented at the 2008 National Council of State Legislators Fall Forum.

for West Virginia if and only if it becomes a federal mandate; otherwise, the startup and compliance costs are too high for the state to consider.

On the other hand, some federal policies appear to undermine the long-term viability of both the Federal Highway Trust Fund and West Virginia State Road Fund. One example is the Car Allowance Rebate System (C.A.R.S.) Program, which is a federal government rebate system introduced in order to induce the sale of new, more fuel-efficient vehicles. It began on July 24, 2009 and ended on August 26, 2009. The total dollar value of all rebates approved during this period was \$ 2.877 billion, dispersed to a total of 690,114 submitted dealer transactions. The month in which the program was running saw the first monthly increase in retail car sales since June 2007¹⁴. The program was considered a booming success by some government analysts due to the unexpectedly high response, and program coordinators were forced to request additional funding to extend the program from its originally intended duration. Nationally, 84 percent of trade-ins were trucks, and 59 percent of new vehicle purchases were cars. According to the C.A.R.S. program press release on the program end date, "The program worked far better than anyone anticipated at moving consumers out of old, dirty trucks and SUVs and into new more fuel-efficient cars".¹⁵

Total requested voucher amounts from West Virginia were \$13,477,000. Since rebates were available in amounts of \$3,500 and \$4,500, for the purpose of this report it is assumed that an average voucher payment of \$4,000 for the purposes of this study. Under this assumption, approximately 3,370 "clunkers" were exchanged in West Virginia, resulting in the purchase of the same number of new cars. Average MPG for trade-ins nationally was 15.8, while the average new vehicle gives an average of 24.9 MPG, an overall increase of 9.1 MPG, or a 58 percent improvement. If one assumes that the average yearly mileage driven is 12,000 miles, then the C.A.R.S is projected to lose \$89.38 in motor fuel excise taxes per vehicle. In total, this means a total of \$301,197.93 in lost motor fuel excise taxes per year in West Virginia. Of course this is offset by one time increases in privilege tax revenues associated with titling the new vehicles in West Virginia. These costs do not include the lost federal motor fuel excise tax that would have been paid into the Federal Highway Trust Fund.

In a recent analysis performed by University of Delaware economists Burton Abrams and George Parsons, the economic costs and benefits of the C.A.R.S. Program were considered.¹⁶ On the costs side, one must consider the cost of each subsidy to the public minus the benefit gained by the car buyer participating in the program. Abrams and Parsons conclude that, according to C.A.R.S. data available at the time of publication, the average vehicle payout was approximately \$4,200 per vehicle. The average real value of trade-ins was obviously less than the subsidy amount for the program to have any effect on demand for new cars, so they assumed a conservative average value of \$1,000 for each retired vehicle.

¹⁴ J.D. Power and Associates. 8/20/2009. <http://www.foxbusiness.com/story/markets/industries/media/jd-power-associates-reports-strong-consumer-response-cars-program-expected-lift/>.

¹⁵ C.A.R.S. Official Government Statistics. 8/26/2009. <http://www.cars.gov/official-information>.

¹⁶ Abrams, Burton and Parsons, George. "Is CARS a Clunker?" *The Economists' Voice*. August 2009.

But how much value does each participant gain from partaking in the program? One can be sure that each person values the subsidy somewhere between \$1,000 and \$4,200, depending on the actual opportunity cost of trading in their “clunker.” Abrams and Parsons assumed an average subsidy value of each participant at \$2,600, which turns out to be the average national cost per vehicle. Since they assume a value of \$1,000 for each “clunker,” which is the cost of participation in C.A.R.S., the overall gain for each program participant is \$1,600. With a taxpayer loss of \$4,200 and a participant gain of \$1,600, the net cost to society is \$2,600 per vehicle.

Up to this point the benefits of the program have been ignored. According to official C.A.R.S. data at the time of publication, average MPG of retired vehicles was 15.8, while newly purchased cars average 25.0 MPG. If the average mile driven per vehicle was 12,000 per year, the program will cut gasoline consumption by 280 gallons per vehicle per year. Because the trade-ins were old and near the end of their useful lives, it was assumed that each “clunker” would have lasted three more years. This means that the C.A.R.S. program will save 840 gallons of gas per vehicle. In addition, a 2009 article published by the National Academy of Sciences estimated the average climate and social cost of burning one gallon of gasoline to be 71 cents. At this rate, the environmental benefits of the clunker program can be measured by taking 840 gallons times 71 cents, or an average of \$596 per vehicle.

While exact benefits to society stemming from the C.A.R.S. program are difficult to quantify, the costs cannot be ignored. The \$596 benefit per vehicle is clearly not worth the \$2,600 cost to the taxpayers. Using these numbers, the net drain on society is around \$2,000 per car, and given the approximately 700,000 participants, this amounts to a total welfare loss of around \$1.4 billion.

Finally, federal policy on Corporate Average Fuel Economy (CAFE) continues to evolve. In December 2007, President George W. Bush signed the Energy Independence and Security Act, a portion of which was directed to increasing vehicle fuel economy. Under this act, the national standard of 35 miles per gallons would be accomplished by 2020. Implementations of the standards are currently under legal review. On January 26, 2009 President Barack Obama directed the U.S. Department of Transportation to review scientific, technological and legal considerations associated with implementation of more restrictive fuel standards. Subsequently, President Obama proposed a new national fuel economy program that would accelerate previous standards. Under the proposal by 2016 the national standard will be 39 miles per gallon for cars and 30 mpg for trucks. As these standards are implemented, the outcome will be greater fuel efficiency in the motor vehicle fleet.

In sum, current federal policy appears to be focused on the short-run issue of providing sufficient economic stimulus through funding short-term, ‘shovel ready’, projects. Due to the increase in the size of the federal deficit and the concerns regarding ‘adverse’ impacts from higher taxes (including user fees), it may be some time before federal transportation policy related to highway financing is clarified. In the long run, it is apparent that increased fuel efficiency is a national priority, thereby leading to future erosion in yields from motor fuel excise taxes.

5.0 West Virginia Highway Financing: Review of Recent Studies and Legislative Action

Tax revenues collected in the State Road Fund from fiscal year 1972 through fiscal year 2009 are presented in Table B-2. Total dedicated tax revenues have generally increased from FY1972 through FY2008. Once the national economy entered into recession and fuel prices reached record highs in FY2009, both motor fuel taxes and privilege taxes declined from the previous year. But as was pointed out in the previous BBER studies, there has also been a decline in the 'real' or inflation adjusted values of revenues over time. In the prior studies actual tax revenues were adjusted for inflation using a construction and maintenance price index provided by the Federal Highway Administration. As discussed earlier in section 3 of this report, the Highway Construction Producer Price Index was used to adjust the actual tax collections for inflation. Table B-3 presents the major tax revenue sources adjusted to 2008 dollars while Figure A-8 provides a view of the series over time.

Since FY1987 there has been growth in total real dedicated tax revenues until FY1994, when the peak real value was reached. Since FY1994 the real total revenues has ranged from highs of around \$874 million in FY1999 to lows of around \$797 million in FY2001. From the latter fiscal year real revenues increase to a high of \$886 million in FY2004 and have since fallen to a two decade low of \$605 million. ***The latter drop is equivalent to a decline of nearly one-third in the real value of total dedicated tax revenues in the State Road Fund.***

Over time the relative importance of the three major tax revenue sources has change considerably. Figure A-4 illustrates the changes in the motor fuel tax, registration fees and sales/privilege tax over time. In FY1970 registration fees were a greater percent of total tax revenues than in FY2009; conversely privilege tax proceeds have increased in importance through FY2005, dropping somewhat in FY2009 due to the decline in new vehicles purchases during the recession.

The challenge of financing West Virginia's highways has been addressed in recent studies. Based upon these studies, the West Virginia Legislature has enacted revisions in West Virginia's code to address the funding shortfalls. The remainder of this section reviews these studies and actions by the Legislature.

State Road Fund Studies 2004-008

In 2004 the West Virginia Department of Transportation, Division of Highways, commissioned a comprehensive analysis of the State Road Fund by the West Virginia University Bureau of Business and Economic Research (BBER).¹⁷ The 2004 study analyzed the various revenue streams and expenditures associated with the State Road Fund. Key conclusions from this study included:

¹⁷ Patrick C. Mann, Mahomet S. Tosun and Tom S. Witt, *Future of West Virginia's Highway System: A Comprehensive Analysis of the West Virginia State Road Fund and Policy Options*, West Virginia University Bureau of Business and Economic Research, August 2004. Available at www.bber.wvu.edu.

- The real inflation adjusted revenues in the State Road Fund has declined in recent years. An increase in one or more revenue sources through tax or user fee hikes is necessary to offset the effects of inflation
- Over time the State Road Fund has provided funding for state programs that were previously funded by the State General Revenue Fund. This diversion of revenue from its original intended use for highway and bridge construction and maintenance has left the State Road Fund with insufficient resources; consequently, the study recommended shifting the funding for various programs to alternative revenue sources.
- The report recommended that increases in fuel and privilege taxes and registration fees be phased-in rather than be increased in one large increment.
- Increases in motor fuel taxes should be linked to a price index, such as the Federal-aid Highway Construction Price Index, to insure the generation of adequate income to maintain highway and bridge construction and maintenance.
- Finally, attention must be given to the rapidly increasing costs associated with the Department of Motor Vehicles (DMV) operations. Consideration must be given to the options of either reducing the growth in the DMV operations or substantially increasing the various license and registration fees.

The 2006 West Virginia Tax Modernization report also addressed funding of the State Road Fund in its final report to Governor Joe Manchin III.¹⁸ Among the key recommendations affecting this fund by the State Road Fund Subgroup in the October 2006 report are:

- On the issue of revenue stability, the Subgroup concluded that the fund does not have sufficient levels of revenues to meet its current requirements. The five cent per gallon motor fuel excise tax scheduled to expire August 1, 2007 should be renewed. The variable component (equal to five percent of the average wholesale price of motor fuel) should be recalculated for a period beginning January 1, 2007 and that the wholesale price is increased from the current rate of \$0.97 to \$1.30.
- To add to revenue stability the minimum privilege tax levied by DMV should be increased from the current charge of \$25 (based on a book value of \$500 or less).
- There were several consumer friendly recommendations that waived inspection fees for new vehicles, reduced registration fee of vehicles titled in other states, and provided for collection of the consumer sales and use tax at time of sale.
- The privilege tax should be changed to a special consumer sales and service tax permitting deductibility on federal tax forms and should be paid on a sale and remitted by the seller.
- There should be a late fee on expired registration and all new registrations commence from the expiration date.
- There should be a re-examination of transfers from the General Revenue Fund to the State Road Fund, the latest transfers being in Fiscal Year 1983. In addition, some expenses should be transferred from the State Road Fund to the General Revenue Fund. The amount of consumer

¹⁸ West Virginia Department of Revenue, *2006 Report to Governor Joe Manchin III by the West Virginia Tax Modernization Project*, October 2006.

sales and use tax paid for purchases by contractors for use in Department of Transportation projects could be estimated and transferred back into the State Road Fund. Other estimated consumer sales and use tax revenues from the sales of tires and batteries as well as vehicle repairs could be transferred into the State Road Fund.

- Paid advertising on the West Virginia Courtesy Patrol Vehicles could defray their operations and reduces expenses charged to the State Road Fund.
- Department of Transportation accounts and funds could be consolidated thereby providing more administrative flexibility.
- Local option taxes could permit counties to levy additional funds supporting highway construction and maintenance.
- The Subgroup also considered several issues for long-term study including:
 - Alternative funding options for treatment of hybrid and alternative fuel vehicles
 - Possible indexing of registration and other fees to the Consumer Price Index.
 - Possible increase of the privilege tax to six percent, placing vehicle taxation on par with other tax goods
 - Integration of vehicle licensing with registration of personal property at the county level.
 - Consider privatization of the West Virginia Turnpike.

Additionally, in the fall 2006 the Joint Committee on Finance of the West Virginia Legislature commissioned an update of the 2004 study.¹⁹ This report provided updated forecasts of current State Road Fund revenue sources and outlined additional policy options that were not addressed in the 2004 report. The report duplicated some of the Commission's recommendation due, in part, to the fact that BBER faculty and staff participated in both studies. Among the options considered were:

- Renew five cents per gallon motor fuel excise tax set to expire on August 1, 2007.
- Increase in the privilege tax from five to six percent and to change to a dedicated sales tax, thereby permitting the deductibility of federal income tax if authorized under federal tax laws.
- Adjustment of selected registration fees to bring in line with other states and adjustment of annual fees by increases in either the Consumer Price Index or Federal-aid Highway Construction Price Index.
- Imposition of a late fee on expired registrations and continuation of registration as of the expired date.
- Permit local option taxes and fees thereby shifting responsibility for financing to localities which are willing to pay.
- Use of tax increment financing for highway construction and maintenance.
- Other innovative ways of pricing road usage were discussed including the Oregon experiment with a mileage-monitoring system and privatization of toll roads; however, no policy recommendations were made.

¹⁹ Tom S. Witt, *Financing West Virginia's Highways: An Update*, West Virginia University Bureau of Business and Economic Research, January 2007. Available at www.bber.wvu.edu.

- The lack of a sales and use tax exemption for purchases by contractors for specific use in state transportation project results in a transfer from the State Road Fund to the State General Fund. To remedy this subsidy, the State Tax Department could estimate the amount collected and transfer it back to the State Road Fund.
- A portion of the sales tax collections on tires, batteries and vehicle repairs could be transferred to the State Road Fund in order to provide additional funds.
- Reaffirmed 2004 report recommendation to curtail cost growth associated with Division of Motor Vehicles office expansion across West Virginia.
- Develop alternative user fee funding options for alternative fuel and hybrid vehicles to insure their continued contribution to the State Road Fund.

Legislative Actions 2004-2008

Over the period 2004-2008 the West Virginia Legislature passed legislation addressing many of the recommendations contained in these reports. Among those legislative actions were the following:

- Renewal of the five cent per gallon motor fuel excise tax that expired August 1, 2007 with an expiration on August 1, 2013. (Code of West Virginia §11-14C-5). Note: This was made permanent with the passage of Senate Bill 4004 during the November 2009 Extraordinary Session.
- Shift privilege tax of five percent to a vehicle sales tax permitting deductibility on federal income tax filing.
- Examination of public-private partnerships permitting the private sector to deliver a service or facility for use by the general public for a fee.
- Eliminated the “Welcome to West Virginia” privilege tax permitting the crediting of vehicle consumer sales tax paid in other states when vehicle titled in West Virginia.
- Estimate the amount of sales and use exemptions for purchases by contracts for specific use in West Virginia Department of Transportation projects within the State and allocate these funds from the State General Revenue Fund to the State Road Fund. (Code of West Virginia §11-15-9 (b) 6). Under this statute the transfer is six percent of 40 percent of the State Highway contracts for the prior year. The following transfers were made from the State General Fund to the State Road Fund: FY2008 \$12,702,171.33 and FY2009 \$15,243,692.29. It is estimated that around \$15 million may be transferred during FY2010 due to the higher amounts of federal AARA dollars being expended on construction and maintenance activities.
- Shifted programs currently funded out of the State Road Fund to other funding sources. For example, the Courtesy Patrol’s primary source of funding comes from the Tourism Promotion Fund. (Code of West Virginia §5B-2-12).
- Changes made in the motor fuel excise tax through Governor’s Executive Orders and legislative action (see next section).
- Reaffirmed 2004 report recommendation that two programs-West Virginia State Police and Public Service Commission Weight Enforcement-could have funding provided from the General Revenue Fund versus current funding from the State Road Fund.

- Permitting counties the authority to impose, administer, collect and enforce payment of voter-approved service fees for the purpose of providing special infrastructure projects such as highway construction and maintenance within the county (known as the Local Powers Act). (Code of West Virginia §7-20-11 through §7-20-24). The implementation of this act in Monongalia County is discussed later in this document.
- Use of general revenues to supplement State Road Fund tax revenues in 2006.

Studies and Actions 2009

West Virginia’s motor fuel excise tax is composed of two elements. First is a basic tax rate of 20.5 cents per gallon imposed upon every distributor, producer, retail dealer, importer or user, based on the quantities of all gasoline or special fuel sold or used in the state (West Virginia Code §11-14C-5 enacted during the 2009 Fourth Extraordinary Session).

The second component of the rate is a consumer sales and use tax on the sale of gasoline and special fuel, imposed at the wholesale level on distributors and importers. The average wholesale price of gasoline is determined annually based on sales data supplied by distributors and other information. The average wholesale price is the single statewide average wholesale price per gallon, rounded to the third decimal, exclusive of state and federal excise taxes, but not less than \$0.97 per gallon, times the rate of five percent. This tax was enacted in 1983 and was equivalent to 4.85 cents per gallon in 2004. This was raised to 6.5 cents per gallon in 2005, and continued to increase through 2008. Recent legislative action during the 2009 Fourth Extraordinary Session changed the wholesale price to \$2.34 per gallon. Table 1 summarizes the rates from selected years from 1983-2009.

In estimating tax yields it is often assumed that each cent of tax levied generates \$11 million for the retail and \$14.3 million for the wholesale components of the motor fuel tax. The difference in the yield is based upon a broader tax base for the wholesale tax (based upon a survey of the average wholesale price of all fuels sold in West Virginia).

| Calendar Year | Tax Rate (¢ per gallon) | Notes |
|---------------|-------------------------|---|
| 1978 | 10.50 | |
| 1983 | 15.35 | Includes wholesale tax of 4.85 |
| 1989 | 20.35 | Includes wholesale tax of 4.85 |
| 1993 | 25.35 | Includes wholesale tax of 4.85 |
| 2001 | 25.65 | Includes wholesale tax of 5.15 |
| 2002 | 25.35 | Includes wholesale tax of 4.85 |
| 2005 | 27.00 | Includes wholesale tax of 6.5 |
| 2006 | 27.00 | Rate frozen by Governor’s Executive Order |
| 2007 | 31.50 | Includes wholesale tax of 11.0 |
| 2008 | 32.20 | Includes wholesale tax of 11.7 |
| 2009 | 32.20 | Rate frozen by legislative action |

To put the evolution of the motor fuel excise tax in perspective, it is useful to review the historic evolution of the tax, with an emphasis on the wholesale component. In November 2005, the Tax Department reported that the final average wholesale price on gasoline and special fuel for the period July 1, 2005 through October 31, 2005 was \$2.01 per gallon, an increase of \$0.71 from the \$1.30 average for 2004. This increase was due to the substantial increase in gasoline prices following Hurricane Katrina, among other things. Under West Virginia law, this increase would have resulted in an increase in the wholesale component from 6.5 cents per gallon to 10.05 cents per gallon, resulting in a total motor fuel tax rate of 30.55 cents per gallon. A projection of the additional revenue accruing to the State Road Fund if the higher rate went into effect would be at least \$51 million over the period February 2006 through January 2007 due to the one month lag in collections. Gov. Manchin issued an executive order freezing the wholesale rate (tax holiday) at the rate of 6.5 cents per gallon for 2006.

Tax holidays, such as enacted in West Virginia in 2006, have been examined in detail by economists.²⁰ These temporary measures are very popular with consumers and lawmakers; however, they introduce costly economic distortions by temporarily shifting tax burdens from some industries and products to others temporarily. In addition, such holidays may introduce unnecessary instability in tax laws and in some instances, may have increased administrative costs.

In November 2006 the Tax Department reported that the final average wholesale price on gasoline and special fuel for the period July 1, 2006-October 31, 2006 was \$2.206 per gallon, an increase of almost \$0.20 from the 2005 average. The Tax Commissioner issued Administrative Notice 2006-22 announcing that the wholesale component would now be 11.0 cents per gallon, making the motor fuel excise tax 31.5 cents per gallon, effective January 1, 2007. The additional funds from this tax increase would begin in February 2007. The estimated additional funds accruing annually to the State Road Fund from this increase of 4.5 cents per gallon are estimated to be around \$63 million.

For calendar year 2008 the Tax Commissioner issued Administrative Notice 2007-24 announcing that the wholesale or variable components would be 11.7 cents per gallon, based upon an average wholesale price of motor fuel of \$2.345 for the period July 1, 2006-October 31, 2007. This increased the motor fuel tax rate to 32.2 cents per gallon for calendar year 2008.

During the Second Special Session of the 2008 Legislature HB 218 was passed and signed into law by Governor Manchin. This bill amends Code of West Virginia (§11-14C-48) establishing the Motor Fuel Excise Tax Shortfall Reserve Fund that consists of funds transferred to the General Revenue Fund for the purpose of accumulating funds in light of motor fuel excise tax receipts shortfalls below the official revenue estimates. Under this legislation a fund totaling \$40 million was established with \$20 million allocated to shortfalls during calendar year 2008 and \$20 million for shortfalls during calendar year 2009. This legislation has guidelines for the determination of motor fuel excise tax revenues for the following periods:

- Fiscal year ending June 30, 2008

²⁰ Jonathan Williams and Andrew Chamberlain, "Temporary Gasoline Tax Holidays: Relief for Motorist or Poor Tax Policy?" *State Tax Notes*, August 21, 2006, pp.531-533.

- Monthly shortfalls for the period of July 2008-December 2009.

For calendar year 2009, the Tax Commissioner issued Administrative Notice 2008-28 announcing that the wholesale or variable component would be 11.7 cents per gallon, based upon an average wholesale price of motor fuel for the period July 1, through October 31, 2009 of \$2.34 per gallon for purposes of the tax computation. This resulted in an extension of the variable tax to 11.7 cents per gallon during 2009. It is not known what the average wholesale price would have been during the survey period (July 1, 2008-October 31, 2008); however, it should be noted that the peak in U.S. gasoline and diesel prices occurred during the first half of July 2008 when diesel retail average was \$4.76 per gallon (July 14, 2008) and gasoline retail was \$4.114 per gallon (July 7, 2008). Following the peak, the prices fell through the fall.²¹ If the average wholesale price during the period was, say \$3.30, the variable component of the motor fuel tax would have been 16.5 cents per gallon, for a total motor fuel tax of 37.0 cents per gallon. The lost revenue to the State Road Fund from keeping the rate at 32.2 cents per gallon is in the range of \$63 million assuming a yield of \$14 million per cent and the estimated variable wholesale tax rate of 16.5 cents.

The West Virginia Department of Revenue transferred approximately \$10,700,000 out of the Motor Fuel Excise Tax Shortfall Reserve Fund in August 2008 to offset a shortage between estimated and actual collections. In early September, however, over \$11.8 million in August collections were deposited in this fund negating the shortage. In general FY2009 receipts were not below the official FY2009 estimates, meaning that future funds would not be received by the State Road Fund until such time as the shortfalls in collections exceeded the overpayments.

In the June 2009 Extraordinary Session the West Virginia Legislature passed House Bill 104 providing for continuation of the Motor Fuel Excise Tax Shortfall Reserve Fund to August 1, 2013. During the early fall it was recognized that continued declines in wholesale prices of oil products might lead to a decline in the wholesale component of the motor fuel tax, thereby reducing the revenue yields from this portion of the tax. Projections indicated the gas tax would be lowered by 1.7 cents per gallon on January 1, 2010.

During the November 2009 Extraordinary Session the West Virginia Legislature passed Senate Bill 4004 that froze the current motor fuel excise tax at 32.2 cents per gallon (or equivalent for other fuels). The bill also changed the minimum wholesale price used for the calculation of the variable wholesale sales and use tax (currently levied at a 5 percent rate) to \$2.34 per gallon from the prior rate of 97 cents per gallon, effective January 1, 2010. The bill also stipulates that effective January 1, 2011 the average wholesale price will not vary by more than ten percent from the average wholesale price of motor fuel determined by the Tax Commission for the previous calendar year. This allows for a measured upward or downward adjustment in the base with the floor price being \$2.34. SB4004 also terminated the Motor Fuel Excise Tax Shortfall State Road Fund and transferred (per House Bill 411) the estimated \$27 million remaining in this fund to the State Road Fund. These funds were designated for repairs to

²¹ Energy Information Administration, U.S. Department of Energy, *Weekly Gasoline and Diesel Prices*, www.eia.doe.gov.

secondary roads. Without this transfer secondary roads maintenance and contract paving would be severely curtailed during the current fiscal year.

In the final analysis of the history of the motor fuel excise tax, it is clear that through legislative or gubernatorial actions consumers have been able to save over \$114 million in taxes that would have been levied; however, this is at the expense of maintaining the state's highway system. In July 2009 TRIP released a study on the state's highway system and its ability to provide efficient and safe transportation for West Virginians.²² Some of the key findings from this report:

- West Virginia faces a transportation funding shortfall of about \$5 billion over the time period 2009-2018, which will increase considerably by inflation in construction costs. Current federal stimulus funds allow construction in the short run but will not address the long term projects needed to repair and enhance the state's surface transportation system.
- Without substantial increases in federal, state or local highway funding, West Virginia will not be able to improve the condition, safety and efficiency of the highway system, potentially reducing the ability of the transportation system to service economic development initiatives in the state.
- Congestion has increased on West Virginia's major roads and highway due to population and economic growth.
- In 2007, 37 percent of major West Virginia roads were in poor or mediocre condition. More than one-third of West Virginia's bridges show significant deterioration or do not meet current design standards.
- West Virginia's traffic fatality rate is 54 percent higher than the national average. Improved safety could result from investments in the state's highway system since roadway design is an important factor in about one-third of fatal and serious accidents.
- The efficiency of the state's transportation system is critical to the state's economy. On an annual basis \$38 billion in goods are shipped from sites within the state and another \$37 billion in goods are shipped to sites within the state, primarily using trucks.

It goes without saying that chronic underinvestment in the state secondary road system will lead to increasing amounts of deferred maintenance, resulting in escalating costs for highway construction and maintenance in future years. Deficient roads and bridges with structural defects result in sizable expenses to the motoring public when vehicles are damaged.

²² TRIP, *Future Mobility in West Virginia: Meeting the State's Need for Safe and Efficient Mobility*, July 2009. Available at www.tripnet.org.

6.0 Motor Fuel Excise Tax: Options

Over the past thirty years West Virginia, along with other states, has increased its motor fuel excise tax in order to increase revenues in support of highway construction and maintenance. Table 1 documented the changes in this tax rate since calendar year 1978. It is estimated that the actions in 2006 and 2009 freezing the wholesale tax rates have resulted in a loss of nearly \$114 million in motor fuel excise taxes that otherwise would have been collected and used in the State Road Fund.

West Virginia's current motor fuel tax rate of 32.2 cents per gallon for gasoline ranks as the 12th highest in the country. States with rates (inclusive of state excise, sales, gross receipts, oil inspection fees, county and local taxes, underground storage tank fees and miscellaneous environmental fees) above West Virginia include California (47.4), New York (44.8), Hawaii (44.4), Connecticut (40.8), Washington (37.5), Illinois (36.7) Florida (34.5, Michigan (33.2), Nevada (33.1), Rhode Island (33), Wisconsin (32.9), and Pennsylvania (32.3). In the case of diesel taxes West Virginia current rate ranks also as the 12th highest in the country. Figure A-9 and A-10 present the motor gasoline taxes and motor diesel taxes (inclusive of federal and state averaged across octane), respectively by state, as of October 1, 2009.

Many state residents perceive that this tax burden is too high; however, it is useful to put the burden in perspective. Table B-4 presents estimates of the total taxes paid annually by the WV Motor Fuel Tax Rate and fuel efficiency (miles per gallon) at different tax rates since 2001. If a vehicle was driven 10,000 miles within West Virginia in 2001 and had a fuel efficiency rate of 10 miles per gallon, then the vehicle owner would have paid \$256.50 in total motor fuel taxes in that year. On the other hand, in the same year a vehicle with a fuel efficiency rate of 20 miles per gallon would pay half as much. Similar types of patterns show up in more recent tax years when the motor fuel tax rate is higher.

On the other hand, as documented in section 3.0, there has been a dramatic increase in fuel efficiency of vehicles over time and this will continue for the foreseeable future. As a result, vehicles today consume less motor fuel and in light of the current recession, are being driven less. Suppose a vehicle in 2001 had been driven 14,000 miles annually with a fuel efficiency of 15 mpg. The vehicle owner would have paid \$239.40 in motor fuel excise taxes. If the vehicle were traded in 2009 for a new vehicle averaging 25 mpg and had 12,000 miles driven, then the motor fuel taxes paid in 2009 would be \$123.12, or a reduction of nearly 49 percent in motor fuel tax collections. If the new vehicle were a 2009 Toyota Prius averaging 40 mpg, the motor fuel taxes paid annual in 2009 would be \$96.60, a decline of 60 percent. As a result, the continued growth of more fuel efficient vehicles will reduce yields per vehicle.

In addition, the projected declines in coal production from 2008 record years in West Virginia will result in reduced diesel fuel consumption for the foreseeable future.²³ In December 2008 the spread between diesel (ultra low sulfur on highway) and gasoline (all grades) was nearly 56 cents but this spread had narrowed to around 2-5 cents by September 2009. Some of the upward pressure on the statewide average wholesale price of motor fuel (used to calculate the variable component of the motor fuel tax)

²³ Randall A. Childs and George W. Hammond, Consensus Coal Production Forecast for West Virginia 2009-2030, Bureau of Business and Economic Research, September 2009. Available at www.bber.wvu.edu.

during FY2007-FY2008 was due to the considerably higher price of diesel compared to gasoline. As this differential has narrowed and crude oil prices remain relatively low around \$70/barrel, the average wholesale price may decline from the record levels, leading to a potential decline in the variable tax component from its frozen level of 11.7 cents per gallon in future years. For each one cent decline the estimated revenue loss could be upwards of \$14.3 million. This was one of the rationales for freezing the rate during the November 2009 special legislative session.

The state economy, along with the rest of the country, is weathering a recession. The 2010 West Virginia economic forecasts produced by the WVU Bureau of Business and Economic Research indicate a slow recovery starting in mid 2010 and continuing through 2014. Economic growth in jobs and per capita income will lag behind U.S. growth²⁴. This implies little growth in demand for motor fuel.

The November 2009 Revenue Collection Report from the West Virginia State Budget Office indicates the motor fuel tax collections for the first five months of FY2010 were \$151,256,000 compared to \$156,700,000 estimated and budgeted. Thus far this fiscal year shows a collection shortfall of \$5,444,000 in motor fuel tax collections, largely as a result of the economic downturn, more fuel efficient vehicles and fewer miles driven.

In developing forecasts of motor fuel tax revenues, the following assumptions are made:

- The decline in the number of miles driven annually will be at least three percent from the historic levels. In part, this reflects the fundamental changes in driving behavior in response to recent record fuel prices. In addition, the aging of the population in West Virginia will result in downward pressure in miles driven.
- Increased fuel efficiency will reduce fuel consumption by at least three percent annually for the foreseeable future.
- The West Virginia and national economy will have a slow rebound from current recessionary levels, with the state lagging behind the national economy. Slow job and population growth will dampen demand for motor fuel.
- The spread between gasoline and diesel will be much lower than historic and the continued reduced production and distribution of coal will put downward pressure on the variable component after the freeze is over.
- The C.A.R.S program was estimated to cost \$301,197 in lost revenue starting with FY2010.
- By FY2011 the West Virginia economy starts to slowly recover with minor increases in motor fuel demand.

The cumulative effects of the above assumptions will be an annual decline of six percent in motor fuel consumption and tax revenues for the period FY2011-2012 and a small increase in FY2013. Table 2 summarizes motor fuel tax collections, tax rates and yields per cent for the past six fiscal years along with current budgeted collection and the forecasts for FY2012-FY2012.

²⁴ George Hammond, *West Virginia Economic Outlook 2010*, Bureau of Business and Economic Research, West Virginia University, November 2009.

Table 2 Motor Fuel Tax Collections and Rates

| Fiscal Year | Tax Collections (thousands) | Tax Rate (¢ per gallon) | Average Yield Per ¢ (thousands) |
|----------------------|--------------------------------|----------------------------|------------------------------------|
| 2003 | \$289,174 | 25.35 | \$11,407 |
| 2004 | 309,318 | 25.35 | 12,202 |
| 2005 | 311,625 | 25.35 | 12,293 |
| 2006 | 320,757 | 27.00 | 11,880 |
| 2007 | 349,172 | 31.50 | 11,085 |
| 2008 | 404,223 | 32.20 | 12,554 |
| 2009 | 384,539 | 32.20 | 11,942 |
| <i>2010 Budgeted</i> | <i>380,000</i> | <i>32.20</i> | <i>11,801</i> |
| <i>2011 Forecast</i> | <i>357,195</i> | <i>32.20</i> | <i>11,093</i> |
| <i>2012 Forecast</i> | <i>342,898</i> | <i>32.20</i> | <i>10,649</i> |
| <i>2013 Forecast</i> | <i>350,000</i> | <i>32.20</i> | <i>10,870</i> |

Source: FY 2003-2009 from West Virginia State Auditor's Office. FY2010 budgeted from the West Virginia Budget Office. FY2011-2013 Forecasts are author's estimates.

The forecasts above represent a significant decline in motor fuel tax revenues from recent periods. While the consumer price index is expected to show little change over the forecast period, the producer price index for new highway construction will probably increase, resulting in continued erosion in the real value of the motor fuel tax revenues.

The following are some options for increasing revenue yields from the motor fuel excise tax:

- Increase the tax rate from 32.2 cents per gallon. The yield from increasing the base motor fuel excise tax is approximately \$14.3 million per cent. Thus to keep the FY2011 revenues at \$380 million would necessitate a 1.6 cent increase in the base rate.
- To reduce volatility in current collections from month to month, the reporting date for collections should change from the end of the month to the 20th day of the month.
- To provide parity and equity with other consumer sales taxes, the wholesale tax rate could be increased to six percent from its current rate of five percent.

Unfortunately, outside of increases in tax rates, there appear to be no other feasible options for increases in revenues from motor fuel excise taxes.

7.0 Sales/Privilege Tax: Options

The sales tax is levied on the sale and use of motor vehicles in West Virginia (West Virginia Code §11-15-3c). Previously known as the privilege tax, this consumer sales tax is levied at a rate of five percent of the sales price of the vehicle. Credit against the tax liability is provided for vehicles previously registered in other states when proof has been established by a county assessor that the vehicle is recorded in their office.

Table B-2 documents the growth of the sales tax on motor vehicles in actual dollars from FY1972 through FY2009. The long term growth is largely due to the growth in the number of motor vehicles purchased annually along with increases in the purchase price of these motor vehicles. If one adjusts for inflation (Table B-3) it is apparent that this revenue source reached a peak of \$267,664,000 (2008\$) in FY2002 and dropped to \$146,170,000 (2008\$) by FY2009. ***This represents a decline of nearly 45 percent in the purchasing power of sales tax revenues levied on the sale and use of motor vehicles from its peak.***

The recent deterioration in the national and state economy has affected the amount of sales tax paid on motor vehicle purchases deposited into the State Road Fund. Figure A-5 charts the monthly patterns in the monthly privilege tax collections over the period January 2006 through November 2009. Since the C.A.R.S. program in West Virginia resulted in the purchase of approximately 3,370 new motor vehicles over this period, one would have expected higher sales tax revenues than anticipated at the time the budget estimate was established; consequently, there has been significant deterioration in sales tax revenues associated with the sale and use of motor vehicles, absent the C.A.R.S. program.

This becomes clearer when one looks at the historic and forecasted new car registrations in West Virginia. Table 3 summarizes the IHS Global Insights forecasts of new vehicle registrations on a quarterly basis through 2010Q2 and annually for 2010-2013. Figure A-6 presents the actual and forecasted new car and truck registration prepared by HIS Global Insights for the period 1995-2015. It is obvious that within the current fiscal year there will be a significant decline in new vehicle registrations which will lead to significant erosion in privilege tax receipts.

The revenue collections for calendar year 2008 and the first nine months of 2009 were generally below comparable months in 2006 and 2007. For the first five months of FY2010 (July-November 2009), sales tax revenues collected were \$8,860,000 below levels estimated by the West Virginia Budget Office.²⁵ If this collection pace continues (87 percent of estimate collected), the actual sales tax collections for FY2010 could be as low as \$139,687,000 compared to an official estimate of \$160,550,000. This would represent a shortfall of \$20,863,000 in sales tax collections for the current fiscal year.

On a more pessimistic note, if one assumes the loss in new vehicle registrations is 30,000 during the current fiscal year and the average selling price is \$22,000 per vehicle, then the lost sales tax revenue to the State Road Fund is \$33 million. In addition, the slowing economy may reduce used car sales further reducing privilege tax revenues.

²⁵ Source: West Virginia State Budget Office, December 1, 2009.

| Table 3 New Vehicle Registrations | |
|--|---|
| Year and Quarter | New Vehicle Registrations (Annualized) |
| 2008Q4 | 58,200 |
| 2009Q1 | 55,100 |
| 2009Q2 | 55,400 |
| 2009Q3 | 63,500 |
| 2009Q4 | 64,300 |
| 2010Q1 | 62,000 |
| 2010Q2 | 63,600 |
| 2010 | 66,600 |
| 2011 | 77,400 |
| 2012 | 82,900 |
| 2013 | 87,600 |

Source: IHS Global Insight-US Regional Service, Short-Term and Long-Term Outlook for West Virginia, September 2009 Update.

In developing forecasts of sales tax collections, the following assumptions were made:

- During the current fiscal year collection yields to date will continue to significantly lag behind at the same rate.
- While new car registrations begin to grow in late 2010, the growth will accelerate through 2013. This growth is associated with both the slow rebound in the state economy as well as delayed pent-up demand by consumers.
- Increases in the prices of new vehicles will be rather modest so the average vehicle sales price remains rather constant.

Table 4 provides the projections of sales tax collections for FY2010 through FY2013. It should be noted that the collections are not forecast to reach the levels experienced in FY2004. Furthermore, if the collections are adjusted for inflation, the real value will continue to decline.

The following are some options for increasing revenue yields from the sales tax levied on motor vehicles.

- Increase the tax rate from five to six percent, comparable to the rate levied on other consumer products.
- Recognizing that more fuel efficient vehicles will be providing less financial contribution to the construction and maintenance of West Virginia's highway system, a surcharge of one-half to one percent sales tax might be levied on vehicles with federal fuel efficiency above a given predetermined level.

| Table 4 Sales/Privilege Tax Collections | |
|--|--------------------------------|
| Fiscal Year | Tax Collections (thousands) |
| 2003 | \$167,723 |
| 2004 | 177,000 |
| 2005 | 176,495 |
| 2006 | 171,479 |
| 2007 | 173,306 |
| 2008 | 169,463 |
| 2009 | 150,794 |
| <i>2010 Budgeted</i> | <i>160,550</i> |
| <i>2010 Forecast</i> | <i>140,000</i> |
| <i>2011 Forecast</i> | <i>144,800</i> |
| <i>2012 Forecast</i> | <i>161,300</i> |
| <i>2013 Forecast</i> | <i>171,600</i> |

FY2011-2013 Forecasts are author's estimates

8.0 Registration Fees: Options

The West Virginia Division of Motor Vehicles collects a variety of motor vehicle and driver registration fees, collectively referred to as registration fees in the State Road Fund. The amounts collected annually have been relatively constant compared to other revenue sources. In large part, this is due to the fact that many of these fees have not been changed within the past twenty years or so. When one accounts for the inflation in highway construction and maintenance, the contribution from registration fees have significantly fallen (Table B-3). ***This represents a decline of nearly 37 percent in the purchasing power of registration fee revenues from its peak.***

The November 2009 Revenue Collection Report from the West Virginia State Budget Office indicates the registration fee collections for the first five months of FY2010 were \$32,107,000 compared to \$32,427,000 estimated and budgeted. Thus this fiscal year shows a collection shortfall of \$350,000 in registration fees, largely as a result of the economic downturn. This means that about 99 percent of estimated collections are actually being realized. The FY2010 collections are budgeted at \$89,407,000 so a continuation of a 99 percent collection rate will represent a nearly one million dollar shortfall for the year.

Previous studies have clearly indicated the need to index many registration fees for inflation; however, most of these fees have not changed in over 20 years. As an example, Table 5 provides estimates of the annualized value of the driver's license and registration fee for a basic passenger vehicle in West Virginia and surrounding states. While these are just two examples, it is apparent that West Virginia registration fees are low compared to other states. Some upward adjustment in the driver's license fee will be required due to the expenses of complying with the REAL ID Act, passed by Congress to insure national standards for state-issued driver's licenses and other non-driver identification cards.

| Table 5 Annualized Value of Driver's License and Annual Registration Fees West Virginia and Surrounding States Fall 2009 | | |
|---|--|------------------------------|
| State | Regular Driver's License Fee Per Year | Registration Fee Per Year |
| Kentucky | \$5.00 | \$21.00 |
| Maryland | \$7.50 | \$64.00 |
| Ohio | \$6.00 | \$34.50 |
| Pennsylvania | \$7.00 | \$36.00 |
| Virginia | \$8.00 | \$38.75 |
| West Virginia | \$2.60 | \$30.00 |

In developing forecasts of registration fee collections for FY2010-FY2013 the following assumptions are made:

- There will be no change in registration fees across all vehicle and driver classes.

- There will be a slight decline in the number of vehicles and drivers registering annually. In part this is due to the aging of the population and deferral of initial drivers licenses by younger drivers.

These assumptions imply stability in registration fees accruing to the State Road Fund. Due to continued inflation in highway construction and maintenance, the actual real contribution of registration fees will continue to decline.

| Table 6 Registration Fee Collections | |
|---|--------------------------------|
| Fiscal Year | Fee Collections (thousands) |
| 2003 | \$86,238 |
| 2004 | 83,146 |
| 2005 | 88,074 |
| 2006 | 86,976 |
| 2007 | 87,058 |
| 2008 | 86,396 |
| 2009 | 89,428 |
| <i>2010 Budgeted</i> | <i>89,407</i> |
| <i>2010 Forecast</i> | <i>89,000</i> |
| <i>2011 Forecast</i> | <i>89,000</i> |
| <i>2012 Forecast</i> | <i>88,500</i> |
| <i>2013 Forecast</i> | <i>88,000</i> |

FY2011-2013 Forecasts are author's estimates

The following are some options for increasing revenue yields from registration fees.

- Adjustment of selected registration fees to bring in line with other states and adjustment of annual fees by increases in either the Consumer Price Index or Highway Construction Producer Price Index. The objective of these changes is to increase the relative contribution of registration fees to the overall State Road Fund.
- Consider special registration fee for alternative fuel vehicles and/or high mpg vehicles. Since these vehicles contribute significantly less in motor fuel excise taxes, equity of treatment with other vehicles necessitates an increase in their relative contribution through higher registration fees. The amount of fee could be based on the estimated motor fuel taxes that would have been paid less the actual paid assuming average number of miles driven annually.

9.0 Other Options and Concluding Comments

The financing issues facing West Virginia are not unique. Many states are facing dwindling real revenues to support highway construction and maintenance. The traditional reliance on highway user fees in light of advances in more fuel efficient and alternative energy powered vehicles, coupled with considerably higher gasoline and diesel fuel prices, has led to considerable shortfalls in funding for highway construction and maintenance. Many states provide additional funding through general revenue fund transfers; however, outside of West Virginia and three other states, most states divide responsibility for their highway systems between state and local governmental units. Other states have explored the possibility of public-private partnerships for the construction and maintenance of their highway systems. As indicated in section 3.0, long-term the solution may be in the adoption of user fees based upon the vehicle miles traveled; however, the major challenges to the adoption are the privacy issues involved as well as the capital costs associated with installation, operation and monitoring of a VMT based fee system.

Previous studies of highway finance in West Virginia have identified funding options including the use of tax incremental financing, allocation of portions of the sales tax collection on vehicle related goods and services (batteries, tires, and vehicle repairs), cost curtailment and reorganization of DMV operations, among others. In the remainder of this section attention is directed to several options, which may have the greatest likelihood of being 'innovative' for West Virginia.

Public-Private Partnerships

Many states have explored partnerships with the private sector as one solution to public revenue shortfalls. Among the options are the construction of private toll roads and bridges, sale or leasing of existing public roads and bridges, and provision of public land as cost share. In West Virginia such public-private partnerships appear to be concentrated in southern West Virginia in conjunction with mountaintop or contour mining and post-mine reclamation. An expansion of these partnerships might be take the form of infrastructure corridors, in which land use planning establishes highway right-of-way corridors that might also accommodate energy transmission facilities (high voltage electric transmission or natural gas/petroleum product pipelines), sewer and water, rail transportation and fiber optic systems. While such corridor locations might be limited to selected areas of the state, they may address some local transportation needs.

Bonding

West Virginia currently has outstanding bonds from past bond issues. Generally these bonds are issues for the purpose of construction and maintenance of the overall road system. Given the current low interest rate regime nationally, it may be appropriate to explore issuance of new bonds for highway and bridge construction and maintenance. While it may be difficult to fund the bonds out of future State Road Fund revenue streams, alternative funding might be provided from a sales tax increase or increases in other tax revenues that are not currently dedicated to other purposes. This option would have to be explored more carefully prior to the development of specific bills.

General Revenue Fund Transfers

In the absence of any increases in the rates levied under the motor fuel excise tax, sales tax and registration fees, the shortfall in funding may necessitate additional transfers from the State General Fund. The challenge will be finding the discretionary funds given the projections of significant revenue shortfalls in FY2012 and beyond. Without significant budget reductions elsewhere, the ability to transfer funds will be severely limited.

Public-Public Partnerships

Most states divide responsibility for highway construction and maintenance with local governmental units. As documented earlier, the experience with the Monongalia County user fee election demonstrates the inadequacies of the Local Powers Act (West Virginia Code §7-20-11 and 12), which limits the fee to one based on employee wages. Complicating the election was the perception among some voters that local funds raised might not guarantee matching state funds. In other states localities levy sales, property and/or income taxes to generate revenues for local road construction and maintenance, often matching state funds.

It may be time to enact a new public-public partnership that would allow localities to assume financing responsibilities for local roads that are not eligible for federal funding support. Among the local financing options could be sales, property and/or income tax options granted to local governmental units meeting certain criteria. Among the criteria might be the presence of a Metropolitan Planning Organization, which is an agency created by federal law to provide local input for transportation funding in urban areas. There are current seven MPOs in West Virginia that may be good candidates for additional funding options. In conjunction with this local option, a portion of the State Road Fund might be reserved for 'matching funds', thereby providing more incentives for local governmental units to enact local financing. Any unspent funds could accrue to the State Road Fund.

Concluding Observations

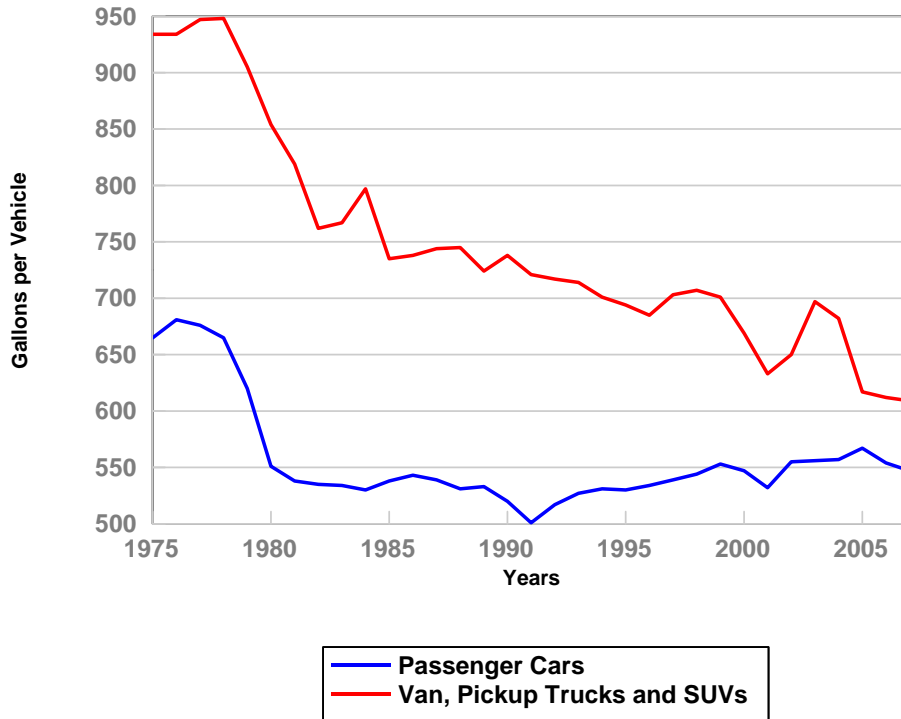
During the Great Depression West Virginia's highway system was consolidated from a county-based system to one organized and funded at the state level. For seventy-five years the West Virginia Department of Transportation has developed a modern highway network that has not only tied together the various regions within the state but has also linked the state with the rest of the nation. Travelers and businesses have come to expect a level of service, reliability, and convenience that is now threatened by the deterioration in parts of the system. While the federal-aid portion of the system may receive additional funding, either through stimulus or federal reauthorization, the local portion of the system will continue to deteriorate given the funding outlook.

With this in mind, now may be the time to convene key stakeholders to re-examine those aspects of the state highway system that should be the primary responsibility of the State and which parts should be reassigned, with financing options, to local governmental entities. As part of this effort, research should be commissioned to examine the operating structures of other state highway systems that are not as centralized as found in West Virginia.

Appendix A

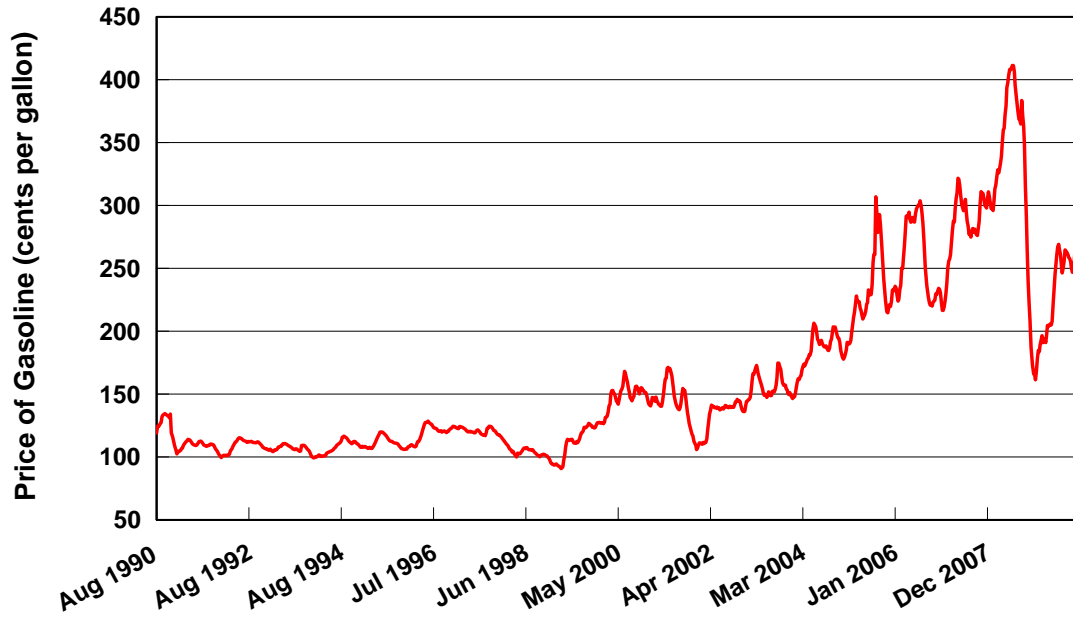
Figures

**Figure A-1 Changing Characteristics of U.S. Vehicles From 1975-2007:
Fuel Consumption (Gallons per Vehicle)**



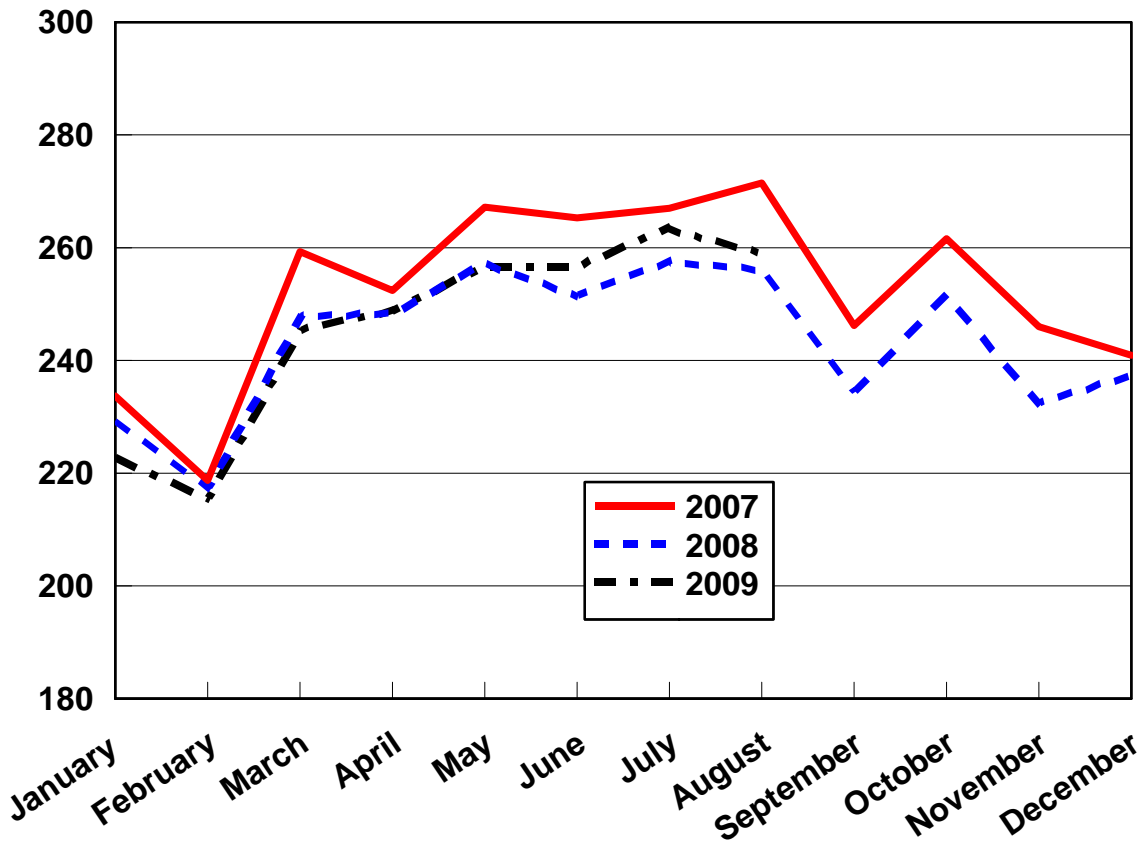
Source: Federal Highway Administration, *Highway Statistics 2008*.

Figure A-2 Weekly U.S. Regular Retail Gasoline Prices
(Cents per Gallon)



Source: U.S. Department of Energy, Energy Information Administration, www.eia.gov.

**Figure A-3 United States Vehicle Miles Traveled
2007-2009 (Billions)**



Source: Federal Highway Administration, *Highway Statistics 2008*.

Figure A-4 Percentage of West Virginia State Road Fund Tax Revenue per Source in Selected Fiscal Years 1970-2009

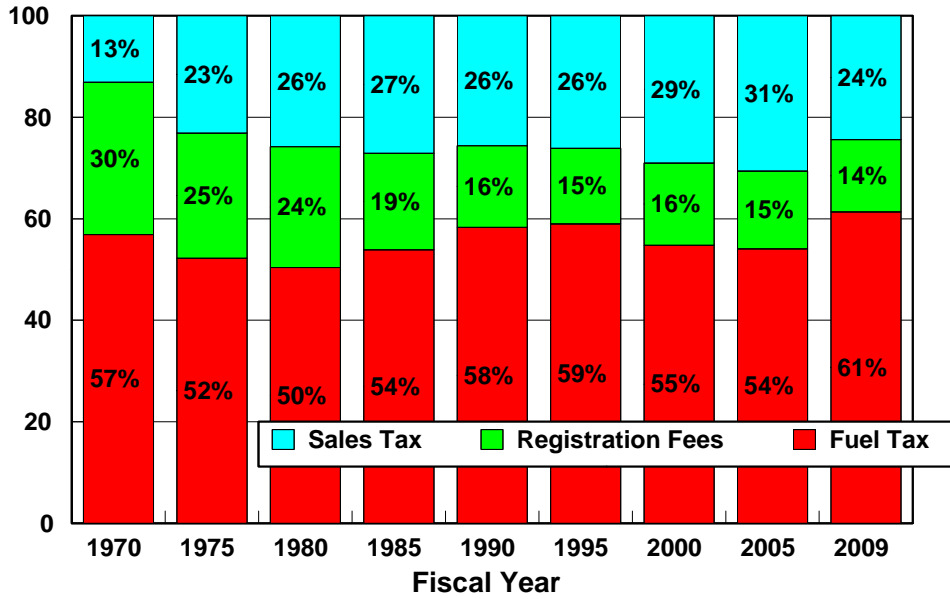
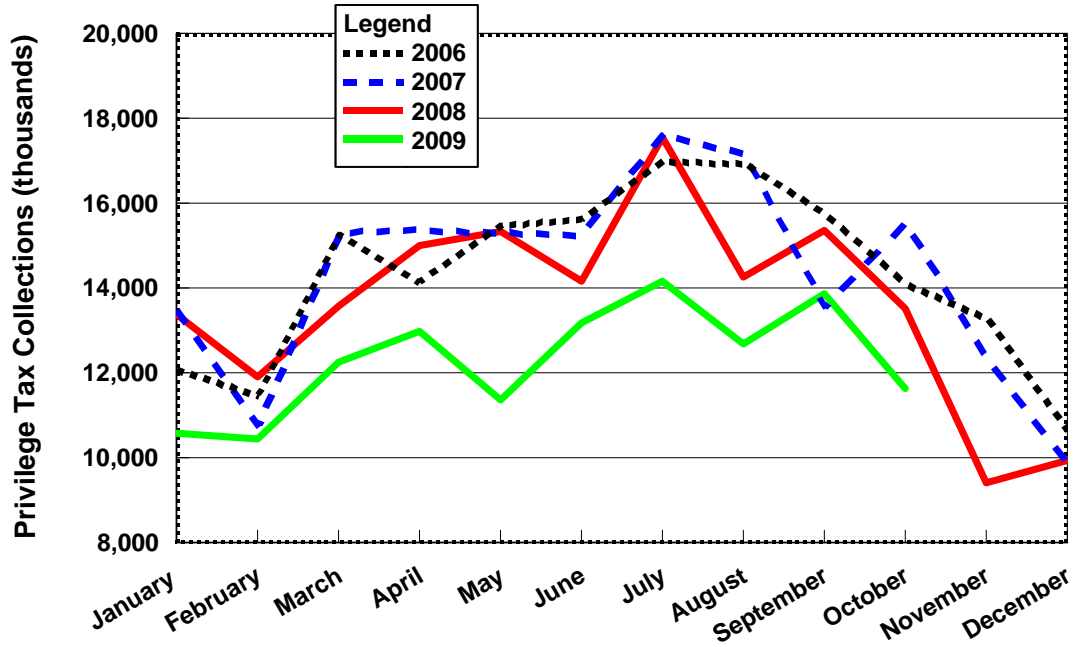
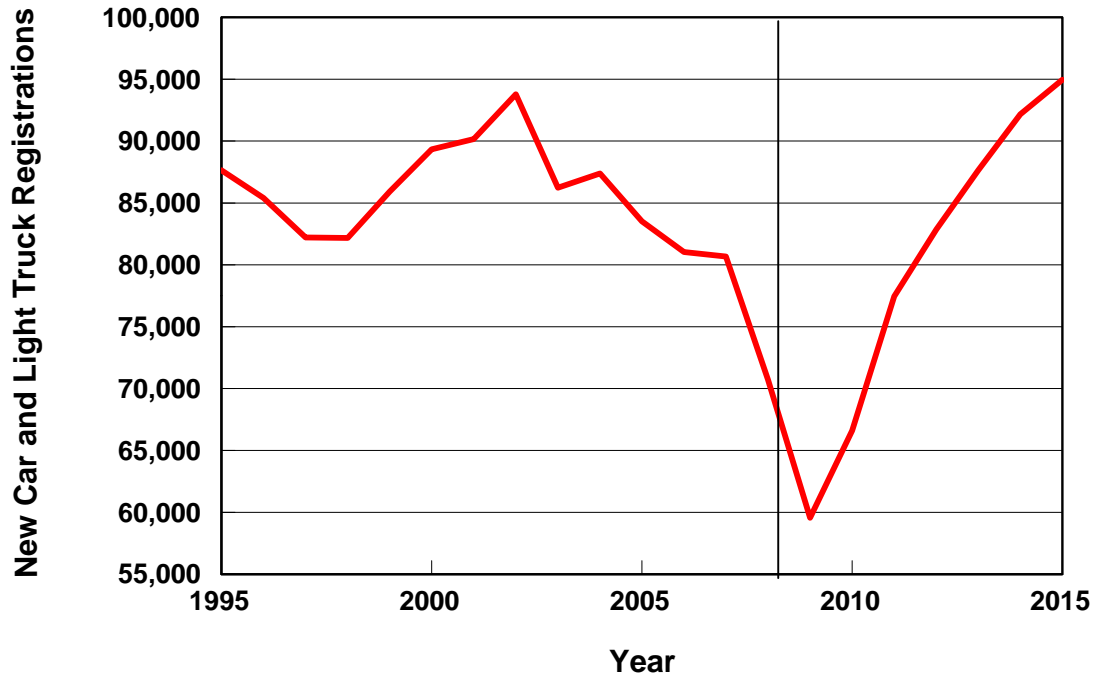


Figure A-5 Monthly Privilege Tax Collections: 2006-2009



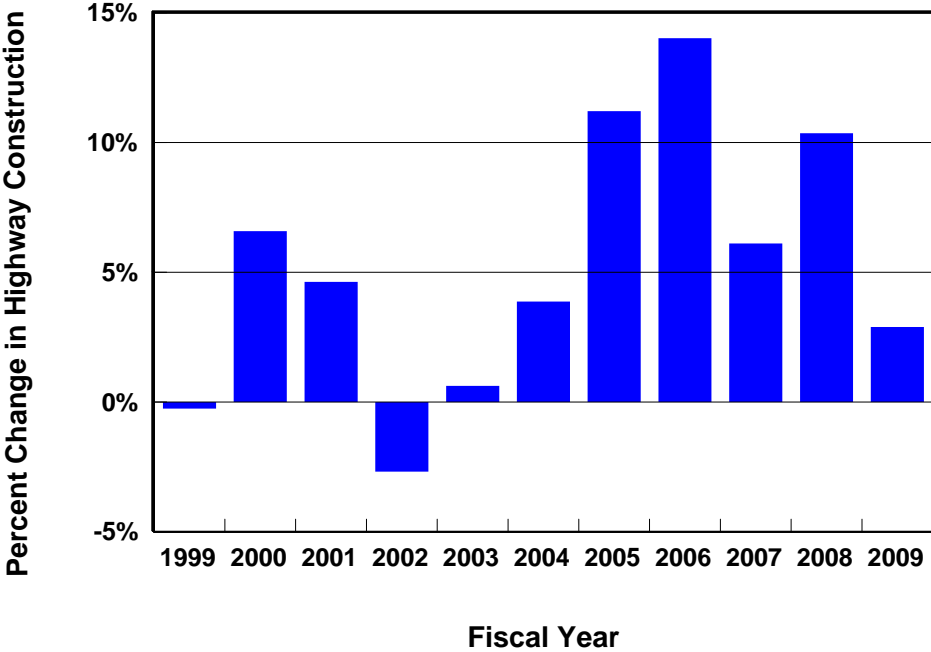
Source: West Virginia State Budget Office, www.budget.wv.gov.

Figure A-6 Actual and Forecasted New Car and Light Truck Registrations, West Virginia 1995-2015



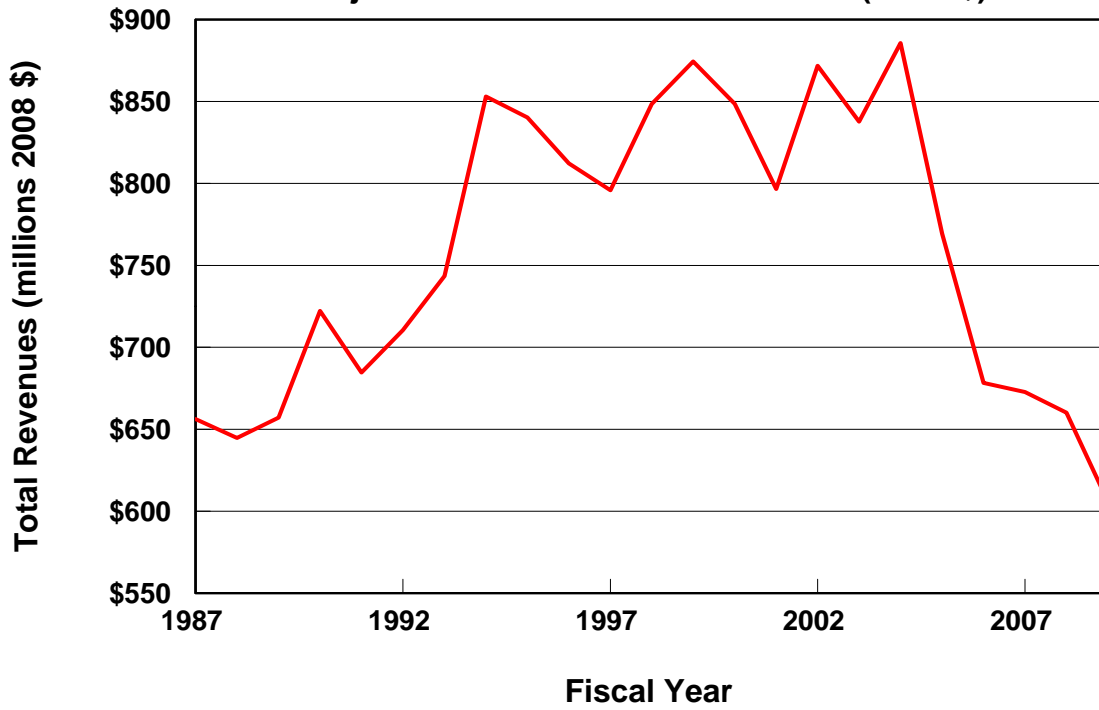
Source: IHS Global Insight Fall 2009 Forecast

**Figure A-7 Highway Construction Producer Price Index for Fiscal Years 1999-2009
(Annual Percent Change)**



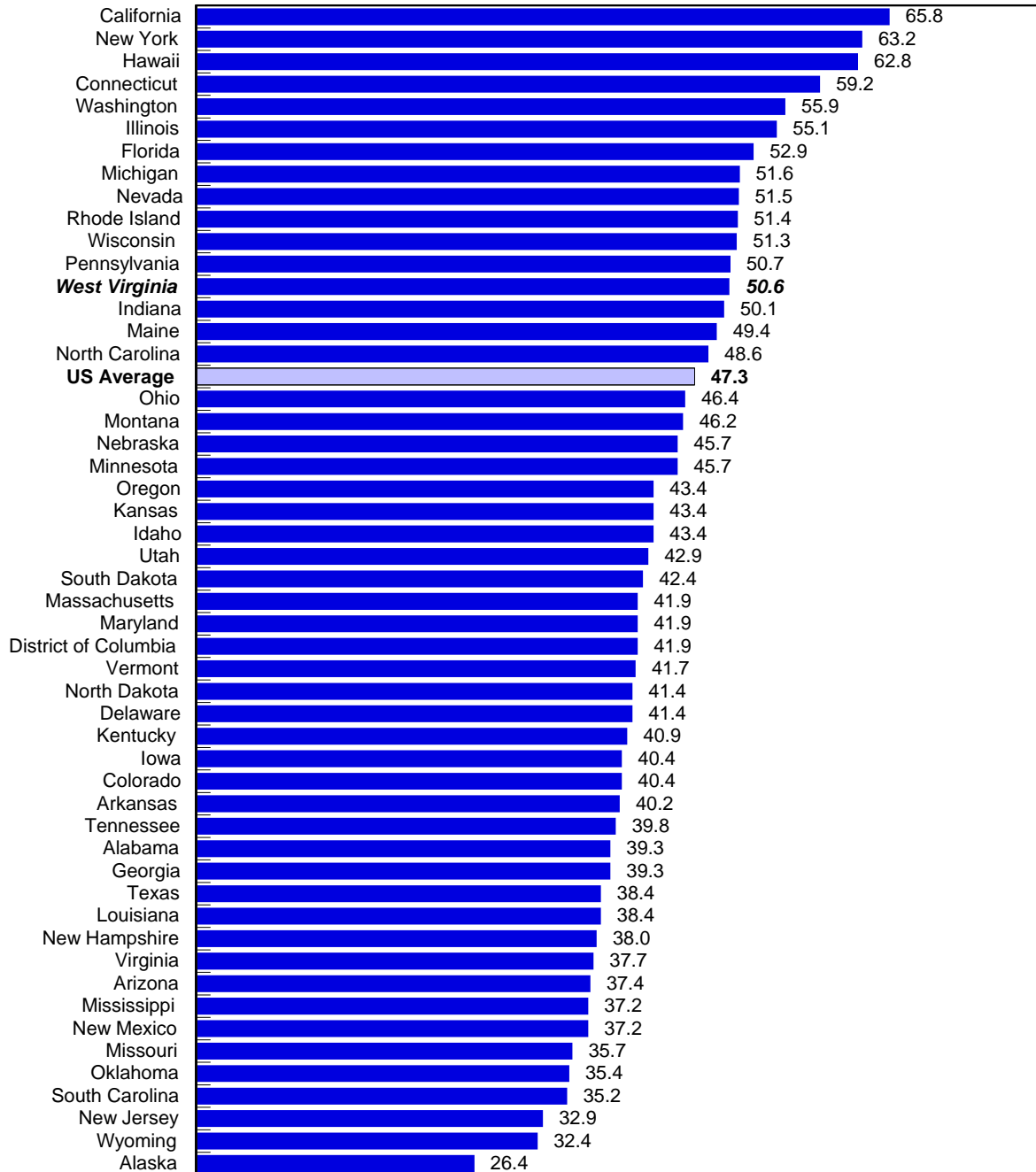
Source: U.S. Department of Labor, Bureau of Labor Statistics, www.bls.gov.

**Figure A-8 West Virginia State Road Fund Total Revenue
Inflation Adjusted for Fiscal Years 1987-2009 (2008 \$)**



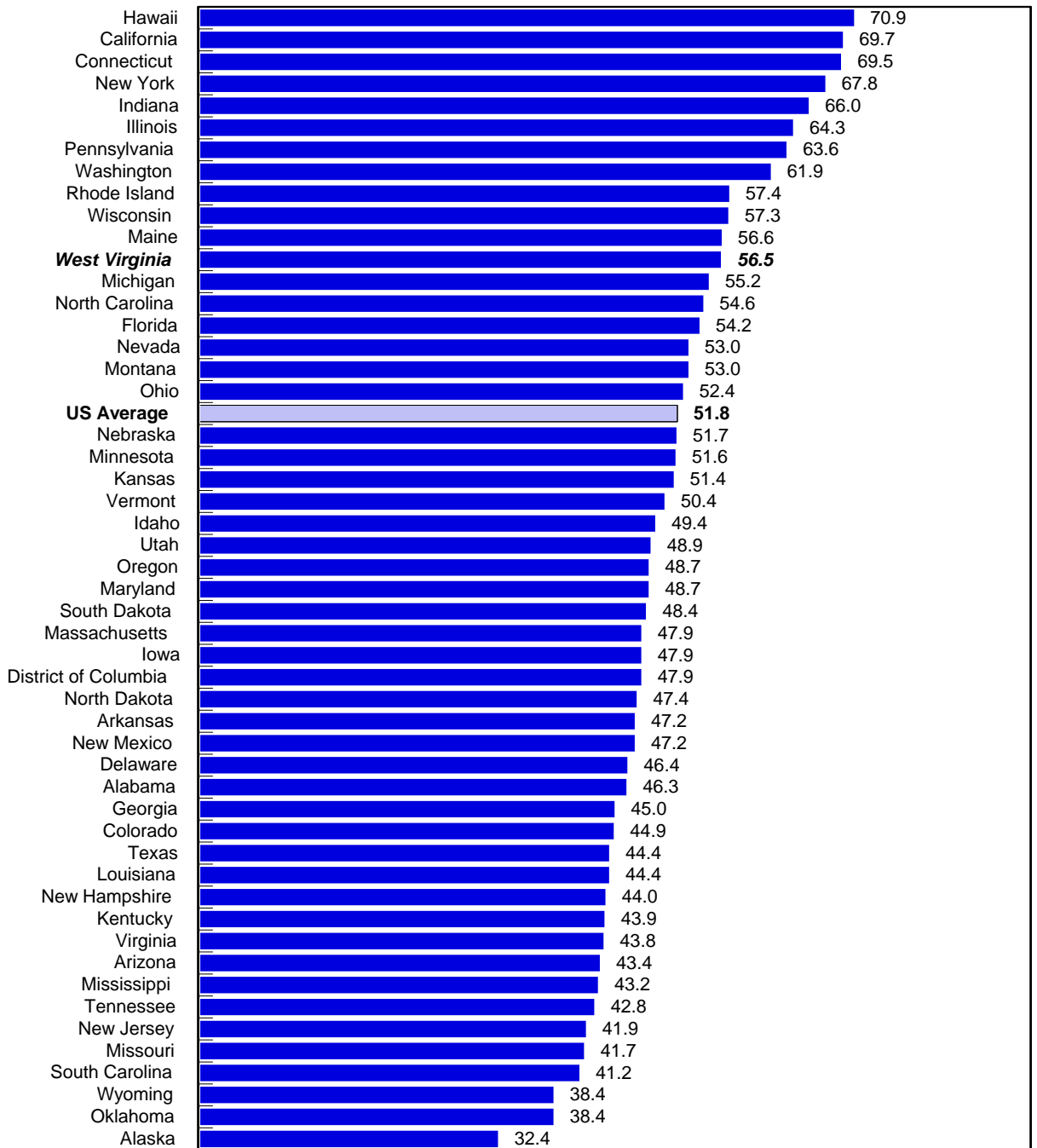
Author calculations using Highway Construction Producer Price Index

Figure A-9 Motor Gasoline Taxes as of October 2009
(includes Federal tax of 18.4 cpg)



Source: American Petroleum Institute, api.org

Figure A-10 Motor Diesel Taxes as of October 2009
(includes Federal tax of 24.4 cpg)



Source: American Petroleum Institute, api.org

Appendix B Tables

Table B-1
The Changing Characteristics of U.S. Vehicles Over the Years
Motor Vehicle Mileage, Fuel Consumption and Fuel Rates

| CY | Passenger Cars | | | Van, Pickup Trucks and SUV's | | | Trucks | | | All Motor Vehicles | | |
|------|--------------------------|----------------------------|---------------------------|------------------------------|----------------------------|---------------------------|--------------------------|----------------------------|---------------------------|--------------------------|----------------------------|---------------------------|
| | Mileage miles/vehicle | Fuel Use gallon/vehicle | Fuel Rate miles/gallon | Mileage miles/vehicle | Fuel Use gallon/vehicle | Fuel Rate miles/gallon | Mileage miles/vehicle | Fuel Use gallon/vehicle | Fuel Rate miles/gallon | Mileage miles/vehicle | Fuel Use gallon/vehicle | Fuel Rate miles/gallon |
| 1975 | 9,309 | 665 | 14.0 | 9,829 | 934 | 10.5 | 15,167 | 2,772 | 5.6 | 9,627 | 790 | 12.2 |
| 1976 | 9,418 | 681 | 13.8 | 10,127 | 934 | 10.8 | 15,438 | 2,764 | 5.6 | 9,774 | 800 | 12.1 |
| 1977 | 9,517 | 676 | 14.1 | 10,607 | 947 | 11.2 | 16,700 | 3,002 | 5.6 | 9,778 | 814 | 12.3 |
| 1978 | 9,500 | 665 | 14.3 | 10,968 | 948 | 11.6 | 18,045 | 3,263 | 5.5 | 10,077 | 816 | 12.4 |
| 1979 | 9,062 | 620 | 14.6 | 10,802 | 905 | 11.9 | 18,502 | 3,380 | 5.5 | 9,722 | 776 | 12.5 |
| 1980 | 8,813 | 551 | 16.0 | 10,437 | 854 | 12.2 | 18,736 | 3,447 | 5.4 | 9,458 | 712 | 13.3 |
| 1981 | 8,873 | 538 | 16.5 | 10,244 | 819 | 12.5 | 19,016 | 3,565 | 5.3 | 9,477 | 697 | 13.6 |
| 1982 | 9,050 | 535 | 16.9 | 10,276 | 762 | 13.5 | 19,931 | 3,647 | 5.5 | 9,644 | 686 | 14.1 |
| 1983 | 9,118 | 534 | 17.1 | 10,497 | 767 | 13.7 | 21,083 | 3,769 | 5.6 | 9,760 | 686 | 14.2 |
| 1984 | 9,248 | 530 | 17.4 | 11,151 | 797 | 14.0 | 22,550 | 3,967 | 5.7 | 10,017 | 691 | 14.5 |
| 1985 | 9,419 | 538 | 17.5 | 10,506 | 735 | 14.3 | 20,597 | 3,570 | 5.8 | 10,020 | 685 | 14.6 |
| 1986 | 9,464 | 543 | 17.4 | 10,764 | 738 | 14.6 | 22,143 | 3,821 | 5.8 | 10,143 | 692 | 14.7 |
| 1987 | 9,720 | 539 | 18.0 | 11,114 | 744 | 14.9 | 23,349 | 3,937 | 5.9 | 10,453 | 694 | 15.1 |
| 1988 | 9,972 | 531 | 18.8 | 11,465 | 745 | 15.4 | 22,485 | 3,736 | 6.0 | 10,721 | 688 | 15.6 |
| 1989 | 10,157 | 533 | 19.0 | 11,676 | 724 | 16.1 | 22,926 | 3,776 | 6.1 | 10,932 | 688 | 15.9 |
| 1990 | 10,504 | 520 | 20.2 | 11,902 | 738 | 16.1 | 23,603 | 3,953 | 6.0 | 11,107 | 677 | 16.4 |
| 1991 | 10,571 | 501 | 21.1 | 12,245 | 721 | 17.0 | 24,229 | 4,047 | 6.0 | 11,294 | 669 | 16.9 |
| 1992 | 10,857 | 517 | 21.0 | 12,381 | 717 | 17.3 | 25,373 | 4,210 | 6.0 | 11,558 | 683 | 16.9 |
| 1993 | 10,804 | 527 | 20.5 | 12,430 | 714 | 17.4 | 26,262 | 4,309 | 6.1 | 11,595 | 693 | 16.7 |
| 1994 | 10,992 | 531 | 20.7 | 12,156 | 701 | 17.3 | 25,838 | 4,202 | 6.1 | 11,683 | 698 | 16.7 |
| 1995 | 11,203 | 530 | 21.1 | 12,018 | 694 | 17.3 | 26,514 | 4,315 | 6.1 | 11,793 | 700 | 16.8 |
| 1996 | 11,330 | 534 | 21.2 | 11,811 | 685 | 17.2 | 26,092 | 4,221 | 6.2 | 11,813 | 700 | 16.9 |
| 1997 | 11,581 | 539 | 21.5 | 12,115 | 703 | 17.2 | 27,032 | 4,218 | 6.4 | 11,107 | 711 | 17.0 |
| 1998 | 11,754 | 544 | 21.6 | 12,173 | 707 | 17.2 | 25,397 | 4,135 | 6.1 | 12,211 | 721 | 16.9 |
| 1999 | 11,848 | 553 | 21.4 | 11,957 | 701 | 17.0 | 26,014 | 4,352 | 6.0 | 12,200 | 732 | 16.7 |
| 2000 | 11,976 | 547 | 21.9 | 11,672 | 669 | 17.4 | 25,617 | 4,391 | 5.8 | 12,164 | 720 | 16.9 |
| 2001 | 11,766 | 532 | 22.1 | 11,140 | 633 | 17.6 | 26,431 | 4,491 | 5.9 | 11,800 | 692 | 17.1 |
| 2002 | 12,202 | 555 | 22.0 | 11,364 | 650 | 17.5 | 27,071 | 4,642 | 5.8 | 12,171 | 719 | 16.9 |
| 2003 | 12,325 | 556 | 22.2 | 11,287 | 697 | 16.2 | 28,093 | 4,215 | 6.7 | 12,208 | 718 | 17.0 |
| 2004 | 12,497 | 557 | 22.4 | 11,044 | 682 | 16.2 | 27,719 | 4,157 | 6.7 | 12,190 | 715 | 17.1 |
| 2005 | 12,510 | 567 | 22.1 | 10,920 | 617 | 17.7 | 26,235 | 4,385 | 6.0 | 12,082 | 706 | 17.1 |
| 2006 | 12,485 | 554 | 22.5 | 10,986 | 612 | 17.8 | 25,231 | 4,270 | 5.9 | 11,910 | 692 | 17.2 |
| 2007 | 12,293 | 547 | 22.5 | 10,952 | 609 | 18.0 | 25,141 | 4,304 | 5.9 | 12,017 | 698 | 17.2 |

**Table B-2
West Virginia State Road Fund Tax Revenue Sources**

| FY | Gasoline Tax (thousands \$) | Wholesale Tax (thousands \$) | Registration Fees (thousands \$) | Privilege Tax (thousands \$) | Total Dedicated Tax Revenues (thousands \$) |
|-----------|--|---|---|---|--|
| 1972 | 66,265 | N/E | 28,157 | 24,239 | 118,661 |
| 1973 | 69,059 | N/E | 33,579 | 29,048 | 131,686 |
| 1974 | 72,850 | N/E | 30,718 | 28,049 | 131,617 |
| 1975 | 73,097 | N/E | 34,430 | 32,387 | 139,914 |
| 1976 | 81,858 | N/E | 36,884 | 41,572 | 160,314 |
| 1977 | 79,522 | N/E | 36,880 | 46,021 | 162,423 |
| 1978 | 84,333 | N/E | 39,556 | 53,085 | 176,974 |
| 1979 | 111,194 | N/E | 49,712 | 61,070 | 221,976 |
| 1980 | 102,802 | N/E | 48,484 | 52,699 | 203,985 |
| 1981 | 97,320 | N/E | 46,223 | 48,111 | 191,654 |
| 1982 | 99,284 | N/E | 51,097 | 54,539 | 204,920 |
| 1983 | 103,891 | 7,520 | 53,239 | 55,029 | 219,679 |
| 1984 | 101,834 | 54,759 | 53,026 | 67,770 | 277,389 |
| 1985 | 98,832 | 54,790 | 54,296 | 77,195 | 285,113 |
| 1986 | 99,586 | 54,835 | 55,113 | 81,604 | 291,138 |
| 1987 | 107,787 | 57,667 | 57,593 | 87,556 | 310,603 |
| 1988 | 110,279 | 62,902 | 55,779 | 87,678 | 316,638 |
| 1989 | 116,833 | 60,650 | 60,733 | 93,208 | 331,424 |
| 1990 | 157,830 | 60,131 | 60,807 | 94,911 | 373,679 |
| 1991 | 151,792 | 61,483 | 64,738 | 89,528 | 367,541 |
| 1992 | 155,540 | 60,754 | 67,396 | 90,166 | 373,856 |
| 1993 | 165,426 | 63,252 | 68,819 | 97,775 | 395,272 |
| 1994 | 214,858 | 63,152 | 70,413 | 111,925 | 460,348 |
| 1995 | 212,554 | 64,889 | 70,047 | 122,489 | 469,979 |
| 1996 | 206,363 | 64,234 | 76,418 | 120,450 | 467,465 |
| 1997 | 203,313 | 67,466 | 75,297 | 126,140 | 472,216 |
| 1998 | 221,726 | 68,073 | 81,543 | 133,712 | 505,054 |
| 1999 | 227,078 | 68,779 | 79,788 | 143,506 | 519,151 |
| 2000 | 224,256 | 69,671 | 87,483 | 155,598 | 537,008 |
| 2001 | 224,426 | 71,265 | 77,440 | 154,370 | 527,501 |
| 2002 | 230,141 | 73,230 | 85,929 | 172,472 | 561,772 |
| 2003 | 221,338 | 67,835 | 86,238 | 167,723 | 543,134 |
| 2004 | 272,398 | 36,920 | 83,146 | 177,000 | 596,464 |
| 2005 | 311,625 | N/E | 88,074 | 176,495 | 576,194 |
| 2006 | 320,757 | N/E | 86,976 | 171,479 | 579,212 |
| 2007 | 349,172 | N/E | 87,058 | 173,306 | 609,536 |
| 2008 | 404,223 | N/E | 86,396 | 169,463 | 660,082 |
| 2009 | 384,539 | N/E | 89,428 | 150,794 | 624,761 |

Source: West Virginia Department of Transportation, Division of Highways.
 1970 – 1981 digest of revenue sources in West Virginia (fiscal year 2002)
 1982 – 1987 analysis of receipts and expenditures (where all your tax dollars goes) produced yearly by the State Auditor's Office
 1988 – 1993 Office of State Auditor revenue as of 6/30/xx
 1994 -2005 State of West Virginia Financial Information Management System Revenues as of 6/30/xx (issued by State Auditor)
 Notes: There was not a Wholesale Tax prior to 1983
 N/E Non Existent
 * indicates partial year

Table B-3
Major West Virginia State Road Fund Tax Revenue Sources
Inflation Adjusted (2008 \$)

| FY | Gasoline Tax (thousands \$) | Wholesale Tax (thousands \$) | Registration Fees (thousands \$) | Privilege Tax (thousands \$) | Total Dedicated Tax Revenues (thousands \$) |
|-----------|--|---|---|---|--|
| 1987 | 227,738 | 121,842 | 121,686 | 184,993 | 656,259 |
| 1988 | 224,514 | 128,060 | 113,559 | 178,501 | 644,633 |
| 1989 | 231,621 | 120,238 | 120,403 | 184,785 | 657,047 |
| 1990 | 305,022 | 116,209 | 117,515 | 183,425 | 722,171 |
| 1991 | 282,722 | 114,516 | 120,579 | 166,752 | 684,569 |
| 1992 | 295,576 | 115,452 | 128,074 | 171,344 | 710,446 |
| 1993 | 311,173 | 118,980 | 129,451 | 183,919 | 743,522 |
| 1994 | 398,143 | 117,024 | 130,479 | 207,403 | 853,048 |
| 1995 | 380,031 | 116,017 | 125,239 | 219,002 | 840,289 |
| 1996 | 358,589 | 111,617 | 132,789 | 209,301 | 812,295 |
| 1997 | 342,633 | 113,697 | 126,894 | 212,577 | 795,801 |
| 1998 | 372,510 | 114,366 | 136,996 | 224,642 | 848,514 |
| 1999 | 382,451 | 115,840 | 134,381 | 241,697 | 874,369 |
| 2000 | 354,356 | 110,090 | 138,235 | 245,867 | 848,548 |
| 2001 | 338,941 | 107,628 | 116,954 | 233,138 | 796,662 |
| 2002 | 357,162 | 113,647 | 133,355 | 267,664 | 871,828 |
| 2003 | 341,383 | 104,626 | 133,010 | 258,690 | 837,709 |
| 2004 | 404,484 | 54,823 | 123,464 | 262,828 | 885,691 |
| 2005 | 416,104 | N/E | 117,603 | 235,669 | 769,375 |
| 2006 | 375,620 | N/E | 101,852 | 200,809 | 678,281 |
| 2007 | 385,350 | N/E | 96,078 | 191,262 | 672,691 |
| 2008 | 404,223 | N/E | 86,396 | 169,463 | 660,082 |
| 2009 | 372,746 | N/E | 86,686 | 146,170 | 605,602 |

Adjusted for changes in the producer price index of highway and street construction (2008=100)

Source: West Virginia Department of Transportation, Division of Highways and the United States Department of Labor: Bureau of Labor Statistics

**Table B-4
West Virginia Motor Fuel Taxes Paid per Vehicle Annually
by Motor Fuel Tax Rate and Fuel Efficiency**

| Annual Miles Driven | Year | WV Motor Fuel Tax Rate per Gallon | Miles per Gallon | | | | | | |
|---------------------|-----------|-----------------------------------|------------------|----------|----------|----------|----------|----------|---------|
| | | | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
| 10,000 | 2001 | 25.65 | \$256.50 | \$171.00 | \$128.25 | \$102.60 | \$85.50 | \$73.29 | \$64.13 |
| | 2002 | 25.35 | 253.50 | 169.00 | 126.75 | 101.40 | 84.50 | 72.43 | 63.38 |
| | 2005-2006 | 27.0 | 270.00 | 180.00 | 135.00 | 108.00 | 90.00 | 77.14 | 67.50 |
| | 2007 | 31.5 | 315.00 | 210.00 | 157.50 | 126.00 | 105.00 | 90.00 | 78.75 |
| | 2008-2012 | 32.2 | 322.00 | 214.67 | 161.00 | 128.80 | 107.33 | 92.00 | 80.50 |
| 12,000 | 2001 | 25.65 | \$307.80 | \$205.20 | \$153.90 | \$123.12 | \$102.60 | \$87.94 | \$76.95 |
| | 2002 | 25.35 | 304.20 | 202.80 | 152.10 | 121.68 | 101.40 | 86.91 | 76.05 |
| | 2005-2006 | 27.0 | 324.00 | 216.00 | 162.00 | 129.60 | 108.00 | 92.57 | 81.00 |
| | 2007 | 31.5 | 378.00 | 252.00 | 189.00 | 151.20 | 126.00 | 108.00 | 94.50 |
| | 2008-2012 | 32.2 | 386.40 | 257.60 | 193.20 | 154.56 | 128.80 | 110.40 | 96.60 |
| 14,000 | 2001 | 25.65 | \$359.10 | \$239.40 | \$179.55 | \$143.64 | \$119.70 | \$102.60 | \$89.78 |
| | 2002 | 25.35 | 354.90 | 236.60 | 177.45 | 141.96 | 118.30 | 101.40 | 88.73 |
| | 2005-2006 | 27.0 | 378.00 | 252.00 | 189.00 | 151.20 | 126.00 | 108.00 | 94.50 |
| | 2007 | 31.5 | 441.00 | 294.00 | 220.50 | 176.40 | 147.00 | 126.00 | 110.25 |
| | 2008-2012 | 32.2 | 450.80 | 300.53 | 225.40 | 180.32 | 150.27 | 128.80 | 112.70 |

