Report of the New Revenue Subcommittee

Part Two

POLICY BRIEFS

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TO THE

Blue Ribbon Committee on Highway Finance

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Policy Briefs Index

Adjustment Factors

Overview

In order to estimate revenue available to AHTD from various sources over the 2011 – 2020 decade, initial revenue projections must be adjusted for several factors that will influence returns over that period, specifically:

- Vehicle Miles Traveled Growth
- Fleet Fuel Efficiency Improvement
- Fuel Prices
- Construction Cost Increases
- Revenue Shared with Cities, Counties and Central Services Fund

Factor 1. Vehicle Miles Traveled (VMT)

The number of vehicle miles traveled per year is a critical determinant of any transportation budget. In Arkansas, motor fuel excise taxes account for 73% of total state roadway revenue. Generally, the more miles traveled the more fuel is used and the more revenue is generated from the motor fuel excise taxes.

In the past several years, VMT growth rates have flattened and even turned temporarily downward. AHTD projects a 1.7% annual VMT growth rate through 2020. That projection is consistent with the State Data Center's population growth projections for the next decade and will be used to project light duty fleet revenues from the gasoline excise tax.

For heavy trucks, the American Trucking Associations projected in 2007 that truckload volume would expand 2.5% per year from 2007-2012, and 2.3% per year from 2013-2018. Since the ATA forecast was done well in advance of the current recession, this analysis uses the more conservative estimates from the Energy Information Agency estimating 1.8% per year VMT growth for heavy trucks through 2020. Heavy truck VMT typically tracks very well with the state of the economy, but is typically not influenced by changes in fuel prices.

Factor 2. Fleet Fuel Efficiency

New Corporate Average Fuel Economy (CAFE) standards passed by the federal government have mandated changes in the fuel efficiency of light duty vehicles. The combined effect of the naturally occurring fleet turnover and the CAFE mandates means that drivers will be purchasing less fuel over time, thereby decreasing the amount of revenue generated by motor fuel excise taxes.

The Texas Department of Transportation and the Texas Transportation Institute, using the consulting firm Cambridge Systematics and others, recently completed a study and

model of Texas' highway and revenue needs through 2030. As part of that process, Cambridge Systematics estimated the increased light duty fleet fuel efficiency in Texas based on a low, average and high absorption rate of high efficiency vehicles (see below). The Texas light duty fleet profile is very similar to that of Arkansas.

Table 1
TTI Light Duty Fleet Fuel Efficiency Scenarios

	Low MPG Scenario		High MPG Scenario		Average MPG Scenario	
	Personal Vehicles	Commercial Vehicles	Personal Vehicles	Commercial Vehicles	Personal Vehicles	Commercial Vehicles
2011	22.1	6.1	22.5	6.1	22.3	6.1
2012	22.4	6.1	23.1	6.2	22.8	6.1
2013	22.8	6.1	23.8	6.2	23.3	6.2
2014	23.2	6.2	24.4	6.3	23.8	6.2
2015	23.5	6.2	25.2	6.3	24.3	6.3
2016	23.9	6.2	26.0	6.4	25.0	6.3
2017	24.3	6.2	26.9	6.5	25.6	6.3
2018	24.8	6.3	27.9	6.5	26.3	6.4
2019	25.2	6.3	29.0	6.6	27.1	6.5
2020	25.7	6.3	30.3	6.7	28.0	6.5

The Average Scenario has been used to project the light duty fleet fuel efficiency for the years 2011 through 2020.

The commercial fleet fuel efficiency is not projected to increase measurably over the study period based on the same TTI/Cambridge Systematics study. TTI estimates will be used for projecting diesel tax revenue.

Table 2
Fleet Fuel Efficiency 2011-2020 Under Average Scenario

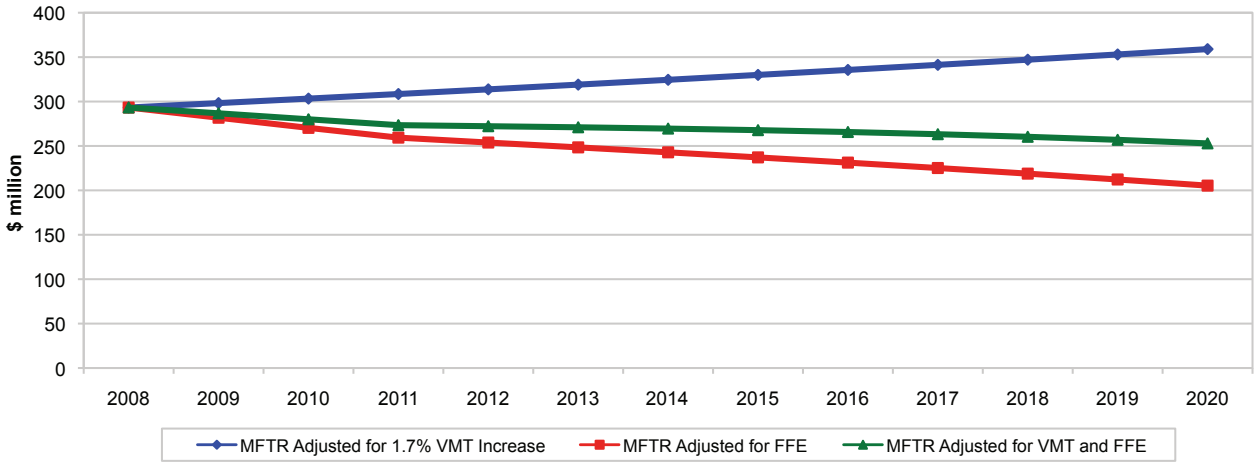
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Personal Vehicles	22.4	22.8	23.3	23.8	24.3	25.0	25.6	26.3	27.1	28.0
Commercial Vehicles	6.1	6.1	6.2	6.2	6.3	6.3	6.3	6.4	6.5	6.5

Net Growth Rate for Gasoline Excise Tax Revenue

For the light duty fleet (94% of which runs on gasoline), the projected increase in VMT, which would otherwise result in increased motor fuel use, is offset by the improvement in average fleet fuel efficiency, resulting in the use of less motor fuel. The net growth assumed for these policy briefs is reflected in Chart 1 (green/middle line).

Chart 1

Net Light Duty Fleet (Gasoline Tax) Growth Rate

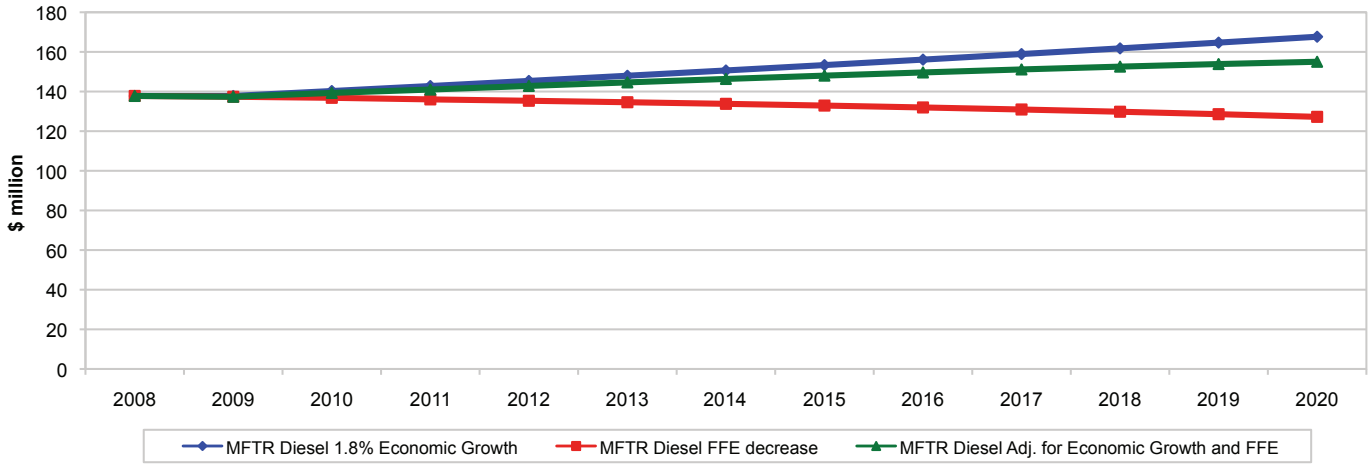


Net Growth Rate for Diesel Excise Tax Revenue

The scenario for the commercial truck fleet (predominantly fueled by diesel), shows a more upward trend because there is a low level of increase in fleet fuel efficiency, as shown in Chart 2 below.

Chart 2

Net Commercial Fleet (Diesel Tax) Growth Rate



Factor 3. Fuel Prices

Projections for Average Annual Gasoline and Diesel Prices were reviewed from Moody's and the Energy Information Administration (EIA). The projections differed slightly but followed the same trends. A decision was made to use Moody's data.

Table 3

Moody's Average Annual Pump Price Projections 2011-2020

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Gas $	3.56	3.77	3.78	3.82	3.88	3.95	4.01	4.08	4.15	4.23
Diesel $	3.72	3.95	3.95	3.98	4.05	4.12	4.19	4.26	4.34	4.44

The primary use for this data is in estimating the future revenue yield from the application of the sales tax to motor fuel purchases. The data above will be considered the retail price of fuel. The wholesale price used for revenue estimates of an excise tax on the wholesale price of fuel will subtract the federal and state gas taxes from the prices listed above.

Issues

As pointed out in the fleet fuel efficiency section, drivers respond to increased fuel prices by reducing their vehicle miles traveled in the short-term. Over the long run, consumers take steps to lower their fuel bills by buying more fuel efficient transportation and their mileage tends to rebound. This effect of VMT reductions in the face of higher prices and the rebound effect of driving sales of higher mileage cars have not been factored into this analysis in either VMT projections or the Average Fleet Fuel Efficiency Analysis at this time.

Factor 4. Construction Cost Inflation

Increases in construction costs are expected to erode the buying power of the current excise tax base. Analysis shows a very high correlation (.94) between the historic price of diesel #2 and the construction cost index. Therefore, the projected cost of diesel #2 from Moody's is used as the basis for forecasting the future construction cost index through 2020.

Factor 5. Revenue Shared with Cities, Counties & Central Services Fund

AHTD does not receive 100% of the state transportation revenues. Three percent (3%) is taken off the top for the Central Services Fund. Of the remainder, 15% of the revenue goes to cities, 15% goes to counties, and 70% goes to AHTD. Total transportation revenue should therefore be multiplied by a factor of .679 to determine the amount AHTD will receive. Initial revenue targets will be set for AHTD. Total revenue that must be raised in order to deliver that level of revenue to the Department will be calculated using the above factor.

Income Tax Dedicated to Transportation

Overview

The State of Arkansas levies an individual tax on the entire income of every resident, individual, trust or estate, as well as a corporate tax on the net income of every corporation organized under the laws of the State or every foreign corporation doing business in the State. These income taxes are paid annually to the State. Both the individual and corporate income taxes are mildly progressive with the rate increasing as income levels increase. The individual income tax increases from 1% to 7%, while the corporate income tax increases from 1% to 6.5%. The revenue from both taxes goes to the general fund.

At the federal level, a national income tax for transportation has been proposed, but has generally been rejected for some of the reasons outlined below. Governments at all levels in 2004 raised $129.5 billion for highway programs, 64% from user fees, 24% from general taxes, and 12% from earmarked transportation taxes. That same year, all governments raised an additional $38.6 billion for transit programs; of that 31% came from general taxes.

These numbers indicate that revenue from a general source like the income tax is not the preferred mechanism for transportation funding. Additionally, the numbers illustrate that if revenue from a general source is used for transportation purposes, it is frequently used for transit rather than roadway maintenance and construction (Rand Corporation). Major think tanks like the Rand Corporation and Brookings Institution recommend a reliance on user fees rather than general revenue to fund transportation. Nevertheless, a dedicated income tax has its advantages:

Administration

A general income tax increase dedicated to transportation will be administered through the existing income tax administration mechanisms.

Advantages

- It is elastic and responds well to inflation without legislative adjustment.
- It is progressive, taxing those with a higher ability to pay at a higher rate.

Disadvantages

- It is weak with regard to economic efficiency (it is inequitable) because it separates the users from the payers.
- The traditional recipients of general fund revenue have in the past strongly resisted using those revenues for transportation.
- The revenue potential is limited.

Revenue Potential

1% Increase in Individual Income Tax	$23.45 million per year
1% Increase in Corporate Income Tax	$ 3.18 million per year

Majority Required for Passage

A 75% supermajority of both houses is required to raise the income tax.

Sales Tax Options

Overview

The sales tax, also known as a gross receipts tax, is collected by the retailer from customers and is remitted by the retailer to the State. The base State rate is 6%. Currently, 4.5¢ of the 6¢ goes to the general fund; the other 1.5¢ is earmarked for the conservation tax (1/8¢), property tax relief (1/2¢), and educational adequacy (7/8¢). The sales tax is a commonly tapped source of revenue in Arkansas because only a simple majority is required to pass any increases.

Several sales tax options are possible:

- Removal of the sales tax exemption on motor fuels
- New excise tax on motor fuel wholesale price
- Transfer of existing sales tax from new and used vehicles, and auto parts and service, from the general fund
- General sales tax increase directed to transportation funding
- Special sales tax on new and used vehicle purchases
- Special sales tax on automotive parts and service

Removal of the sales tax exemption and a new excise tax on motor fuel price are dealt with in separate Policy Briefs. The transfer of existing sales tax revenues on auto-related items is dealt with by the Revenue Transfer Subcommittee. The last three are combined in this Brief.

General Sales Tax

A general sales tax has been proposed at the national level to fund transportation because a small percentage tax would raise significant revenue. However, the National Surface Transportation Infrastructure Financing Commission rejected it for a number of reasons that would also apply if the general sales tax were applied at the state level--see advantages/disadvantages below.

In many states where a general sales tax is dedicated to transportation, the money is channeled to public transportation. In states where the sales tax goes to highway construction, the money is frequently tied to specific projects (NCHRP 102) and often subject to sunset upon their completion.

Revenue Potential

Sales tax receipts will fluctuate with the level of economic activity. Table 4 shows the potential revenue from a 1% general sales tax dedicated to transportation, based on tentative projections from Legislative Research.

Table 4
Revenue from 1¢ General Sales Tax

Year	Combined Sales and Use Tax Revenues (million)	Revenue Generated Per Cent of Tax (million)	Net Amount to AHTD (.679) (million)
2009	$2,410	$536	$364
2010	$2,507	$557	$378
2011	$2,605	$579	$393
2012	$2,702	$600	$408
2013	$2,799	$622	$422
2014	$2,896	$644	$437
2015	$2,994	$665	$452
2016	$3,091	$687	$466
2017	$3,188	$708	$481
2018	$3,285	$730	$496
2019	$3,383	$752	$510
2020	$3,480	$773	$525

Majority Required for Passage
- Simple Majority

Advantages
- Potential to raise significant revenue
- Responsive to inflation

Disadvantages
- While responsive to inflation, the sales tax is also much more susceptible to economic volatility than motor fuel excise taxes.
- The sales tax is one of the most regressive taxes in its effect on lower income people, which is why the State recently reduced the sales tax on food to 3%.
- The general sales tax bears no direct relationship to transportation system use.

Sales Tax on New and Used Vehicle Purchases

A sales tax on vehicle purchases currently exists, bringing in $258 million to the general fund in FY2009. Tax collections were down 17% from 2008 to 2009. The Arkansas Automobile Association reports that sales were down 40% from 2008 to 2009. In this same time frame, the mix of cars sold has gone from 38% used cars to 42% used cars, so that if the trend continues, revenue to the state from this source will not rebound soon.

Revenue Potential

A special sales tax of 1% could be levied on new and used car purchases under the Streamlined Sales Tax Agreement. All of the revenue generated by the special sales tax could be dedicated to transportation purposes, unlike the general sales tax, and it could be phased-in.

Table 5

Revenue Potential from Special 1¢ Sales Tax on New/Used Vehicles

Year	% Used Cars Sold	Total State Collections	Revenue to Transportation per 1¢	Net Revenue to AHTD
FY 2007	38%	$312,056,367	$52,009,394	$35,314,379
FY 2008	40%	$310,301,049	$51,716,841	$35,115,735
FY 2009	42%	$258,480,859	$43,080,143	$29,251,417

Majority Required for Passage

- Simple Majority

Advantages

- Potential to raise significant revenue
- Responsive to inflation
- Related to transportation
- Can be phased-in in 1/4¢ increments

Disadvantages

- While responsive to inflation, the sales tax is also much more susceptible to economic volatility than motor fuel excise taxes.

The sales tax will increase the cost of new automobiles, which provides a disincentive for Arkansans to purchase more fuel efficient vehicles

Special Sales Tax on Automotive Parts and Service

The Streamlined Sales Tax Agreement prohibits a special sales tax on auto parts and services apart from the state's general sales tax.

Removal of Sales Exemption on Motor Fuels

Overview

A.C.A. Section 26-52-401 exempts gross receipts tax from the sale of gasoline or motor vehicle fuel from being collected under the Arkansas Gross Receipts Act of 1941. However, according to the National Conference of State Legislatures (NCSL), "at least" 9 states also levy a sales or gross receipts tax as a percent of the retail price. NCSL indicates that it is uncommon, though, for the proceeds from motor fuel sales taxes to be dedicated to transportation purposes.

Unlike the fuel excise tax, which is collected on a per gallon basis, a sales tax is collected as a percentage of the price of gasoline. The current state sales tax rate is 6%, but due to special earmarked taxes, only 4.5¢ on the dollar would be available for transportation use. Additional local sales taxes would apply that vary by jurisdiction.

The states using the sales tax on fuels vary on whether the tax is collected on the retail versus wholesale price. However, in Arkansas the gross receipts tax must be collected at the retail level and applied to the full pump price inclusive of federal and state excise taxes.

Phase in the Sales Tax on Motor Fuels

The Streamlined Sales Tax Agreement requires that the full state sales tax rate be levied immediately if the exemption is removed. City and county sales taxes must be levied immediately as well.

Effect on Pump Prices of Removing the Sales Tax Exemption on Gasoline

If the sales tax exemption on gasoline is removed, city and county sales taxes will be levied in addition to the state sales tax. City and county sales tax rates vary widely as shown by the examples below in Table 6.

Table 6
Sales Tax Rates for Selected Cities/Counties

County	Sales Tax (¢)	City	Sales Tax (¢)	Total
Chicot	3.000	Lake Village	2.0	5.000
Conway	1.750	Morrilton	1.0	2.750
Crawford	1.000	Mountainburg	2.5	3.500
Dallas	2.000	Fordyce	1.5	3.500
Hempstead	2.750	Hope	1.0	3.750
Pike	2.375	Murfreesboro	1.5	3.875
Saline	0.000	Bryant	3.0	3.000
Saline	0.000	Benton	1.5	1.500
White	1.500	Searcy	0.5	2.000

Table 7 shows the pump price of gasoline, the additional cents per gallon at the full 6% state sales tax added, and the additional cents per gallon paid at selected total city/county sales tax rates from Table 6. With the examples shown below, the total price paid will increase from 6-11% depending on the tax rate. In some cases where both the city and county have high sales taxes, the initial effect to the consumer may be rather dramatic.

Table 7
Pump Price of Gasoline, With Additional Cents Per Gallon at Various Sales Tax Rates

Pump Price of Gas	6% State Sales Tax (¢/gal)	State Tax + 2% Local Sales Tax (¢/gal)	State Tax + 3% Local Sales Tax (¢/gal)	State Tax + 3.5% Local Sales Tax (¢/gal)	State Tax + 3.75% Local Sales Tax (¢/gal)	State Tax + 5% Local Sales Tax (¢/gal)
$2.00	12	16.0	18.00	19.00	19.50	22.00
$2.25	14	18.5	20.75	21.88	22.44	25.25
$2.50	15	20.0	22.5	23.75	24.38	27.50
$2.75	17	22.5	25.25	26.63	27.31	30.75
$3.00	18	24.0	27.00	28.50	29.25	33.00
$3.25	20	26.5	29.75	31.38	32.19	36.25
$3.50	21	28.0	31.50	33.25	34.13	38.50
$3.75	23	30.5	34.25	36.13	37.06	41.75
$4.00	24	32.0	36.00	38.00	39.00	44.00

Advantages

- A sales tax on gas would be variable, typically (although not always) increasing with inflation to approximate rising construction costs
- A sales tax on motor fuels would generate substantial new revenue.

Disadvantages

- Administrative costs of collecting the tax at retail are unknown at this time.
- Compliance cost of motor fuel retailers could be substantial if new pump equipment is required.
- The disparity of local sales tax rates will cause price shopping between jurisdictions.
- Applying the gross receipts tax to the full pump price of motor fuel would be levying a tax on a tax
- Local sales taxes will be applied to the area specified in the ballot language under which they were approved. They may or may not be used for transportation purposes.
- For the first time, significant amounts of the price of motor fuel will be diverted to non-highway uses at both the state and local levels.

Revenue Potential

The revenue potential is significant. Table 8 at right indicates the projected return of the state sales tax applied to the pump price of gasoline. Table 9 indicates the projected return to AHTD of the sales tax applied to diesel fuel. Both tables assume a 4.5¢ sales tax available for transportation with 67.9% of that going to AHTD. The figures are adjusted for estimated light duty and commercial VMT and fleet fuel efficiencies. The revenues rise dramatically based on projected significant average annual pump prices. It should be noted that pump prices in these ranges may dampen VMT and/or increase the rapidity of the move to higher efficiency vehicles in the light duty fleet above the rates assumed in these tables.

Table 8
Gas Sales Tax Adjusted for Light Duty Fleet VMT and Fleet Fuel Efficiency

Year	Average Annual Pump Price[1]	Pump Price + 6% Sales Tax	Sales Tax to AHTD
2009	$2.33	$2.47	$94,827,044
2010	$2.93	$3.11	$116,584,886
2011	$3.56	$3.78	$138,410,804
2012	$3.77	$4.00	$145,941,084
2013	$3.78	$4.01	$145,618,600
2014	$3.82	$4.05	$146,253,353
2015	$3.88	$4.11	$147,701,211
2016	$3.95	$4.18	$149,028,164
2017	$4.01	$4.25	$150,157,906
2018	$4.08	$4.33	$151,063,713
2019	$4.15	$4.40	$151,683,390
2020	$4.23	$4.48	$151,900,606
Totals 2011-2020			**$1,477,758,832**

Table 9
Diesel Sales Tax Adjusted for Commercial VMT and Fleet Fuel Efficiency

Year	Average Annual Pump Price[1]	Pump Price + 6% Sales Tax	Sales Tax to AHTD
2009	$2.40	$2.54	$48,370,890
2010	$3.03	$3.21	$62,181,154
2011	$3.72	$3.94	$76,249,001
2012	$3.95	$4.19	$81,067,557
2013	$3.95	$4.19	$80,942,403
2014	$3,98	$4.22	$81,511,976
2015	$4.05	$4.29	$82,850,378
2016	$4.12	$4.36	$84,245,195
2017	$4.19	$4.44	$85,668,620
2018	$4.26	$4.52	$87,133,562
2019	$4.34	$4.60	$88,639,140
2020	$4.44	$4.71	$90,613,058
Totals 2011-2020			**$838,911,890**

[1] *Fuel price estimates by Moody's based on national averages.*

Excise Tax on the Wholesale Price of Motor Fuel

Overview

An excise tax is a tax on consumption or use of certain products. An excise tax in Arkansas has typically been a "unit" tax, which is expressed as a given amount per unit of the product. Some states that have applied a "sales tax" to motor fuels have done so at the wholesale level rather than at the point of sale to the consumer. Under Arkansas law, a gross receipts tax must be applied at the retail level. If applied at the wholesale level, such a tax would be considered an excise tax on the wholesale price of motor fuel.

Administration

The same mechanism for administering the existing excise tax can be used to administer a new excise tax on the wholesale price. For diesel sales to interstate truckers, the rate will have to be translated into a cents-per-gallon rate that could be changed no more often than quarterly in order to fall under the International Fuel Tax Agreement (IFTA). The mechanism for doing so can be borrowed from other states that administer their sales tax on motor fuels at the wholesale level.

Majority Required for Passage

Because the tax is to be levied by the wholesaler on the retailer of motor fuel, the excise tax on wholesale price will require a 3/4 vote for adoption based on Arkansas case law.

Advantages

- Like a sales tax, this excise tax is elastic and will increase revenue in conjunction with construction cost increases
- It will allow all revenues to go straight to transportation without diversions, keeping the user fee concept intact
- It can be implemented incrementally, as it does not fall under the provisions of the Streamlined Sales Tax Agreement
- A uniform statewide tax removes the locational problems of widely varied local sales taxes

Revenue Potential

The revenue potential for this new excise tax is substantial and mirrors that of removing the sales tax exemption from motor fuels. Table 10 below indicates the projected return of the excise tax on wholesale price applied to the projected wholesale price of gasoline. Table 11 indicates the projected return to AHTD of the excise tax applied to diesel fuel. Both tables assume a 6% excise tax rate to mimic the full state sales tax rate. AHTD would receive 67.9% of that. Wholesale price was estimated using Moody's projected Average Annual Pump Prices and subtracting the appropriate federal and

Arkansas motor fuel excise taxes. *Revenue potential will vary significantly depending upon the tax rate and how fast the tax is phased in.*

The figures are adjusted for estimated light duty and commercial VMT and fleet fuel efficiencies. The revenues rise dramatically based on projected significant increases in average annual pump prices. It should be noted that pump prices in these ranges may dampen VMT and/or increase the rapidity of the move to higher efficiency vehicles in the light duty fleet above the rates assumed in these tables.

Table 10

Excise Tax Levied on Wholesale Price of Gasoline Adjusted for Light Duty Vehicle VMT and Fleet Fuel Efficiency

Year	Average Annual Pump Price	Average Annual Wholesale Price/ Gal	Pump Price w/ 6% Excise Tax	Wholesale Price Excise Tax To AHTD
2009	$2.33	$1.93	$2.44	$104,647,044
2010	$2.93	$2.53	$3.08	$134,168,463
2011	$3.56	$3.16	$3.75	$163,772,453
2012	$3.77	$3.37	$3.97	$173,903,163
2013	$3.78	$3.38	$3.98	$173,564,748
2014	$3.82	$3.42	$4.02	$174,522,310
2015	$3.88	$3.48	$4.09	$176,586,340
2016	$3.95	$3.55	$4.16	$178,514,589
2017	$4.01	$3.61	$4.23	$180,208,940
2018	$4.08	$3.68	$4.30	$181,638,025
2019	$4.15	$3.75	$4.38	$182,723,976
2020	$4.23	$3.83	$4.46	$183,317,742
Totals 2011-2020				**$1,768,752,287**

Table 11

Excise Tax Levied on Wholesale Price of Diesel Fuel Adjusted for Commercial Vehicle VMT and Fleet Fuel Efficiency

	Avg Annual Pump Price	Avg Annual Wholesale Price/ Gal	Pump Price w/ 6% Excise Tax	Wholesale Price Excise Tax To AHTD
2009	$2.40	$1.93	$2.51	$38,863,049
2010	$3.03	$2.56	$3.18	$52,509,306
2011	$3.72	$3.25	$3.92	$66,596,191
2012	$3.95	$3.48	$4.16	$71,407,379
2013	$3.95	$3.48	$4.16	$71,286,389
2014	$3.98	$3.51	$4.19	$71,860,617
2015	$4.05	$3.57	$4.26	$73,204,230
2016	$4.12	$3.65	$4.33	$74,604,892
2017	$4.19	$3.72	$4.41	$76,034,888
2018	$4.26	$3.79	$4.49	$77,507,238
2019	$4.34	$3.87	$4.57	$79,012,188
2020	$4.44	$3.97	$4.68	$81,004,601
Total 2011-20				**$742,518,614**

Gasoline and Diesel Excise Tax

Overview

The gasoline and diesel excise tax are the traditional way of funding highways. Arkansas first levied a gasoline excise tax in 1921 and the diesel tax in 1941. These motor fuels excise taxes were particularly productive during the years after 1950 as more and more Americans bought automobiles, women entered the workforce in far greater numbers and suburban development made driving farther a necessity.

Now, however, the average licensed driver in American owns 1.1 automobiles. The market is saturated and revenue growth from this source comes from population growth, increases in international trade and shipping (diesel tax revenue), increases in per capita vehicle miles traveled (VMT) and tax rate increases.

The motor fuel excise taxes are levied in cents per unit of volume and are collected at the wholesale level. As such, the revenue does not vary with the price of motor fuel, although demand for fuel is dampened during price spikes causing a reduction in revenue from this source. Revenue is also negatively impacted by increases in federal Combined Average Fleet Efficiency (CAFÉ) standards.

Diesel tax revenue is also subject to revenue transfers from other states and Canadian provinces under the International Fuel Tax Agreement (IFTA). IFTA provides that interstate trucking companies log the miles traveled in each state and the fuel purchased in each state and report the results quarterly to IFTA, which nets out the proportionate fuel taxes due each participating state/province and transfers the revenue accordingly. As a "bridge" state, Arkansas is nearly always a recipient of IFTA transfers.

The current gasoline excise tax is 21.5¢ per gallon last raised in 2001. The current diesel excise tax is 22.5¢ per gallon last raised in 2001.

Revenue Potential of Motor Fuel Excise Taxes

AHTD has calculated that a 1¢ increase in gasoline excise tax will generate approximately $14.11 million per year (net $9.58 million to AHTD). The estimate for a 1¢ per gallon increase in diesel tax is $6.63 million per year (net $4.5 million to AHTD).

The following tables show the revenue potential for various gasoline and diesel tax rates between 2011 and 2020 adjusted for projected VMT and Fleet Fuel Efficiency for both the light duty fleet and the commercial truck fleet.

Table 12

Gasoline Tax Revenue Projections in Millions $/Yr at Various Tax Rates

Year	Revenue at 21.5¢ per gallon	Revenue to AHTD	Revenue at 24.5¢ per gallon	Revenue to AHTD	Revenue at 26.5¢ per gallon	Revenue to AHTD	Revenue at 31.5¢ per gallon	Revenue to AHTD
2011	273	186	312	212	337	229	401	272
2012	272	185	310	211	336	228	399	271
2013	271	184	309	210	334	227	397	270
2014	270	183	307	209	332	226	395	268
2015	268	182	305	207	330	224	392	266
2016	266	180	303	206	327	222	389	264
2017	263	179	300	204	324	220	386	262
2018	260	177	297	201	321	218	381	259
2019	257	174	293	199	317	215	376	256
2020	253	172	288	196	312	212	371	252

Table 13

Diesel Tax Revenue Projections in Millions $/Yr at Various Tax Rates

Year	Revenue at 22.5¢ per gallon	Revenue to AHTD	Revenue at 25.5¢ per gallon	Revenue to AHTD	Revenue at 27.5¢ per gallon	Revenue to AHTD	Revenue at 32.5¢ per gallon	Revenue to AHTD
2011	141	96	160	108	172	117	204	138
2012	143	97	162	110	174	118	206	140
2013	145	98	164	111	177	120	209	142
2014	146	99	166	113	179	121	211	143
2015	148	100	168	114	181	123	214	145
2016	150	102	169	115	183	124	216	147
2017	151	103	171	116	185	125	218	148
2018	152	104	173	117	186	127	220	150
2019	154	104	174	118	188	128	222	151
2020	155	105	176	119	189	129	224	152

Majority Needed for Passage

A 75% majority of both chambers is required to raise the gasoline or diesel excise tax.

Advantages

- The gasoline and diesel excise taxes are a user fee and are the traditional way of funding roadway improvements. It is consistent with the user pay principle that has been the foundation of America's highway system.
- Administrative costs are low.

Disadvantages

- The motor fuel excise taxes are inelastic, therefore their purchasing power will decrease over time.
- Construction costs are projected to rise more rapidly than in the past two decades, eroding purchasing power more quickly.
- New federal fuel efficiency standards will reduce the productivity of the gasoline excise tax at an increasing rate as the next decade progresses.
- As alternative fuel vehicles, particularly plug-in hybrids and electric vehicles become more prevalent, motor fuel excise taxes will be unable to fairly capture the costs of these vehicles to the road network.
- Diesel fuel taxes may not be set at a rate that fairly captures the costs of heavy trucks to the road system

Indexing Fuel Tax Rates

Overview

Fuel taxes are an attractive source of revenue because of their low administrative and compliance costs, ability to generate substantial amounts of revenue, relative stability and predictability, and ease of implementation. The major flaw of fuel taxes is that they are not elastic and do not keep up with increasing construction costs since they are typically levied solely on a per gallon basis.

In order to make fuel taxes more responsive to construction costs, seventeen states have adopted a variable rate fuel tax structure since 1970. Currently, only seven states (FL, IA, KY, ME, NE, NC, WI) are utilizing variable rate fuel taxes.

Chart 3

Comparison of Indexed Gasoline Tax vs. Actual 1985-2008

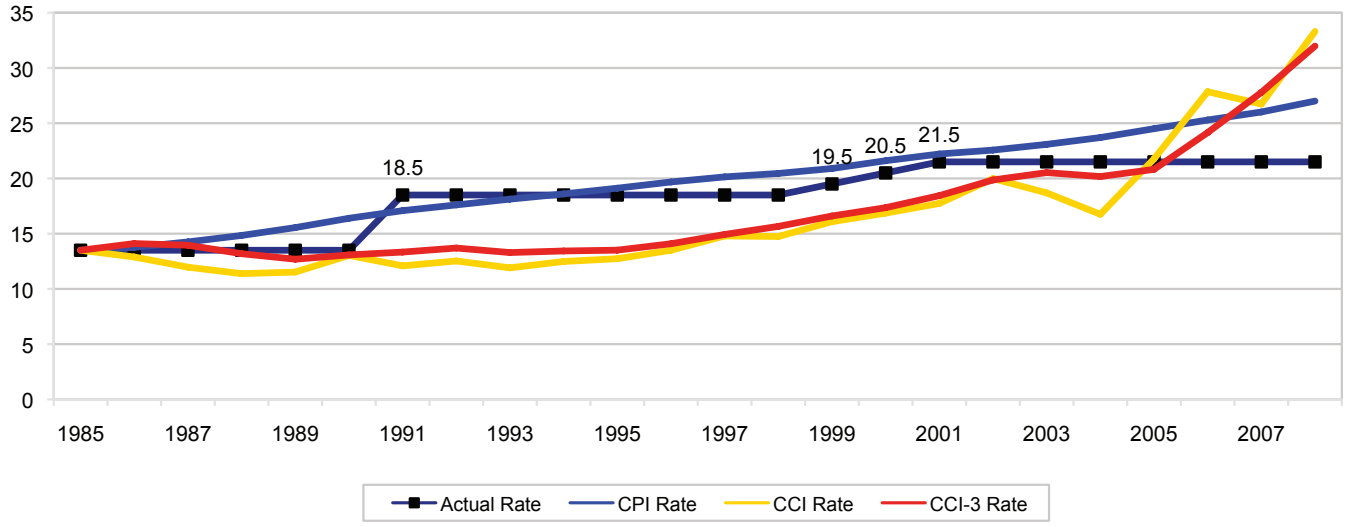


Chart 3 shows how the Arkansas gas tax rate would have changed if it had been indexed from 1985-2008. The actual tax rate from 1985 to 2008 is shown in black. The indexed rate is pegged to (a) the Consumer Price Index (CPI) in blue, (b) the Construction Cost Index (CCI) in gold and (c) the CCI shown as a 3 year trailing average (CCI-3) to smooth its natural volatility (red). This Chart assumes that annual indexing is done automatically beginning with the 1983 base year rate. The CPI, which gives the most consistent approximation of the impacts of general inflation, exceeds the nominal rate and the CCI based rates until approximately 2004 when oil and materials prices spiked, driving the once fairly stable CCI dramatically higher.

Advantages/Disadvantages

Automatically indexing fuel taxes to the correct measure allows revenue to keep up with construction costs without the continual need for legislative involvement, functioning much as a cost of living adjustment would.

Alternatives

Three indexes are offered as means by which to adjust the fuel taxes:

1. **Consumer Price Index (CPI)** – The Consumer Price Index is a commonly known measure of inflation and is generally accepted by the public for automatic adjustments in things such as cost of living adjustments. It most closely mimics the public's ability to pay, but in a decade of projected rising fuel prices and construction costs, may not accurately maintain the purchasing power of motor fuel taxes.
2. **Construction Cost Index (CCI)** – The Construction Cost Index is specific to inflation in actual construction costs for Arkansas highways. Over the years it has underperformed the CPI and nominal rate increases until 2004, at which time the CCI shot up above both. The CCI is volatile (moves up or down sharply at times) and is strongly correlated with the price curve of #2 diesel fuel.
3. **Construction Price Index 3 Year Trailing Average (CCI-3)** – A three year trailing average smoothes the volatility of the CCI. Because this index is calculated in arrears, it buffers the public from sharp increases caused by international events and price bubbles.

Table 14 at right shows what the gasoline tax rate would be in 2008 if it had been adjusted by the various indexes since 1985.

Table 14

Annual Gas Tax Rates Indexed by the CPI, CCI, CCI-3 1985-2008

	Actual Rate	CPI Rate	CCI Rate	CCI-3 Rate
1985	13.5	13.5	13.5	13.5
1986		13.8	12.9	14.1
1987		14.3	12.0	14.0
1988		14.8	11.4	13.2
1989		15.6	11.5	12.7
1990		16.4	13.0	13.1
1991	18.5	17.1	12.1	13.3
1992		17.6	12.5	13.7
1993		18.1	11.9	13.3
1994		18.6	12.5	13.4
1995		19.1	12.7	13.5
1996		19.7	13.5	14.1
1997		20.1	14.8	14.9
1998		20.5	14.7	15.7
1999	19.5	20.9	16.1	16.6
2000	20.5	21.6	16.9	17.4
2001	21.5	22.2	17.7	18.4
2002		22.6	20.0	19.9
2003		23.1	18.7	20.5
2004		23.7	16.8	20.2
2005		24.5	21.8	20.8
2006		25.3	27.8	24.2
2007		26.0	26.7	27.8
2008		27.0	33.3	32.0

Tax Rate - Base Year, Floor, Ceiling

Base Year - When beginning the process of indexing, it is important that the base year rate is set at an appropriate level. Table 15 shows the fuel tax rates 2011-2020 when the current 21.5¢ gasoline tax and 22.5¢ diesel tax are indexed starting in 2005 when highway construction costs began to soar (Option 1) versus starting in 2011 (Option 2).

The preliminary analysis looked at 1985, 2001, 2005 and 2010 as potential base years from which to begin indexing. The first three – 1985, 2001 and 2005 generated similar results. 2005 was chosen to simplify presentation of the comparison.

Table 15

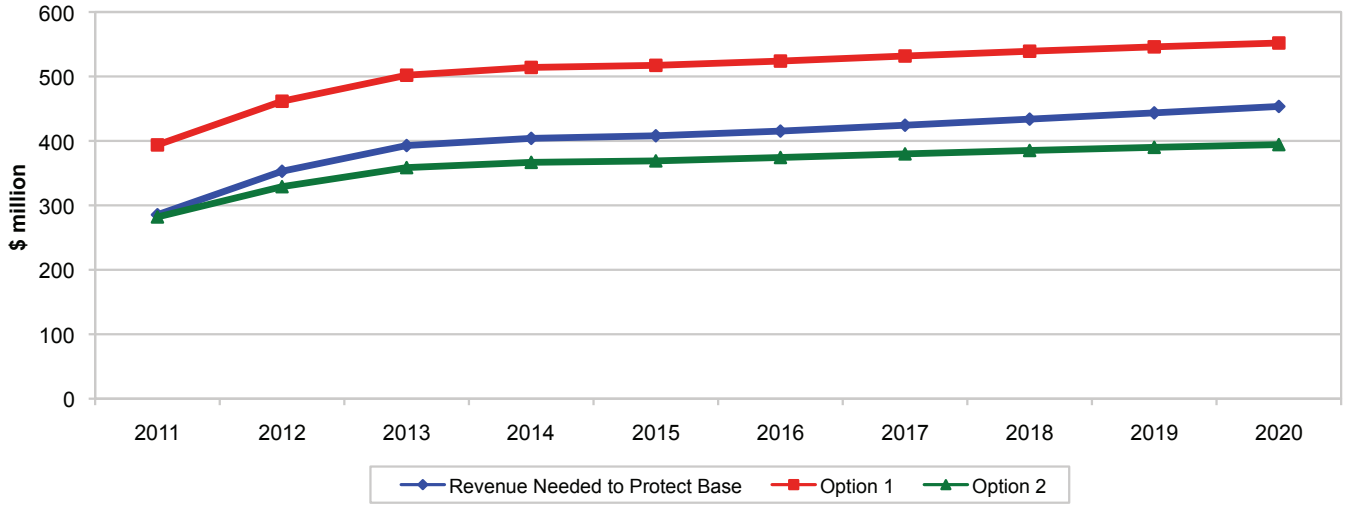
Comparison of Gas Tax Rates Indexed from Base Year 2005 (Option 1) and Base Year 2010 (Option 2)

	Option 1 – 2005 Base Year					Option 2 – 2010 Base Year				
	Gas Tax	Diesel Tax	Gas Revenue to AHTD	Diesel Revenue to AHTD	Total Revenue to AHTD	Gas Tax	Diesel Tax	Gas Revenue to AHTD	Diesel Revenue to AHTD	Total Revenue to AHTD
2011	30.1	31.5	260	134	394	21.5	22.5	186	96	282
2012	35.2	36.9	303	159	462	25.2	26.3	216	113	329
2013	38.2	40.0	327	175	502	27.3	28.6	234	125	359
2014	39.1	40.9	333	181	514	27.9	29.2	238	129	367
2015	39.4	41.2	333	184	517	28.1	29.5	238	131	369
2016	39.9	41.8	335	189	524	28.5	29.9	239	135	374
2017	40.6	42.5	338	194	532	29.0	30.4	241	139	380
2018	41.4	43.3	340	199	539	29.5	30.9	243	142	385
2019	42.1	44.1	342	204	546	30.1	31.5	244	146	390
2020	42.9	44.8	342	210	552	30.6	32.0	244	150	394

Chart 4 shows how well the base revenue from the motor fuels tax is protected under these two options, thereby underscoring the importance of choosing the correct year from which to index. The main difference in the options is that Option 1 restores purchasing power lost since 2005, while Option 2 begins with the purchasing power in 2010.

Chart 4

Comparison of Revenue from Fuel Taxes Indexed Under Options 1 and Option 2 (2011-2020)



Annual Floor or Ceiling – Some states set a floor on the fuel tax adjustment to keep it from dropping should the index decline. Declining fuel tax revenues would make the multi-year planning and development of a highway program much more difficult.

Because of the unpopularity of the gas tax, some states set a ceiling on how much the tax rates can change in a single year. Ceilings, if routinely imposed, can undermine the advantage of automatic indexing. Over the past twenty-five years, the CPI would have resulted in tax rate increases of as much as 1¢ per gallon in a single year only once, in 2008. A close examination of Table 1 reveals modest year to year changes projected through 2020 regardless of the index chosen.

Legislative Action

The General Assembly will need to adopt excise tax indexing by a 75% majority vote initially. However, future increases can be:

1. **Automatic** – Adjustments to the tax rate could be made automatically by the Department of Finance and Administration (DFA) at the beginning of each calendar year.
2. **Automatic with Legislative Review** - Annual adjustments to the chosen index made by DFA in January of each year. The increases become effective automatically unless overridden or modified by action of the General Assembly by a specified date certain each year.
3. **Annual Recommendations Requiring Legislative Action to Implement** -- Annual adjustments to the excise taxes based on the chosen index are recommended by DFA to the General Assembly in January of each year. The General Assembly must approve any rate increase by a 75% majority to implement.

Administration

The excise tax is administered in the same fashion as is currently done except for the automatic adjustment mechanism.

Vehicle Miles Traveled Fee

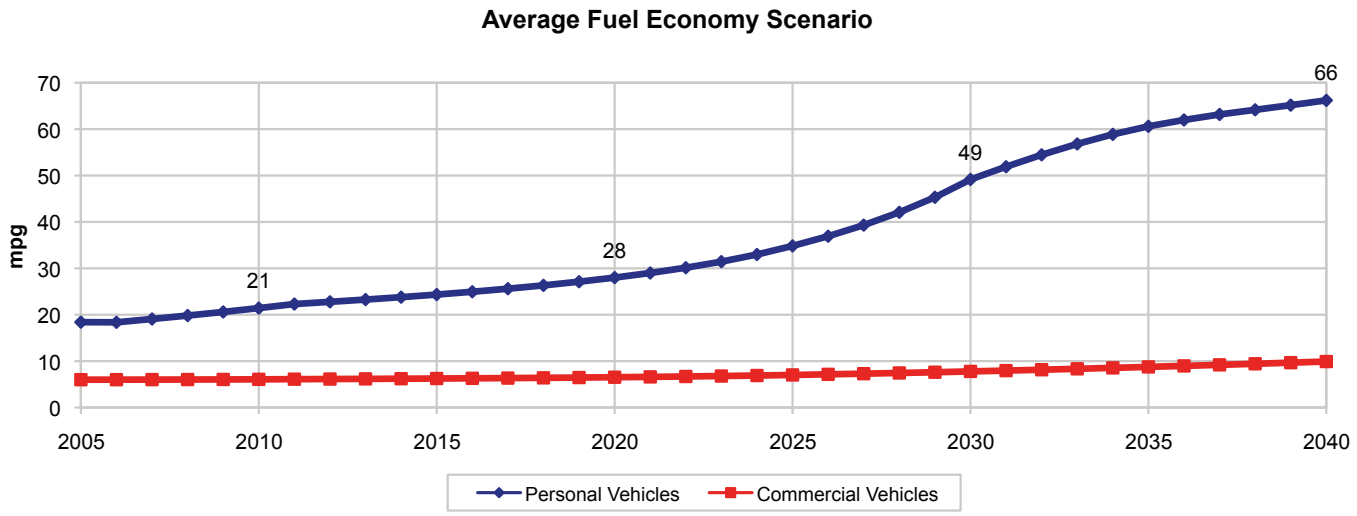
Overview

A vehicle miles traveled (VMT) fee is a user fee collected on the number of miles a vehicle actually travels, generally in lieu of motor fuels taxes collected on the amount of motor fuel purchased. In its most sophisticated form, a VMT fee has the ability to be priced differentially so that it can be used as a congestion pricing mechanism (higher fees for traveling on certain routes at congested times of the day).

The rationale for transitioning to a VMT fee is based primarily on the need to preserve transportation revenues as motor vehicles become more fuel efficient and/or use alternative fuels such as hydrogen or electricity.

Chart 5

Texas Fleet Fuel Economy Projections by TTI



The Texas Department of Transportation recently completed an analysis of their revenue needs through 2030 with the help of the Texas Transportation Institute and several national consulting firms. Chart 5 above comes from Dr. Dave Ellis with TTI showing the projected average fleet fuel efficiency for commercial and light duty personal vehicles (LDF) in Texas through 2040. The fleet profile of Texas is very similar to that of Arkansas. Notice that between 2010 and 2020, LDF fuel efficiency increases by nearly one-third – an erosion of 30% in the current tax base productivity. However, the rate of adoption of higher fuel efficiency vehicles markedly accelerates after 2020 so that by 2030 average fleet fuel efficiency has risen to 49.2 miles per gallon, effectively destroying the productivity of the existing motor fuel excise tax. It should be noted that TTI's High Fuel Economy scenario has LDF fuel efficiency increasing about 30% faster than the average scenario depicted above.

Multiple studies[1] have concluded that a VMT fee is the preferred transportation finance method of the future, recommending implementation at the federal level in the next 10-15 years. Recently, USDOT Secretary LaHood mentioned the possibility of a VMT charge in the next federal surface transportation bill, but the White House quickly dismissed the idea. Consequently, meaningful federal action on a VMT fee is at least six years away. Currently, no state uses a VMT fee although it has been discussed by several and pilot tested with 300 vehicles in Portland, Oregon in 2006-7.

Initial studies have identified concerns with issues of personal privacy and tax administration. Some experts believe that those matters have subsequently been resolved by advances in technology. Still, significant privacy concerns are likely to surface on any mandatory VMT fee system using vehicle tracking technology.

Vehicle Miles Traveled Tax Rates

At the federal level, it is estimated that a VMT fee would need to be at least .9¢ per mile on light duty vehicles to generate the Highway Trust Fund receipts of 2008. AHTD has not calculated what a revenue neutral VMT rate would be for Arkansas. The Oregon pilot program used a 1.2¢ per mile rate to replace a state gasoline tax of 24¢ per gallon. Using the 1.2¢ per mile rate, if an Arkansas auto was driven the typical 12,000 miles per year, the owner would pay $144 in VMT fees to the state. An additional $108 would be paid to the federal government at the .9¢ rate.

Administration

There are several serious unanswered questions about the VMT tax administration, among them:

- Uncertainty about national standards for VMT tax collection
- The unknown cost to develop, deploy and administer a new tax system
- How to transition to a new system when older vehicles do not have the on-board technology to support it
- Whether to collect from vehicles from other states traveling through Arkansas, and if so, how

The National Cooperative Highway Research Program (NCHRP)[2] reviewed all existing options for monitoring VMT, settling on three as the most promising:

- Mileage metering based on fuel consumption--Using RFID technology to estimate mileage, this option offers limited metering flexibility, but is expected to be the least expensive to develop and operate. The system would utilize fuel retailers, ensuring that vehicles unable to use the system could still be taxed through the

[1]Transportation Review Board, American Association of State Highway and Transportation Officials, National Cooperative Highway Research Program, National Chamber Foundation, University of Iowa, Oregon Road User Fee Task Force (cited in Transportation for Tomorrow, Report of the National Surface Transportation Policy and Revenue Study Commission, December 2007).

[2]Implementable Strategies for Shifting to Direct Usage-based Charges for Transportation Funding. National Cooperative Highway Research Program Web-Only Document 143, Transportation Research Board, June 2009.

existing fuel taxes. It provides the ability to use a pay-at-the pump model until a transition could be made to more sophisticated metering equipment.

- OBD II / cellular-based metering--This technique uses On-board Data technology, which has been a standard interface on all passenger car models since 1996. The in-vehicle device would electronically read the speed and a corresponding clock signal, numerically integrate the speed to get miles traveled, and read the VIN number (already on vehicles since 2002). The data would be transmitted by text message through the cellular communications network, to a central office where the appropriate billing system is set up. Each vehicle's account would show the accumulated VMT reading and an odometer estimate that could be checked against the actual odometer reading. This method would alleviate privacy concerns, provide great flexibility in metering, and be relatively simple to implement.
- Coarse-resolution GPS-based metering--This is the method proven successful in the Oregon trials. It works on the same principle as the OBD II method except that it uses GPS to identify the area of travel or travel distance. Although the method allows flexibility in metering, the main concern is the price of the necessary equipment and the privacy concerns associated with the use of GPS.

Advantages

- The VMT fee is a pure user fee that equitably charges the roadway users for the benefits they receive from the road network and the wear and tear they apply to it.
- A VMT fee can support future highway finance as the traditional fuel revenue base shrinks in the face of increased vehicle efficiency and alternative fuels.

Disadvantages

- A VMT fee, like the motor fuel excise tax, is inelastic and must be indexed to some measure of inflation or have its rate regularly adjusted in order to maintain its purchasing power.
- The risks of a small market state like Arkansas unilaterally adopting a VMT fee are very high until national standards are adopted for a VMT fee technology, collection and reporting methods.

Carbon Tax on Motor Fuels

Overview

A carbon tax is a tax on the carbon content of fossil fuels, in this case, on-road motor fuels. The rationale for an additional and different tax on motor fuels is that carbon dioxide causes environmental damage that is not accounted for in the price of motor fuel. A carbon tax is a means of capturing and pricing that externality.

Collection of the tax would require differing rates of taxation per unit of volume based upon the carbon content of each motor fuel. Table 1 on the following page shows the carbon dioxide coefficients.

Administration

The tax would be collected using the same mechanism as the motor fuel excise taxes.

Advantages

- The carbon tax is a new tax and would only require a simple majority of the General Assembly to adopt or increase.
- The carbon tax can be easily and equitably applied to alternative motor fuels such as ethanol, methanol, biodiesel, propane (LPG), and CNG, if, as hoped, they come into more widespread use.
- If federal climate change legislation or federal surface transportation legislation is adopted that requires a state plan for CO2 reductions or the Environmental Protection Agency regulates carbon dioxide as a criteria pollutant, the carbon tax mechanism could serve as proof of the state's early leadership and provide a mechanism for addressing any future requirements.

Disadvantages

- The carbon tax, like the excise tax, is inelastic. In order to retain its purchasing power over time, the carbon tax would have to be raised periodically by automatic indexing or periodic rate increases.

Table 16
Motor Fuel Carbon Content and Carbon Tax

Transportation Fuel	Emission Factors		Ratio of Carbon Content to Motor Gasoline
	Pounds CO_2 Per Unit of Volume		
	Value (Pounds)	Volume Unit	
Biodiesel			
-B100	0.00	gallon	0.00
-B20	17.89	gallon	0.92
-B10	20.13	gallon	1.03
-B5	21.25	gallon	1.09
-B2	21.92	gallon	1.12
Diesel Fuel (No. 1 and No. 2)	22.37	gallon	1.14
Ethanol/Ethanol Blends			
-E100	0.00	gallon	0.00
-E85	2.93	gallon	0.15
-E10 (Gasohol)	17.59	gallon	0.90
Methanol/ Methanol Blends			
-M85	10.68	gallon	0.55
Motor Gasoline	19.54	gallon	1.00
Compressed Natural Gas (CNG)*	14.62	1GGE	0.75
Propane/LPG	12.67	gallon	0.65

***1 Gasoline Gallon Equivalent (GGE) = 121.5 Cu Ft of CNG**

In Table 16 the first column lists the most common types of motor fuels (motor gasoline and diesel are highlighted). Columns 2 and 3 list the carbon content of each fuel in pounds per gallon except for CNG, which is listed in pounds per Gasoline Gallon Equivalent (GGE).

Table 17
Revenue Potential of Carbon Tax

	lbs carbon per gallon	1/4¢ per lb (millions)	¢ per gallon	1/2¢ per lb (millions)	¢ per gallon	3/4¢ per lb (millions)	¢ per gallon	1¢per lb (millions)	¢ per gallon
Gasoline	19.54	$66.63	4.89	$133.26	9.77	$199.89	14.66	$266.53	19.5
Diesel	22.37	$34.25	5.59	$68.49	11.19	$102.74	16.78	$136.98	22.37
Total		**$100.88**		**$201.75**		**$302.63**		**$403.51**	

A carbon tax levied on the two main fuels, motor gasoline and diesel, at the rates indicated in Table 2 would raise substantial revenue based on 2008 AHTD data.

Table 17 also shows how each quarter cent of additional carbon tax per pound would be reflected in terms of increased tax per gallon.

Taxation of alternative fuels would initially generate only a small amount of revenue and, therefore, was not calculated for this table. In 2007 the Energy Information Administration estimated use of alternative fuels in Arkansas to be 2.7 million gallons/ equivalent units.

Issues to be Resolved

1. Method of administration for alternative fuels.
2. Impact of a carbon tax on emerging Arkansas biofuels enterprises.

Equitable Share for Heavy Trucks

Many believe that heavy trucks account for a disproportionate amount of the wear and tear on major roadways. However, state cost allocations studies vary widely in their conclusions, and some national research seems to be contradicted by local data.

This policy brief will discuss two areas of concern regarding the equitable share of transportation costs for the trucking industry:

- Studies and methodologies for allocating highway costs
- Methods for recovering highway costs from heavy trucks

Cost Allocation Studies

Two main methods for doing cost allocation studies have evolved over time. The first, the Incremental Method, developed in Oregon, assigns responsibility for highway costs by first determining the costs of constructing and maintaining facilities for the lightest vehicle class and then building the facility up to account for the costs attributed to each increment of larger and heavier vehicles.

The second method, known as the Federal Method, applies a consumption approach to pavement rehabilitation and some related work, while applying the traditional Incremental Approach for expenditure elements that could not be viewed as consumed by highway use. This approach has been refined over the years through several federal cost allocation studies, evolving into the National Pavement Cost Model (NAPCOM) by the end of the 1990's. Research done through the National Pavement Cost Model (NAPCOM) is frequently cited as a measure of the damage done by heavy trucks. The NAPCOM model indicates that the average exponential damage from increases in axle weight is 2.5, which means that it would take 750 cars to do the same pavement damage as one 80,000 lb. truck.

There is also a philosophical difference in approach regarding whether to allocate the *full costs of roadway damage* to subsets of users (heavy trucks, light duty vehicles, natural resource trucks) or to allocate *relative responsibility for the expenditures* tied to the highway program. For example, in a state as perpetually under-funded as Arkansas, it is probably safe to assume neither light duty vehicles nor heavy trucks pay the full cost of the damage that they do to the highway and local road systems. On the other hand, if proportionate responsibility for funding the entire system were allocated among different classes of users, truckers will argue that they are paying for roadways they rarely use and do little damage to.

The Federal Highway Administration is planning to release a new national cost

allocation study that may shed some light on this topic in the first quarter of 2010. It is aniticipated that study will provide an improved technical methodology for states to conduct cost allocation studies.

Arkansas has not done a cost allocation study since the late 1970s or early 1980s and has no reasonably current analysis from which to empirically determine whether heavy trucks should pay a greater share of highway expenditures.

The trucking industry is publicly on record as saying that they are willing to pay a larger share of highway taxes if those dollars are spent on roadways used by heavy trucks. The industry has not said how much more it is willing to pay and the data that it offers showing its existing contribution to revenues and burden on the highway system often varies in significant degrees from that provided by AHTD.

User Fees and Taxes on Heavy Trucks

Transportation taxes and user fees geared to heavy vehicles fall into 3 main categories (Davis and Cunningham, 1994):

- ***First Structure***--These are fixed fees like motor vehicle registration fees and licensing fees that do not vary by amount of highway use, and are therefore insensitive to one of the primary determinants of highway costs, the vehicle miles traveled. They can be sensitive, though, to another key determinant of highway costs, which is vehicle weight. Therefore, some states and the federal government use registration fees that are classed by weight, to help pay for the extra costs occasioned by heavier vehicles.
- ***Second Structure***--These are primarily taxes on motor fuel that reflect vehicle miles traveled, but do not correspond to weight.
- ***Third Structure***--These are vehicle usage fees or taxes designed to reflect the total costs occasioned by a vehicle's use of roadways. Ton-mile taxes, mileage taxes, axle-mile taxes, and weight-distance taxes are of this type.

Arkansas has a *first structure tax* in the form of registration fees that increase with the weight of the vehicle. The registration fees capture, in a very limited way, some of the increased damage caused by heavier vehicles. The truck registration fees net $41 million per year to AHTD.

Arkansas' excise tax on diesel, at 22.5¢ per gallon, serves as a *second structure tax*. An increase in the diesel tax is the method favored by the trucking industry as the means by which they pay their fair share. This method is endorsed by the American Trucking Association because it:

- Offers minimal opportunity for evasion
- Can be collected and enforced without excessive administrative burden on truckers
- Is based on readily verifiable measures of highway use

- Remains uniform in application among classes of highway users
- Does not create impediments to interstate commerce

An increase in the diesel tax would work well from an administrative perspective because increases can be implemented easily through existing structure. The main problem with using only the diesel tax is that because it does not distinguish between weight classes, it may lead to inequities within the trucking industry if used alone.

Weight-distance Tax

Third structure taxes like the weight distance tax are the most contentious of taxes levied on the trucking industry, which explains why only 4 states currently levy a weight-distance tax: Kentucky, New York, Oregon, and New Mexico. At one time, seven other states, including Arkansas, had a weight distance tax. Oregon's weight-distance tax produces the most revenue ($178 million in 2003). The rates range from 4¢ per mile to 18.5¢ per mile depending on the truck's registered weight and number of axles. A trade-off is that fuel consumed by trucks that pay the weight-distance tax is exempt from the state fuel tax. The tax is administered through a system where truck operators periodically report in-state and out-of-state mileage, and submit payments. Such a system can be burdensome both for the industry and the public sector, and the cost of administration and enforcement is substantially higher than the traditional sources of excise taxes and license fees.

Arkansas' troubled history with its weight-distance tax began with the Federal Aid to Highways Act that took effect in 1983. This act required states to allow loads of 80,000 pounds. The State quickly passed Act 7 of 1983 to match the federal requirements, but the matter of how to pay for the damage done by the heavier loads was settled later by Act 685 of 1983, which established a weight-distance tax. Under Act 685, trucks loaded in excess of 73,280, which was the limit prior to Act 7, had the option of buying a $175 annual permit or paying a 5¢ per mile trip fee. Act 685 allowed a number of exemptions for agricultural, mining, and timber trucking uses, which became the basis for a constitutional challenge by the American Trucking Associations in 1987.

While the issue was making its way through the courts, the legislature passed a revised weight-distance tax of 2.5¢ per mile, with fewer exemptions, that was also challenged by the American Trucking Associations. At that time, the trucking industry proposed replacing the weight-distance tax with an increase in diesel fuel taxes and registration fees, which the Highway Commission opposed because it meant an increase in taxes for all classes of diesel trucks, while reducing the overall tax responsibility of the heaviest trucks.

The Arkansas Supreme Court forced the issue to a head by giving the Highway Department and the trucking industry a deadline of February 25, 1991 to reach an agreement to settle the weight-distance tax dispute. The compromise solution reached by Act 219 of 1991 raised the diesel tax 4¢ per gallon, increased registration fees for

trucks weighing more than 73,280 pounds, increased overweight permit fees and semi-trailer registration fees, and settled what would happen to the weight-distance taxes that had been in escrow while the issue made its way through the courts. Since that time, the State has been understandably reluctant to try new tax or fee structures that might cause heavier trucks to pay a more equitable share.

As a *third structure tax*, the weight-distance tax is the best of the commonly used methods to reflect the true roadway costs of heavy vehicles, providing a strong link between impacts on the system and taxes paid. However, implementation, administration, and compliance costs may be substantial. Consequently, a weight-distance tax will face heavy resistance from the trucking industry.

Conclusion

Based on the research done on this topic, it seems reasonable to ask whether commercial trucks pay for the full cost of damage that they do to Arkansas highways. However, Arkansas does not have the empirical analysis to answer that question definitively and, if the answer is "no", to determine what that cost should be. There is not consensus between the Highway Department and the trucking industry on the method for determining such a figure. Therefore, at present, there is no factual basis for either considering a third structure tax such as a weight distance tax or raising the diesel fuel tax or heavy truck registration fees substantially in relation to the gasoline tax and light duty vehicle license fee.

Because, however, substantial increases in motor fuel taxes will be required to fund highway needs over the coming decade, the general public may insist that trucking pay its "fair share". That figure can be arrived at based on a purely political negotiation with the industry or based on an Arkansas specific cost allocation study. The Blue Ribbon Committee's charge to define an adequate and equitable system to properly finance improvements to state highways would seem to require the cost allocation study. If one is conducted, all affected parties should be at the table when determining the approach and philosophy to be used.

Finally, the trucking industry is under competitive pressure to increase its productivity. It is actively seeking to decrease its costs per ton mile, which often equates to increasing the amount of freight delivered per trip. If Arkansas is to accommodate such productivity improvements in the future, the industry and the Highway Department must mutually agree on a rational way to accommodate it while protecting and rebuilding our highway system.

Public Private Partnerships/Tolling

Overview

Toll roads have been around since colonial times. They have a long history and play an important role in many states, though never in Arkansas. For the most part, they have been publicly owned and operated. Under Arkansas law, the State Highway and Transportation Department is authorized to act as a toll authority, as are Regional Mobility Authorities.

Since December 2004, however, when the United States Department of Transportation delivered the 2004 Report on PPP's (Public Private Partnerships), there has been a dramatic increase of activity in the U.S. PPP market. This increase is primarily evident in the execution of long-term concessions for the operation and maintenance of existing toll facilities, the procurement of new transportation capacity and capital improvements through long-term concessions for the design, construction, financing, operation and maintenance of such facilities and developments at the state and federal level to remove impediments to PPP's and promote their use. All levels of government in the United States are looking for innovative and creative ways to reform traditional approaches to transportation funding and procurement, and PPP's are an increasingly considered alternative.

State legislatures and public officials have taken various considerations into account in PPP's. Each state's approach, however, varies depending on a number of factors, including the public sector's policy objectives, the interest of the users, the characteristics of the project and specific risk factors. Currently, 25 states have statutory authority to enter into highway or transit PPP's. Arkansas is not among the 25 states at this time.

Issues Relating to the Feasibility of PPP's/Tolling

Toll Rates:

An ability to increase user fees over the life of an agreement is one of the most important drivers of value in long-term concessions that are financed based on user fees. The contribution of private capital is one of the most important benefits of PPP"s. The capital is used to pay the cost of projects' design and construction, long-term operation and maintenance, as well as rehabilitation and upgrades. Private operators assume the costs and risks associated with tolling projects in exchange for the right to earn a return on their investment.

PPP Agreements:

Private operators need a length of time, often called the "term", to be long enough to allow them to recover their cost and to achieve a reasonable return on investment.

One policy consideration in setting contract terms is the level of risk of the project. Other policy considerations should be considered as well, such as incentives, overall impact on government budgets and government capability and desire to operate various transportation assets. Recent PPP agreements have terms ranging from 35 years to 99 years. Some states have set statutory limits on the length of PPP agreements, most commonly 50 years.

Assurance of Long Term Maintenance:

One of the most often raised issues about PPP's is ensuring that the private operator will maintain the project and make necessary improvements. Different approaches to maintenance and mandatory improvements from past agreements include detailed or performance-based maintenance standards, reserve requirements, inspections and audits. In addition, the private developer has strong incentives to fully capitalize a project up front in order to limit long term operations and maintenance obligations.

Handback:

The return of the facility to the public sector at the end of the term in a state of good repair is a recognized risk. Public agencies in other states recognize this risk, and have used a variety of strategies, including letters of credit, annual audits and maintenance reserve funds to protect the public and insure proper maintenance by the investors through the end of the term.

Protection of Private Partner's Default or Bankruptcy:

Contracts typically provide that if the investors materially default in carrying out its obligations or become bankrupt or insolvent, its lender will have certain rights to cure the default and provide a new operator. If the lender does not step in, the state can terminate the agreement and either contract with another entity to operate the facility or step in and operate the facility itself.

Criteria in Selection of PPP's/Tolling Projects:

The decision to pursue a PPP requires much research and consideration of many factors, including policy objectives of the public sector, benefits, public support, and the financial prospects of the new project. PPP's have developed guidelines and statutes that govern how they make these decisions.

Tolling Programs for Interstate Highways:

Generally, the imposition of tolls on highways that have received federal aid, including interstate highways, is prohibited by federal law. By way of background, the federal highway laws typically apply only to highways that have received federal-aid. The total highway system in the U.S. consists of about 4 million miles of roadway, but only a portion of this mileage is subject to federal law, including laws regulating the use of tolls.

TIFIA:

The Transportation Infrastructure Finance and Innovation Act of 1998 ("TIFIA") provides significant support for PPP's. TIFIA authorizes USDOT to provide federal credit assistance to major transportation investments of national importance. TIFIA credit assistance can be provided for as much as 33 percent of total project cost.

SAFETEA-LU:

SAFETEA-LU creates a variety of programs authorizing tolling on interstate highways. While these programs do not require that tolling projects be PPP's, they do facilitate the use of PPP's to implement tolling on interstate highways and the potential involvement of the private sector in projects. With SAFETEA-LU programs there are currently six exceptions to the general prohibition of tolling on the IHS: (1) The Interstate System Construction Toll Pilot Program, (2) The Interstate System Reconstruction & Rehabilitation Pilot Program, (3) The Value Pricing Program, (4) The High Occupancy Toll (HOT) Lanes Program, (5) The Express Lanes Demonstration Program, and (6) Section USC 129. These activities include:

- Initial construction of non-interstate toll facilities and approaches to these facilities
- Reconstruction of existing toll facilities
- Reconstruction of free bridges or tunnels and conversion to toll facilities
- Reconstruction of free non-interstate highway and conversion to a toll facility
- Preliminary feasibility studies for any of the above

Corridors of the Future

On September 10, 2007, USDOT announced six interstate routes to participate in the corridors of the future program, a federal initiative to reduce congestion and improve freight movement across the country. One of the primary objectives of the program is to illustrate the benefits of alternative financial models that involve private sector capital. Among the selected corridors is I-69 from Texas to Michigan, part of which runs through the State of Arkansas.

The Arkansas Toll Feasibility Study

In November 2002, Wilbur Smith Associates located in New Haven, Connecticut completed a study sanctioned by the Arkansas Highway and Transportation Department for potential tolling projects in the state. It should be pointed out that this study is somewhat dated in that highway and bridge construction costs have gone up dramatically since 2002. The study provided a financial feasibility assessment for several projects in the state for possible construction and maintenance funding through tolling revenue. The study provided a detailed traffic and toll revenue analysis, estimates of capital and operating and maintenance costs on a financial feasibility assessment for each facility. The study initially examined 13 improvement corridors throughout the state of Arkansas.

Subsequently, six (6) projects were identified for further analysis under an initial system financing scenario. (Base Case Projects). The base case projects were identified due to their ability to support financial feasibility on a stand alone basis or their high potential to

do so. The analysis presented in tables ES-1 through ES-3 and ES-13 is a brief toll assessment summary of each proposed project. The full Executive Summary Report along with the full Toll Feasibility Assessment report is available from the Arkansas Highway and Transportation Department.

Conclusion

Based upon a review of several PPP's (Tolling) projects across the United States, most successful PPP's are located around large metropolitan areas with high traffic counts. Even then some projects may encounter future cash flow short falls due in part to (1) higher than projected maintenance and operational cost and (2) decline in projected usage for known and unknown reasons.

Two projects in Arkansas were identified as possible tolling candidates -- (1) the North Belt Freeway-I-40 East to I-40 West in North Little Rock, both open and closed barrier and (2) a proposed Bella Vista Bypass, both 4 lanes and 2 lanes, located in Benton County. The North Belt Project generated debt coverage of 162.67 % for a closed barrier and 124.15% open barrier in the 2002 analysis. The Bella Vista Bypass debt coverage for a four-lane project was projected to be 97.22% and 163.02% for two-lanes. One other project studied, Highway 63-I-55 to Jonesboro came close with 71.97% coverage. All other projects studied were nowhere near financially feasible on a stand-alone basis.

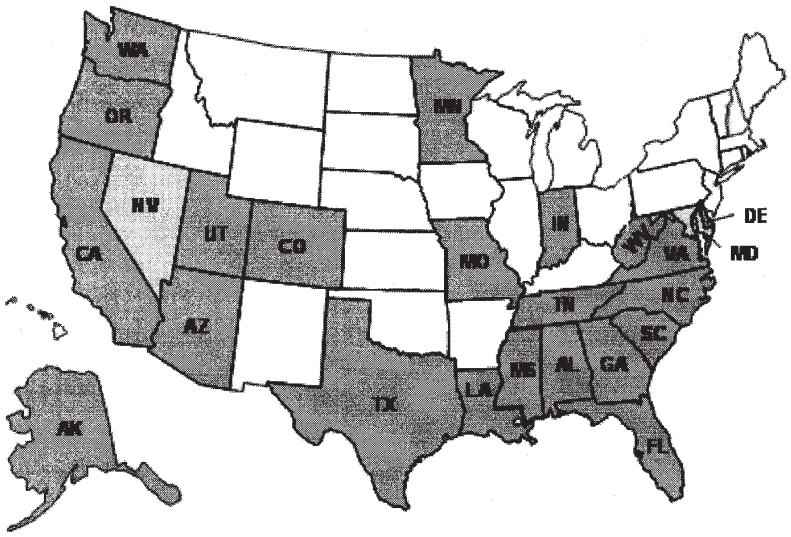
North Belt Update – The 2002 analysis assumed the already completed and paid for eastern leg (I-40 East to US 67/167) would be included in the toll road, resulting in the high coverage percentage. That section of the roadway could be included in a future toll road only if the Secretary of Transportation declared it no longer a federal aid project, and the state repaid the $57.3 million used to construct it. It is unknown if that amount would be required to be paid in nominal dollars or if it must be inflated to current dollars. In the meantime, the cost to complete the remainder of the roadway (US 67/167 to I-40 West) has risen from $204 million to $300-350 million and a parallel free route (I-40 – US67/167 to I-430) has added capacity which could negatively impact usage.

Bella Vista Bypass Update – The states of Arkansas and Missouri have jointly applied for a discretionary grant under the American Recovery and Reinvestment Act for this project for $145 million of the estimated $225 million cost. The remainder of the cost is to be covered by tolls.

Market Update – Prior to the recent financial crisis, a great deal of global capital was searching for viable infrastructure projects. As a result some marginally feasible projects were undertaken. Since 2008, however, only the highest quality infrastructure projects offering the most secure returns have attracted investors. As alluded to earlier, those returns are almost always found in major metropolitan areas with high levels of existing congestion.

The future of toll roads in Arkansas, in the next decade at least, seems limited to providing partial financing for a small handful of big ticket projects such as the Bella Vista By-pass and the Northbelt Freeway. Further study of this option should be undertaken for each of these projects or other major new capacity projects proposed in future highway programs.

STATES WITH PPP TOLLING AUTHORITY



	Broad authorization to use PPPs for toll roads and other toll facilities
	Authorization to use PPPs is limited to specific projects, pilot programs, projects approved by the legislature, or otherwise
	Authorization to use PPPs for certain transportation projects, but not for toll roads

States with Broad Legislation Enabling PPPs	
1. Colorado	Authorizes solicited and unsolicited proposals for PPPs and provides PPP authority to CDOT for specific projects including turnpikes and HOT lanes.
2. Georgia	Authorizes GDOT to both receive and solicit proposals for PPPs.
3. Florida	Authorizes solicited and unsolicited proposals for PPP toll roads at the State and county levels and authorizes FDOT to lease or increase capacity on existing toll facilities through PPPs.
4. Mississippi	Authorizes solicited and unsolicited proposals for PPP toll road and bridge projects.
5. Oregon	Authorizes ODOT to solicit and accept unsolicited proposals for PPP tollway projects.
6. South Carolina	Authorizes SCDOT to enter into PPPs for turnpike facilities.
7. Texas	Authorizes TxDOT and regional mobility authorities to accept solicited and unsolicited proposals for PPPs.
8. Utah	Authorizes UDOT to accept solicited and unsolicited proposals for PPPs involving tollway facilities.
9. Virginia	Authorizes solicited and unsolicited proposals for PPPs at the Commonwealth and local levels.

States with Limited Legislation Enabling PPPs	
10. Alabama	Authorizes ADOT and county commissions to license private entities to construct, own and operate toll roads, toll bridges, ferries or causeways.
11. Alaska	Authorizes the Knik Arm Bridge and Tolling Authority to utilize a PPP to finance, design, construct, operate and maintain the Knik Arm bridge.

12. Arizona	Two pilot programs each allow up to two solicited and unsolicited proposals for PPPs.
13. California	Authorizes four PPPs, two for northern California and two for southern California, each of which must improve goods movement – authorization expires on January 1, 2012.
14. Delaware	Authorizes PPP projects, including highways and bridges – specific legislative approval required for each project.
15. Indiana	Authorizes the Indiana Toll Road lease transaction and a PPP for the extension of I-69 – specifically prohibits the State from entering into PPPs for any other road or project without further legislative approval.
16. Louisiana	Authorizes PPPs for toll roads and bridges – any proposal would need the approval of the State legislature.
17. Minnesota	Authorizes solicited and unsolicited PPPs for toll facilities – PPP agreements are subject to local veto.
18. Missouri	Authorizes PPP for Mississippi River Bridge and for Safe & Sound Bridge Improvement Program.
19. North Carolina	Authorizes the North Carolina Turnpike Authority to use PPPs for up to nine toll facilities, including a toll bridge.
20. Puerto Rico	Establishes a toll transportation facility authority with broad powers to authorize private participation in public highway projects.
21. Tennessee	Authorizes two pilot toll road projects.
22. Washington	Authorizes solicited PPPs for eligible transportation projects – requires the State finance committee or the governing board of a public benefit corporation to approve the financing of any public project.
23. West Virginia	Authorizes public entities to acquire, construct or improve transportation facilities – requires the State legislature and Governor to approve the concession agreement

States with Legislation Authorizing Non-Highway PPPs	
24. Maryland	Highway projects are not currently authorized under Maryland's PPP law, but a highway PPP program has been established by regulation.
25. Nevada	Authorizes PPPs for transportation facilities, but toll bridge and toll road projects are excluded.

Table ES-1
Toll Assessment Summary
High Priority Corridors, Major Corridors and Segmentation Projects

Route	Project Distance	Through Trip Per Mile Rate				Total Average Daily Transactions				Total Gross Toll Revenue (1)			
		Passenger Cars		Commercial Vehicles		2005		2025		2005		2025	
		2005	2025	2005	2025	Closed Barrier	Open Barrier (2)	Closed Barrier	Open Barrier (2)	Closed Barrier	Open Barrier (2)	Closed Barrier	Open Barrier (2)
High Priority Corridors													
Highway 71 - Missouri to Louisiana	293.9	$0.041	$0.071	$0.092	$0.163	73,100	47,800	126,600	80,800	$49,461,000	$41,623,800	$140,869,000	$123,515,200
Highway 412 - Oklahoma to Missouri	268.9	0.052	0.091	0.117	0.208	53,500	28,900	99,710	53,550	31,272,288	25,052,688	102,461,796	81,603,506
Highway 63 - I-55 to Jonesboro	46.4	0.043	0.087	0.109	0.196	41,700	37,200	63,690	56,320	8,911,749	8,112,855	26,055,233	23,897,280
I-69/I-530 Ext. - Mississippi to Lousiana	171.5	0.039	0.058	0.087	0.136	29,900	27,600	39,520	37,130	13,541,500	12,880,850	28,900,518	27,689,265
Major Corridors													
Highway 49	184.0	0.052	0.091	0.118	0.209	11,100	6,300	20,430	12,170	3,501,947	2,572,566	11,990,706	9,272,779
Highway 65N	96.5	0.054	0.100	0.123	0.223	20,100	10,800	38,760	20,910	11,870,256	8,228,925	42,408,225	29,383,778
Highway 65/82	89.4	0.056	0.101	0.123	0.224	21,200	9,900	40,680	19,200	8,217,975	5,600,925	28,488,615	19,622,400
Highway 67	83.8	0.054	0.098	0.125	0.224	25,100	11,500	47,990	22,040	11,063,150	7,975,250	38,066,033	27,753,870
Highway 79	122.9	0.057	0.106	0.130	0.236	11,700	5,700	22,630	11,320	6,037,328	4,343,044	21,499,385	15,907,430
Highway 167	104.3	0.048	0.086	0.105	0.192	17,600	8,800	33,650	16,930	6,872,950	4,978,600	23,720,803	17,302,460
North Belt - I-40 East to I-40 West	16.8	0.089	0.149	0.208	0.327	58,600	38,600	106,300	74,000	17,819,300	13,384,550	55,452,625	41,865,500
Hot Springs Bypass	7.9	0.063	0.127	0.158	0.285	7,600	3,500	14,540	6,840	1,239,175	734,563	4,450,399	2,777,468
Segmentation Projects													
Highway 71													
Bella Vista Bypass	18.8	0.053	0.093	0.120	0.213	29,600	N/A	53,900	N/A	9,952,300	N/A	30,655,000	N/A
I-40 to DeQueen	122.0	0.049	0.086	0.111	0.197	31,200	N/A	50,100	N/A	23,071,700	N/A	62,383,000	N/A
I-40 to I-30	171.1	0.047	0.082	0.105	0.187	40,800	N/A	64,300	N/A	31,159,200	N/A	82,803,000	N/A
Witcherville to Ashdown	121.0	0.045	0.081	0.103	0.184	30,000	N/A	47,200	N/A	18,477,700	N/A	49,611,000	N/A
Fort Smith Bypass	19.7	0.051	0.089	0.114	0.203	16,600	N/A	27,300	N/A	6,524,400	N/A	17,822,000	N/A
I-30 to Louisiana State Line	29.0	0.069	0.121	0.155	0.276	7,300	N/A	14,200	N/A	3,709,400	N/A	12,227,000	N/A
Highway 412													
Springdale Bypass	16.5	0.061	0.121	0.152	0.273	13,700	N/A	26,030	N/A	2,925,931	N/A	10,102,561	N/A
Springdale Bypass West	8.0	0.063	0.125	0.156	0.281	3,600	N/A	6,840	N/A	804,825	N/A	2,793,071	N/A
Mountain Home to Walnut Ridge	97.0	0.044	0.077	0.103	0.178	9,400	N/A	17,390	N/A	5,328,068	N/A	17,280,971	N/A
River Crossings (3)													
Highway 49 - Mississippi River	5.8	2.00	3.50	4.50	8.00	6,700	N/A	12,540	N/A	5,808,063	N/A	19,109,393	N/A
Highway 79 - Mississippi River	15.2	2.00	3.50	4.50	8.00	500	N/A	950	N/A	433,438	N/A	1,447,681	N/A
Highway 82 - Mississippi River	3.2	2.00	3.50	4.50	8.00	6,000	N/A	11,400	N/A	5,475,000	N/A	18,308,400	N/A
I-69 - Mississippi River	23.3	2.00	3.50	4.50	8.00	1,900	N/A	3,100	N/A	1,733,750	N/A	4,978,600	N/A
Alternative Segments													
North Belt - Highway 67/167 to I-40 West	12.6	0.060	0.099	0.139	0.218	36,100	N/A	59,900	N/A	10,280,225	N/A	29,639,825	N/A
Highway 65N - Highway 412 to Missouri State Line	15.0	0.050	0.083	0.117	0.183	5,100	N/A	9,690	N/A	1,675,350	N/A	5,216,854	N/A
Highway 67 - Newport to Hoxie	40.6	0.049	0.086	0.111	0.197	16,600	N/A	31,540	N/A	4,931,150	N/A	16,623,195	N/A
I-530 Extension - Pine Bluff to Highway 278	42.6	0.035	0.070	0.082	0.164	5,600	N/A	7,900	N/A	1,741,506	N/A	4,886,894	N/A

(1) Annual toll revenue estimates do not reflect "ramp-up" in the opening year of 2005.
(2) Only the High Priority and Major Corridor projects were analyzed under an open barrier toll collection system.
(3) Per mile toll rates are not applicable for bridges. Proposed tolls are shown in the table for the river crossings.

Table ES-2
Net Toll Revenue Summary
High Priority Corridors, Major Corridors and Segmentation Projects
4-Lane Configuration and Closed Barrier System
(thousands)

Route	Capital Costs	Total Gross Toll Revenue (1)		Maintenance and Operation Costs		Reserve Maintenance Fund Deposits		Total Net Toll Revenue	
		2005	2025	2005	2025	2005	2025	2005	2025
High Priority Corridors									
Highway 71 - Missouri to Louisiana	$2,152,916	$34,623	$140,869	$30,015	$59,724	$4,090	$4,090	$518	$77,055
Highway 412 - Oklahoma to Missouri	2,452,002	21,891	102,462	27,612	54,941	4,660	4,660	(10,381)	42,861
Highway 63 - I-55 to Jonesboro	109,096	8,744	26,055	5,807	11,556	210	210	2,727	14,289
I-69/I-530 Ext. - Mississippi to Lousiana	1,722,669	13,185	28,901	17,411	34,645	3,270	3,270	(7,496)	(9,014)
Major Corridors									
Highway 49	803,585	2,451	11,991	7,085	14,103	1,530	1,530	(6,164)	(3,642)
Highway 65N	1,070,098	8,309	42,406	10,075	20,051	2,060	2,060	(3,826)	20,295
Highway 65/82	1,091,660	5,753	28,489	11,399	22,681	2,070	2,070	(7,716)	3,738
Highway 67	500,293	7,744	38,066	9,439	18,780	940	940	(2,635)	18,346
Highway 79	1,474,203	4,226	21,499	14,174	28,201	2,800	2,800	(12,748)	(9,502)
Highway 167	958,884	4,811	23,721	11,471	22,827	1,820	1,820	(8,480)	(926)
North Belt - I-40 East to I-40 West	207,757	12,474	55,453	2,557	5,088	400	400	9,517	49,965
Hot Springs Bypass	100,676	867	4,450	1,153	2,294	190	190	(476)	1,966
Segmentation Projects									
Highway 71									
Bella Vista Bypass	173,094	6,967	30,655	2,723	5,416	290	290	3,954	24,949
I-40 to DeQueen	1,239,586	16,150	62,383	13,103	26,072	2,100	2,100	947	34,211
I-40 to I-30	1,640,163	21,894	82,803	17,837	35,487	2,780	2,780	1,277	44,536
Witcherville to Ashdown	1,186,849	12,934	49,611	12,688	25,247	2,010	2,010	(1,764)	22,354
Fort Smith Bypass	256,432	4,567	17,822	2,131	4,244	440	440	1,996	13,138
I-30 to Louisiana State Line	257,245	2,597	12,227	3,235	6,435	440	440	(1,078)	5,352
Highway 412									
Springdale Bypass	230,132	2,048	10,103	1,866	3,712	390	390	(208)	6,001
Springdale Bypass West	127,457	563	2,793	829	1,649	220	220	(486)	924
Mountain Home to Walnut Ridge	918,052	3,730	17,281	9,201	18,308	1,570	1,570	(7,041)	(2,597)
River Crossings									
Highway 49 - Mississippi River	348,017	4,066	19,109	815	1,625	600	600	2,651	16,884
Highway 79 - Mississippi River	472,116	303	1,448	1,592	3,169	810	810	(2,099)	(2,531)
Highway 82 - Mississippi River	280,369	3,833	18,308	598	1,193	480	480	2,755	16,635
I-69 - Mississippi River	449,981	1,643	4,979	2,263	4,503	770	770	(1,390)	(294)
Alternative Segments									
North Belt - Highway 67/167 to I-40 West	203,960	7,196	29,640	1,875	3,732	350	350	4,971	25,558
Highway 65N - Highway 412 to Missouri State Line	116,749	1,173	5,217	1,575	3,132	200	200	(602)	1,885
Highway 67 - Newport to Hoxie	223,741	3,452	16,623	4,695	9,341	380	380	(1,623)	6,902
I-530 Extension - Pine Bluff to Highway 278	391,536	1,643	4,887	4,528	9,013	670	670	(3,555)	(4,796)

(1) Gross annual toll revenue estimates have been adjusted to reflect "ramp-up" during the opening year of 2005.

Table ES-3
Net Toll Revenue Summary
High Priority Corridors, Major Corridors and Segmentation Projects
4-Lane Configuration and Open Barrier System (1)
2-Lane Configuration and Closed Barrier System (2)
(thousands)

Route	Capital Costs	Total Gross Toll Revenue (3)		Maintenance and Operation Costs		Reserve Maintenance Fund Deposits		Total Net Toll Revenue	
		2005	2025	2005	2025	2005	2025	2005	2025
High Priority Corridors (1)									
Highway 71 - Missouri to Louisiana	$2,135,929	$29,137	$117,339	$26,355	$52,442	$4,060	$4,060	($1,278)	$60,837
Highway 412 - Oklahoma to Missouri	2,439,226	17,537	81,604	24,617	48,982	4,630	4,630	(11,710)	27,992
Highway 63 - I-55 to Jonesboro	106,029	8,026	23,898	5,142	10,232	200	200	2,684	13,466
I-69/I-530 Ext. - Mississippi to Lousiana	1,719,137	12,564	27,689	16,580	32,990	3,270	3,270	(7,286)	(8,571)
Major Corridors (1)									
Highway 49	797,450	1,801	9,273	5,754	11,446	1,500	1,500	(5,453)	(3,673)
Highway 65N	1,065,860	5,760	29,384	9,078	18,062	2,030	2,030	(5,348)	9,292
Highway 65/82	1,079,392	3,921	19,622	8,736	17,383	2,050	2,050	(6,865)	189
Highway 67	493,936	5,583	27,754	7,942	15,804	940	940	(3,299)	11,010
Highway 79	1,461,934	3,040	15,907	11,512	22,907	2,680	2,680	(11,152)	(9,680)
Highway 167	951,983	3,485	17,302	9,973	19,844	1,810	1,810	(8,298)	(4,352)
North Belt - I-40 East to I-40 West	205,457	9,369	41,866	2,058	4,099	390	390	6,921	37,377
Hot Springs Bypass	99,909	514	2,777	986	1,962	190	190	(662)	625
Segmentation Projects (2)									
Highway 71									
Bella Vista Bypass	106,668	6,967	30,655	2,442	4,860	180	180	4,345	25,615
I-40 to DeQueen	NA	NA	NA	NA	NA	NA	NA	NA	NA
I-40 to I-30	NA	NA	NA	NA	NA	NA	NA	NA	NA
Witcherville to Ashdown	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fort Smith Bypass	177,592	4,567	17,822	1,837	3,657	300	300	2,430	13,865
I-30 to Louisiana State Line	NA	NA	NA	NA	NA	NA	NA	NA	NA
Highway 412									
Springdale Bypass	143,003	2,048	10,103	1,620	3,225	250	250	178	6,628
Springdale Bypass West	76,163	563	2,793	710	1,417	130	130	(277)	1,246
Mountain Home to Walnut Ridge	NA	NA	NA	NA	NA	NA	NA	NA	NA
River Crossings									
Highway 49 - Mississippi River	NA	NA	NA	NA	NA	NA	NA	NA	NA
Highway 79 - Mississippi River	NA	NA	NA	NA	NA	NA	NA	NA	NA
Highway 82 - Mississippi River	NA	NA	NA	NA	NA	NA	NA	NA	NA
I-69 - Mississippi River	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alternative Segments									
North Belt - Highway 67/167 to I-40 West	NA	NA	NA	NA	NA	NA	NA	NA	NA
Highway 65N - Highway 412 to Missouri State Line	NA	NA	NA	NA	NA	NA	NA	NA	NA
Highway 67 - Newport to Hoxie	NA	NA	NA	NA	NA	NA	NA	NA	NA
I-530 Extension - Pine Bluff to Highway 278	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not available.

(1) High Priority and Major Corridor projects were analyzed under a 4-lane configuration with an open barrier system.

(2) Only selected Segmentation projects were analyzed under a 2-lane configuration with a closed barrier system. River crossings and Alternative Segments were not considered under a 2-lane configuration.

(3) Gross annual toll revenue estimates have been adjusted to reflect "ramp-up" during the opening year of 2005.

Table ES-4
Financial Assessment Summary
High Priority Corridors, Major Corridors and Segmentation Projects

Route	Estimated Capital Cost (1)	Total Funds Available from Financing (2)	Total Funding Surplus (Shortfall)	Percentage of Project Supported by Estimated Revenues (4)	Years where Debt Service Can Not be Paid Due to Lack of Available Revenues	Project Status
High Priority Corridors						
Highway 71 - Missouri to Louisiana - Closed Barrier	$2,153,000,000	$456,419,427	($1,696,580,573)	21.20%	2006 - 2014	NOT Feasible
Highway 71 - Missouri to Louisiana - Open Barrier	2,136,000,000	357,890,375	(1,778,109,625)	16.76	2006 - 2014	NOT Feasible
Highway 412 - Oklahoma to Missouri - Closed Barrier	2,452,000,000	183,340,019	(2,268,659,981)	7.48	2005 - 2014	NOT Feasible
Highway 412 - Oklahoma to Missouri - Open Barrier	2,439,000,000	92,143,316	(2,346,856,684)	3.78	2005 - 2014	NOT Feasible
Highway 63 - I-55 to Jonesboro - Closed Barrier	109,000,000	78,450,231	(30,549,769)	71.97	2006 - 2014	NOT Feasible
Highway 63 - I-55 to Jonesboro - Open Barrier	106,000,000	75,175,993	(30,824,007)	70.92	2006 - 2014	NOT Feasible
I-69/I-530 Ext. - Mississippi to Louisiana - Closed Barrier	1,723,000,000	(3)	(1,723,000,000)	0.00	2005 - 2041	NOT Feasible
I-69/I-530 Ext. - Mississippi to Louisiana - Open Barrier	1,719,000,000	(3)	(1,719,000,000)	0.00	2005 - 2041	NOT Feasible
Major Corridors						
Highway 49 - Closed Barrier	804,000,000	(3)	(804,000,000)	0.00	2005 - 2041	NOT Feasible
Highway 49 - Open Barrier	797,000,000	(3)	(797,000,000)	0.00	2005 - 2041	NOT Feasible
Highway 65N - Closed Barrier	1,070,000,000	78,116,500	(991,883,500)	7.30	2005 - 2025	NOT Feasible
Highway 65N - Open Barrier	1,066,000,000	(3)	(1,066,000,000)	0.00	2005 - 2025	NOT Feasible
Highway 65/82 - Closed Barrier	1,092,000,000	(3)	(1,092,000,000)	0.00	2005 - 2025	NOT Feasible
Highway 65/82 - Open Barrier	1,079,000,000	(3)	(1,079,000,000)	0.00	2005 - 2041	NOT Feasible
Highway 67 - Closed Carrier	500,000,000	83,914,970	(416,085,030)	16.78	2005 - 2016	NOT Feasible
Highway 67 - Open Carrier	494,000,000	35,220,954	(458,779,046)	7.13	2005 - 2025	NOT Feasible
Highway 79 - Closed Barrier	1,474,000,000	(3)	(1,474,000,000)	0.00	2005 - 2041	NOT Feasible
Highway 79 - Open Barrier	1,462,000,000	(3)	(1,462,000,000)	0.00	2005 - 2041	NOT Feasible
Highway 167 - Closed Barrier	959,000,000	(3)	(959,000,000)	0.00	2005 - 2041	NOT Feasible
Highway 167 - Open Barrier	952,000,000	(3)	(952,000,000)	0.00	2005 - 2041	NOT Feasible
North Belt - I-40 East to I-40 West - Closed Barrier	208,000,000	338,362,289	130,362,289	162.67	2006 - 2014	Feasible
North Belt - I-40 East to I-40 West - Open Barrier	205,000,000	254,502,466	49,502,466	124.15	2006 - 2014	Feasible
Hot Springs Bypass - Closed Barrier	101,000,000	4,626,091	(96,373,909)	4.58	2005 - 2025	NOT Feasible
Hot Springs Bypass - Open Barrier	100,000,000	(3)	(100,000,000)	0.00	2005 - 2025	NOT Feasible
Segmentation Projects						
Highway 71						
Bella Vista Bypass 4 Lanes	173,000,000	168,184,565	(4,815,435)	97.22	2006 - 2014	Feasible
Bella Vista Bypass 2 Lanes	107,000,000	174,433,374	67,433,374	163.02	2006 - 2014	Feasible
I-40 to DeQueen	1,240,000,000	221,029,773	(1,018,970,227)	17.82	2006 - 2014	NOT Feasible
I-40 to I-30	1,640,000,000	282,463,696	(1,357,536,304)	17.22	2006 - 2014	NOT Feasible
Witcherville to Ashdown	1,187,000,000	122,520,625	(1,064,479,375)	10.32	2006 - 2014	NOT Feasible
Fort Smith Bypass 4 Lanes	256,000,000	87,589,555	(168,410,445)	34.21	2006 - 2014	NOT Feasible
Fort Smith Bypass 2 Lanes	178,000,000	94,402,531	(83,597,469)	53.04	2006 - 2014	NOT Feasible
I-30 to Louisiana State Line (5)	257,000,000	19,905,684	(237,094,316)	7.75	2006 - 2014	NOT Feasible
Highway 412						
Springdale Bypass 4 Lanes	230,000,000	33,417,995	(196,582,005)	14.53	2006 - 2014	NOT Feasible
Springdale Bypass 2 Lanes	143,000,000	39,395,329	(103,604,671)	27.55	2006 - 2014	NOT Feasible
Springdale Bypass West 4 Lanes	127,000,000	2,282,630	(124,717,370)	1.80	2005 - 2014	NOT Feasible
Springdale Bypass West 2 Lanes	76,000,000	5,374,721	(70,625,279)	7.07	2005 - 2014	NOT Feasible
Mountain Home to Walnut Ridge	918,000,000	(3)	(918,000,000)	0.00	2005 - 2041	NOT Feasible
River Crossings						
Highway 49	348,000,000	116,839,219	(231,160,781)	33.57	2006 - 2014	NOT Feasible
Highway 79	472,000,000	(3)	(472,000,000)	0.00	2005 - 2041	NOT Feasible
Highway 82	280,000,000	116,631,751	(163,368,249)	41.65	2005 - 2014	NOT Feasible
I-69	450,000,000	(3)	(450,000,000)	0.00	2006 - 2034	NOT Feasible
Alternative Segments						
North Belt - Highway 67/167 to I-40 West	204,000,000	175,317,407	(28,682,593)	85.94	2006 - 2014	Borderline Feasible
Highway 65N - Highway 412 to Missouri State Line	117,000,000	8,026,188	(108,973,812)	6.86	2006 - 2014	NOT Feasible
Highway 67 - Newport to Hoxie	224,000,000	27,083,661	(196,916,339)	12.09	2005 - 2016	NOT Feasible
I-530 Extension - Pine Bluff to Highway 278	382,000,000	(3)	(382,000,000)	0.00	2005 - 2041	NOT Feasible

(1) Estimates provided by HNTB and Garver Engineers to Wilbur Smith.
(2) Total amount of funds available for construction that was produced in the financial analysis. This total accounts for the cash flow shortfalls in the early years that would be required to be made up from some other sources.
(3) These projects have negative net annual toll revenues in almost every year, making a financing impossible.
(4) Total construction funds produced in the financing divided by the estimated capital cost.
(5) Congress recently made $93.8 million available for construction of Highway 71 which may change the feasibility of this project. Further study would be required if the AHTD pursued tolling this section.