

# **Investing in Transportation: A Benchmarking Study of Transportation Funding and Policy**

presented by the Pennsylvania Economy League



October 2006

**Transportation Funding Project**

# Transportation Funding Project

## Table of Contents

<b>Introduction</b>	6
About the organizations involved in this study	6
About the Pennsylvania Transportation Funding and Reform Commission	7
About this study	8
<b>Executive Summary</b>	9
Regional role in transportation policy	9
Prudent use of debt	10
Public-private partnerships	10
Revenue sources that rise with inflation	11
<b>Benchmarking Pennsylvania against Illinois, Michigan, New Jersey, New York and Ohio</b>	13
<b>Conditions and Performance</b>	13
Roads and bridges	14
Miles of road	15
Vehicle miles traveled	15
Bridge condition and age	18
Pavement condition	19
Road congestion	19
Public transit	20
Ridership	20
Infrastructure	22
Revenue sources	22
Comparison of system performance	23
<b>Transportation funding in Pennsylvania</b>	25
An overview of transportation funding in Pennsylvania	25
Revenue sources	25
Revenue growth rates	26

## **Transportation Funding Project**

Funding state highways and bridges	26
Revenue sources	27
Revenue growth rates	27
Funding public transit	28
Revenue sources	28
Revenue growth rates	29
Analysis and observations	29
<b>Transportation funding in benchmark states</b>	31
Table: State and Local Funding Sources for Transportation (2004)	32
State and federal funding	33
Motor fuels taxes	34
Motor vehicle registration fees	35
Toll roads and toll lanes	36
Public-private partnerships	37
Examples and lessons learned	38
Use of debt	41
Sale/Leaseback	42
Regional funding	43
Examples and lessons learned	44
Regional sales tax	47
Real estate transfer tax	47
Vehicle registration fees	48
Regional public-private partnerships	48
<b>Decision-making and allocations</b>	50
Federal to state	50
State to local	50
Innovative practices in nearby states	51
<b>Transportation and land use policy</b>	54
<b>Other policy considerations</b>	55
Economic development	55
Mobility and demographic changes	55
State police funding	56
Public Opinion on Transportation Infrastructure, Funding And Land Use	56
Summary of Findings	60

## **Transportation Funding Project**

<b>Appendices</b>	62
Legislation authorizing public-private partnerships	63
Key sources of revenue for regional dedicated funding: an overview	64
Motor vehicle registration fees – a closer look	65
Michigan’s vehicle registration fees	70
Funding alternatives to replace or supplement motor fuels taxes	72
Acknowledgements	74
Resources	75

## Transportation Funding Project

### Introduction

*About the organizations involved in this study*

The Pennsylvania Economy League (PEL) is a non-profit, non-partisan policy research and civic organization with offices in Harrisburg, Philadelphia, Pittsburgh, and Wilkes-Barre. PEL has a long and enduring reputation for independence in issue and policy analysis, allowing the facts to drive its findings. PEL's State Office was commissioned to complete this study by a unique coalition of organizations --each with its own approach to and interest in transportation policy in Pennsylvania.

Funders for this study of transportation funding and policy include the following:

**Associated Pennsylvania Constructors** ([www.paconstructors.org](http://www.paconstructors.org)) The Associated Pennsylvania Constructors (APC) is an association representing those who have a business interest in the transportation construction industry in Pennsylvania. Their mission is to focus the efforts and resources of the members to advocate adequate funding for Pennsylvania's transportation needs, foster a positive partnership between governmental agencies and officials and APC members based on trust, and promote quality in the design and construction of transportation systems.

**CEO Council for Growth** ([www.gpcc.com/econ\\_ceocouncil.asp](http://www.gpcc.com/econ_ceocouncil.asp)) The CEO Council for Growth, an affiliate of the Greater Philadelphia Chamber of Commerce, brings together top business and non-profit executives from southeastern Pennsylvania, southern New Jersey and northern Delaware to pursue an economic development agenda that creates growth in the region and nurtures collaboration among the many public and private stakeholders engaged in economic development initiatives.

**10,000 Friends of Pennsylvania** ([www.10000friends.org/](http://www.10000friends.org/)) 10,000 Friends of Pennsylvania is an alliance of organizations and individuals committed to promoting land use policies and actions that will enable Pennsylvania to strengthen its diverse urban, suburban, and rural communities and reduce sprawl. 10,000 Friends seeks growth and development that will support the economic and social viability of Pennsylvania's cities and towns, conserve fiscal resources, and protect our state's exceptional natural landscapes, environmental quality, and heritage resources.

**William Penn Foundation** ([www.wpennfdn.org/](http://www.wpennfdn.org/)) The William Penn Foundation is named for the 17th century Quaker whose pursuit of an exemplary society and understanding of human possibilities led to his founding of Philadelphia, the City of Brotherly Love. Today, the Foundation works to improve the quality of life in the Greater Philadelphia region by advancing dynamic and diverse communities that provide meaningful opportunity. In partnership with others, the Foundation works to advance a vital, just, and caring community.

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Study advisors include the following:

**Allegheny Conference on Community Development** ([www.alleghenyconference.org](http://www.alleghenyconference.org)) The Allegheny Conference on Community Development (ACCD) and its affiliates (Pittsburgh Regional Alliance; Greater Pittsburgh Chamber of Commerce; and Pennsylvania Economy League of Southwestern Pennsylvania, LLC) work in collaboration to stimulate growth in southwestern Pennsylvania's economy and improve the quality of life. ACCD and its affiliates lead a collaborative effort to bring new jobs, capital investment, and a better quality of life to the 10-county region of southwestern Pennsylvania.

**Pennsylvania Environmental Council** ([www.pecpa.org/](http://www.pecpa.org/)) The Pennsylvania Environmental Council (PEC) protects and restores the natural and built environments through innovation, collaboration, education and advocacy. PEC believes in the value of partnerships with the private sector, government, communities and individuals to improve the quality of life for all Pennsylvanians.

### *About the Pennsylvania Transportation Funding and Reform Commission*

In February of 2005, Governor Ed Rendell signed an executive order creating the Pennsylvania Transportation Funding and Reform Commission to complete a statewide investigation of Pennsylvania's transportation policies and funding challenges. The executive order states that there is a structural imbalance between operating funds available to Pennsylvania's transit agencies and the operating costs of these agencies, which could result in major reductions of service levels, increases in fares, and/or employee layoffs. The shortfall, according to the executive order, is a result of many factors, including growth rates for tax sources dedicated to transit well below the rate of inflation; heavy dependence on state general fund operations; low levels of support from local government; and dramatic reductions in federal operating support for transit.

In addition to the transit shortfall, the Commission was assigned to look into other transportation funding and management issues, including the structure and magnitude of state funding needed for the state's highways and bridges to be in a state of good repair and the management of the state transit agencies.

In August 2006, the Commission released a preliminary report, "Investing in Our Future: Addressing Pennsylvania's Transportation Funding Crisis." In the initial report, the Commission identified baseline funding gaps of \$416 million for highways and bridges and \$450 million for public transit – gaps that, according to the Commission, must be filled simply to protect existing transit service and preserve the existing road, highway and transit capital. Additionally, the report outlines two additional funding levels that would further enhance Pennsylvania's transportation systems by expanding services, improving mobility, and increasing the state's economic competitiveness.

The three levels are listed below:

<b>Pennsylvania Transportation Funding and Reform Commission Summary of Findings</b>			
	<b>Public Transit</b>	<b>Highways and Bridges</b>	<b>Total</b>
Existing System Stabilization and Preservation	\$450 Million	\$416 Million	\$866 Million
Incremental Transit Service Expansion and Improvement to Highways and Bridges	\$612 Million	\$893 Million	\$1.5 Billion
Improved Mobility	\$801 Million	\$1.3 Billion	\$2.1 Billion

Source: [www.dot.state.pa.us/tfrc](http://www.dot.state.pa.us/tfrc)

## **Transportation Funding Project**

The Commission is expected to release a final report and recommendations in November 2006. It is anticipated that the final report will offer specific courses of action regarding how to close the funding gap identified in the preliminary report.

### *About this study*

To supplement and inform the ongoing work of the Governor's Commission, The Pennsylvania Economy League, Inc – State Office (PEL) was commissioned to conduct a benchmarking study of transportation policy in Pennsylvania and other similar states, including Ohio, New York, New Jersey, Michigan and Illinois. Specifically, PEL was asked to examine other states' transportation infrastructure, physical conditions and performance, and transportation funding mechanisms to compare and contrast with Pennsylvania, with the goal of identifying various policy options for revenue generation and funding allocation, or other innovative policy solutions. PEL was further tasked with investigating practices in states outside the benchmark that are reputed to be sources of innovation and best practices.

Through data collection and analysis, a literature review, interviews with state and national stakeholders with a variety of perspectives on transportation policy, and a survey and analysis of potentially innovative policy practices in the benchmark and other states, PEL has completed this report to offer additional insight into transportation policy issues facing decision-makers in Pennsylvania. The paper looks at three primary areas:

- Conditions of transportation systems and infrastructure: How does Pennsylvania compare to similar states in some commonly used metrics of quality and availability?
- Funding for transportation programs: How does Pennsylvania fund transportation, and how has that changed over time? How do other states fund transportation programs? How does Pennsylvania compare?
- Decision-making and allocation: What are the different roles of state, regional, and local governments and the private sector in transportation planning and implementation and the connection to other policy areas such as land use planning and economic development?

In addition, questions were added to PEL's September 2006 IssuesPA/Pew poll to gauge public opinion on several funding options. This is included in the report. Finally, this paper provides possible options for consideration in Pennsylvania and an analysis of those alternatives.

## **Transportation Funding Project**

### **Executive Summary**

Newspaper headlines scream it; interest groups and state officials have studied and reported on it. Federal data demonstrate it. Drivers and transit riders know it from daily experience on the buses and rail lines, roads and bridges throughout the state: Pennsylvania's transportation systems are in bad shape – both physically and financially.

And it matters. In many ways, transportation is the lifeblood of the economy and an important component of quality of life. Each year, the average vehicle miles traveled (or VMT) per person are increasing – nationally and in Pennsylvania. And the number of riders of public transportation is growing as well. Interstate Highways - once created for defensive purposes during the Cold War era - now serve the entire economy, moving goods and people, providing access to jobs, shopping, education and more. Once, federal transportation dollars were focused almost exclusively on the development of a connected system of highways; now the focus has shifted to include not only highway development and reconstruction, but also to address the need for multi-modal transportation systems.

Pennsylvania is not alone in its transportation woes. Throughout the United States, federal, state and local governments struggle with transportation funding. In view of the many competing priorities for government resources and slow-growing dedicated revenue sources that are not keeping up with escalating materials and personnel costs for both transit operations and road and bridge construction, it's no surprise that funding for transportation has not kept pace with growing demands nor the growing needs of an aging system.

Nationally, the purchasing power of revenue from user fees such as the motor fuels tax is declining. National and state experts agree that in the future, transportation systems will not be able to rely as heavily on motor fuels taxes; as cars become more fuel efficient and because motor fuels taxes usually are cents-per-gallon, motor fuels tax revenue is not keeping pace with inflation. In some states, there has been slow movement away from traditional user fees toward sources that grow with inflation and toward non-associated fees and taxes at the state and regional level. Nationally, the trend is expected to increase over time as more state and local governments seek predictable, dedicated funding sources for transportation programs.

As Pennsylvania considers how to resolve its current financial and infrastructure-based transportation problems, there are several lessons that can be learned both from Pennsylvania's experiences and from the experiences of other states. These are summarized in the following four points.

#### *Regional role in transportation policy*

Transportation policy in Pennsylvania is not – and cannot be – one-size-fits-all. Each region has unique concerns – and unique needs. Pennsylvania's state leadership and transportation officials should reconsider the regional role in transportation decision-making and funding, including granting greater responsibility for regional transportation decision-making, providing taxing authority to a regional entity, and permitting regions to explore alternative financing mechanisms.

Through the federal Transportation Improvement Program (TIP) process, MPOs (Metropolitan Planning Organizations) have a role in allocating federal funds for roads and bridges. Though federal regulations dictate that regions have a say in transportation planning and policy implementation through the MPOs, transportation policy in Pennsylvania is largely a function of state government. Pennsylvania is unique in how it funds transportation, particularly transit. The proportion of transit funding that comes from state government – both capital and operating revenue – exceeds the national average. And in each of the states in this study (with the exception of New Jersey, which has a statewide transit system) the transit agencies rely much more heavily on regional dedicated tax sources than on state funds. In the states in this benchmark study, the regional role is limited predominantly to transit. However, a case can be made for a

## **Transportation Funding Project**

greater regional role in both transit and roads/bridge policy and financing to better align all transportation decisions with regional decision-making such as economic development and land use. In order to maintain and improve Pennsylvania's transportation systems, regional funding should supplement – not replace – the state's ongoing role in providing baseline transportation funding.

Regional taxation is an idea supported by the general public, according to an IssuesPA/Pew poll conducted in September of 2006; in the poll, regional taxes to fund regional transportation projects received majority support. Statewide, the results show 61 percent support for regional taxes to fix deteriorating roads within the region, and the same for bridges. There is relative support for statewide for regional taxes to pay for new lanes/new roads regionally (53%) and for regional public transportation (47%). In comparison, the same poll showed considerably less agreement regarding statewide taxes for similar statewide projects, with no tax option getting more than 44 percent approval.

Transportation policies impact mobility between and among smaller levels of government and also impact land use and development decisions. Consequently, for a regional system to be successful, it must truly be *regional*, not a series of local systems. The municipal or even county level, therefore, is too small in most cases, according to a variety of stakeholders both inside Pennsylvania and nationally. The right size and structure of a transportation region is an important consideration for decision-makers.

Finally, although a greater regional role should be considered, this is not to say that the state no longer should have a role or responsibility for transportation funding. The state is – and should continue to be – responsible for existing state-owned infrastructure and for maintaining that infrastructure. The state also should have some level of responsibility for public transit operations as part of its support for a comprehensive transportation system throughout the Commonwealth. Regional authority to explore alternative financing mechanisms and regional taxes dedicated to transportation, however, would allow regions to make additional investments to supplement the state's investments in transportation infrastructure and operations.

### *Prudent use of debt*

Like many states, Pennsylvania made liberal use of bonded indebtedness for transportation projects in the 1960s and 1970s, then experienced difficulty funding new infrastructure needs in subsequent years because of the debt service burden. At this time, Pennsylvania is in a fairly conservative position relative to other states, with bond proceeds for transportation projects representing 9.2 percent of transportation revenues from 1999 to 2004 versus the national average of 12.4 percent.

Prudent use of debt should include the identification of a dedicated and predictable revenue source to pay debt service and should be considered among the ways to finance long-term projects such as major road reconstruction, limited expansion, and public transit capital investments. Pennsylvania's current pay-as-you-go approach to highway and bridge transportation policy does not take advantage of the opportunity to structure the cost of investment across the life of the infrastructure, like a mortgage on a home or building. There are a variety of ways to use debt that can be explored – ranging from traditional bonds to special purpose and federal programs.

### *Public-private partnerships*

The term public-private partnership (PPP) has been broadly applied to any innovative involvement of the private sector in the design, construction, operation, maintenance or financing of transportation infrastructure. A PPP may be as small as a design-build contract for a single project, with the purpose of reducing costs or accelerating completion, or as large as the long-term lease of the Pennsylvania Turnpike. Two noteworthy PPPs in other states involved billions of dollars of up-front concession fees paid to government agencies by private firms for the long-term lease of existing toll facilities, in exchange for the right to retain the revenue generated from tolls. Other PPPs enabled the construction of new toll roads for

## **Transportation Funding Project**

reducing congestion and expanding capacity. With encouragement from the federal government, a wide variety of PPPs have emerged in the past five years. Because most of these partnerships are in the project planning stage or have begun implementation only recently, evaluating their ultimate success isn't possible at this time.

Currently, Pennsylvania has a limited ability design or implement PPPs. Enabling legislation specifically authorizing PPPs would enable PennDOT, MPOs and perhaps other entities to consider a wide range of alternatives, from design through funding. Transit authorities could explore opportunities for private sector involvement in operations, financing, and infrastructure. A provision to permit unsolicited proposals could offer private firms or regional entities incentive to think creatively about state and regional transportation infrastructure or to expedite regional priorities.

There are lessons to be learned from the experiences of others. For example, careful preliminary analysis of PPP agreements and detailed evaluation of project progress are important responsibilities of public agencies. The discipline of the free market provides private partners with ample incentive to avoid costly mistakes, but involvement of the private sector does not guarantee a trouble-free outcome. Also, stakeholders agree that any savings, revenue, or interest earned from engaging in PPPs should be funneled into transportation-related projects, not used to fund unrelated policies and programs.

### *Revenue sources that rise with inflation*

Any solution to the transportation funding crisis should include a dedicated, predictable funding stream (or streams) able at least to grow with inflation. History has shown that a cents-per-gallon increase in the motor fuels tax or increase in vehicle registration fees cannot be a long-term, stand-alone solution because such taxes and fees are not responsive to inflation. Therefore, such increases would only be stopgap measures, and future decision-makers would face another financial crisis in the near future.

Possible transportation-related options to explore include a registration fee schedule linked to total Vehicle Miles Traveled (VMT) or the value of vehicle – or adjusting the floor and ceiling of the Oil Company Franchise Tax (OCFT) to make it once again responsive to inflation. Other alternatives would include an increase in or dedication of a portion of a non-transportation-related tax, such as an income or sales tax. A balanced approach should include a variety of options that are adequate, predictable, and likely to grow with inflation, preserving purchasing power.

While funding for transportation has grown in the past ten years – outpacing general inflation – the operating costs and construction and maintenance costs for the state's aging systems have been rising far faster. As Pennsylvania's roads, bridges, buses, and rail cars reach the end of their useful life, maintenance costs rise and major capital expenditures become necessary. Failure to address these needs will lead to greater deterioration of the state's transportation infrastructure – and result in even greater costs in the future.

In the end, there likely is no silver bullet, no single answer that will resolve the fiscal woes of Pennsylvania's transportation systems easily. The experience of other states indicates the fundamental difficulty of offsetting the ongoing erosion of the purchasing power of federal and state motor fuel taxes by means of toll roads, use of debt, public-private partnerships, asset sales, or more cost-effective methods of designing, building, operating, maintaining and financing highways, roads and transit facilities. Though these ideas may help narrow the gap between existing needs and available resources, eventually decision-makers will need to identify dedicated and sufficient sources of revenue to fill the gap – or see an ongoing deterioration of the state's transportation systems.

The current transportation funding crisis provides an opportunity for state leaders to redesign the state's transportation program not only to resolve the financial concerns, but also to create transportation policy that is responsive to differing regional needs and protects future transportation investments. Pennsylvania's

## **Transportation Funding Project**

system of roads and bridges is mature and largely complete. In setting broad policy and when determining project-level funding, policymakers and planners should operate from the commonly agreed-upon philosophy of “maintenance first,” that maintenance of existing infrastructure takes first priority to begin to reduce the backlog of disrepair.

Pennsylvania’s needs are not dissimilar to those of other states. The state’s transportation systems must have adequate and predictable funding, dedicated sources of revenue that will grow with inflation, and the ability to adopt new and innovate programs, statewide or regionally, alone or in partnership with private entities. A combination of approaches, using some innovative programs and changes in decision-making procedures, as well as traditional tax revenue, is likely the most feasible solution to Pennsylvania’s transportation crisis. Pennsylvania has an opportunity not only to change the way the state funds transportation programs, but also to improve the way in which decisions are made and how transportation fits with other, related policy areas.

\*This report did not attempt to independently determine the monetary size and scope of the existing need in the state transportation system, nor how the size and scope of the gap might be reduced by alternative service delivery models and practices.

## Transportation Funding Project

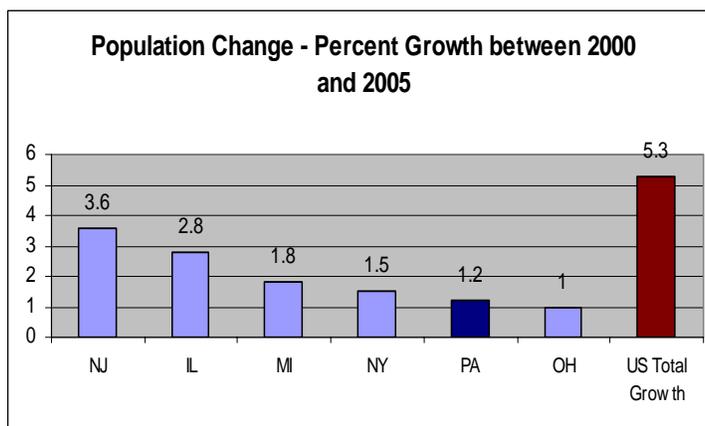
### Benchmarking Pennsylvania with Illinois, Michigan, New Jersey, New York and Ohio

This benchmarking study includes five states in addition to Pennsylvania: Illinois, Michigan, New Jersey, New York, and Ohio. The states are intentionally similar. All are states with similar weather conditions and similar geography, which has a direct bearing on road conditions. All are older states with long-established roads, bridges and transit systems. These states have similar demographic patterns and similar political structures. Finally, these states have similar economic conditions.

However, these states are not without their differences. For example, while four have similar urban/rural divides – about 80 percent of the population lives on about 20 percent of the land – New Jersey is more densely populated. Roughly 95 percent of New Jersey’s population lives in urban areas, an important factor when it comes to New Jersey’s unique state-operated public transportation system. Another difference worthy of note is the impact of a single major city versus the impact of numerous cities. Philadelphia, Chicago and New York City are very large metro areas that impact how public policy decisions are made at the state level – for public transportation, roads and bridges, and other policy areas. Often, legislative language specifies how the large cities are to be treated; often, political coalitions are less along party lines and more along geographic lines, leaving an ‘us against them’ dynamic when it comes to the big cities. The smaller, more dispersed cities in the others states don’t have the same pull and influence as these major metropolitan areas do on state policy decisions. This phenomenon makes regional decision-making all the more important, because a state-level one-size-fits-all approach cannot be successful.

In many ways, Pennsylvania’s problems are not unique, and as a result, this study cannot point to one of the benchmark states – or any other state, for that matter – as a perfect model. The other states in this benchmark study face many of the same problems: aging transit infrastructure; an aging highway system; a population that is spreading out in terms of land use and vehicle miles traveled (VMT), but growing at a slower rate than the national average; fiscal constraints due to escalating construction costs; health care costs that have doubled in recent years; and other policy issues competing for limited funds.

The chart shows population change from 2000 to 2005. Each of the benchmark states falls below the US total growth of 5.3 percent. Pennsylvania – at a 5-year growth rate of only 1.2 percent – is near the bottom among the benchmark states; only Ohio trails behind. Pennsylvania, like its neighboring states, will not be able to grow its way into a better system of transportation – not through population growth, economic growth, nor natural tax revenue growth.



### Conditions and Performance

Numerous reports by a variety of state and national sources have reported on the conditions of Pennsylvania’s transportation systems, and the news is not encouraging. The state’s transportation systems, including public transportation infrastructure, roads, and bridges, are in bad shape. Studies point to a variety of causes, including weather conditions and the impact of large, heavy trucks; lack of sufficient investment in preventive maintenance, repair and replacement; and aging equipment and infrastructure nearing the end of useful life.

## **Transportation Funding Project**

### *Pennsylvania's Roads and Bridges*

It comes as no surprise to Pennsylvanians who have occasion to travel across state borders – or even just those traveling within the state – that Pennsylvania's roads are not in great shape. There's a real impact to drivers on those roads – not just in comfort, but also in efficiency (e.g. speed) of travel, safety, and wear and tear on vehicles caused by bumpy roads. Research reports have quantified the estimated annual cost of maintenance and repair of vehicles from damage caused by driving on rough roads to be as much as \$400 per vehicle.

Pennsylvania's nearly 40,000 miles of state-owned roads and highways account for three-quarters of the daily miles traveled on the Commonwealth's roads. Though Pennsylvania's roadways have improved in recent years, still more than 27 percent of the state's roads are considered to be in poor or mediocre condition.

The situation is even worse where the state's bridges are considered. With its mountains, rivers, and other geographic characteristics, bridges are a vital to the state's transportation system. Nearly one-quarter of the state-owned bridges are considered "structurally deficient," and another 18 percent are considered to be "functionally obsolete;" these are terms defined by the federal highway administration. Nearly 6 in 10 bridges in Pennsylvania are at least 40 years old, nearing their useful life of 50 years.

There are several factors that have led to the current conditions of Pennsylvania's roads and bridges. One factor is simply the age of the system. The highway system in particular grew out of the development of the Interstate highway system in the mid part of the 20<sup>th</sup> century. And now its bridges – and roads – are nearing the end of useful life. Without appropriate maintenance and rebuilding, the roads and bridges will continue to fall into poor condition.

The cost of maintenance and construction is another factor. The costs are largely driven by the price of steel and petroleum products have increased rapidly in recent years. Various studies show an annual increase between 9 and 12 percent per year in recent years, far outpacing the consumer price index or general inflation rate of around three percent. As a result, the state is unable to keep pace with needed maintenance and repair with the current financial resources dedicated to transportation.

Another factor is the type of traffic on the roads. Heavier vehicles – particularly trucks – are exponentially more damaging to the road than other vehicles. Pennsylvania's location makes its highways ideal thruways for the trucking industry. On one hand, truck traffic means a positive economic benefit, as evidenced by distribution centers, warehouse facilities and industries that have chosen to stay or locate in Pennsylvania because of the ease of shipping and distribution. On the other hand, the trucking industry takes a toll on the state's transportation systems. Nearly half of all truck traffic is thru-traffic. Because of the state's location, it has a large portion of the overall truck traffic in the country. An analysis by the federal Bureau of Transportation Statistics published in 1993 shows Pennsylvania ranks 5<sup>th</sup> in terms of truck volume, behind Texas, California, Ohio and Illinois. Though some of the costs of road maintenance and repair are recovered through motor fuels taxes and other user fees, which are higher for heavier vehicles than for passenger vehicles, and some cost is paid by out-of-state vehicles through motor fuel taxes and other fees, much of the cost to repair damage on all the state's roads is borne by ordinary Pennsylvania taxpayers at the gas pump.

Finally, Pennsylvania's roads are burdened by more traffic than ever before. There has been a steady increase in total VMT in Pennsylvania, as in other states. Traffic on Pennsylvania's roads and highways is expanding faster than the state's population. From 1995 through 2004, the total VMT increased more than 15 percent to nearly 109 billion miles traveled. That translates to an increase of more than 1,000 VMT per licensed driver. In 2004, the average VMT per licensed driver in Pennsylvania amounted to more than 12,500 miles.

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### Miles of Road

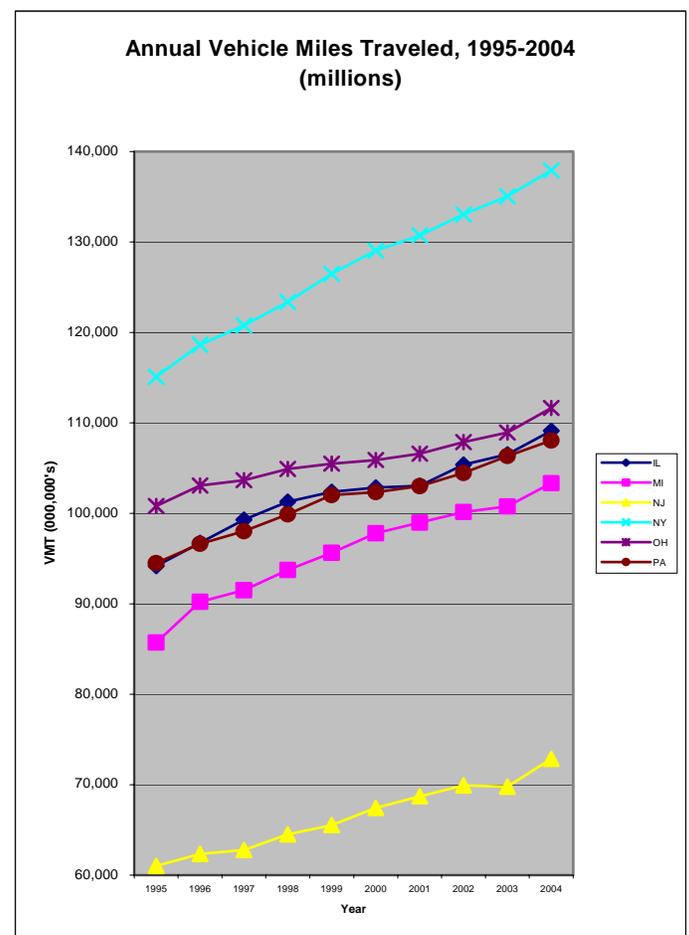
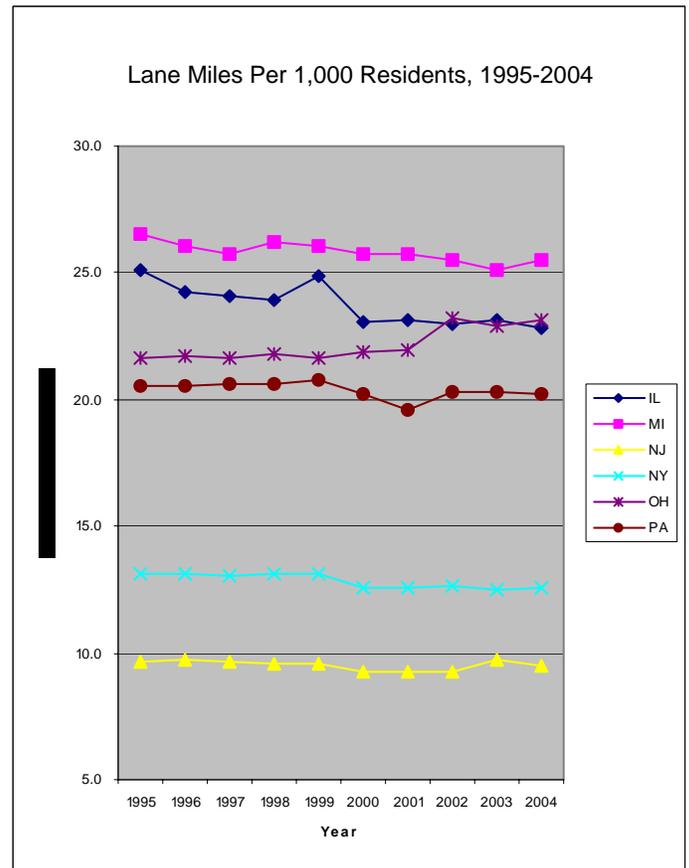
In 2004, Pennsylvania's 120,623 miles of roads ranked ninth in the country, while the state's 251,271 lane miles ranked tenth. Pennsylvania's 2004 estimated population of 12.4 million ranked seventh in the country, and its 8.4 million licensed drivers ranked fifth.

Relative to its benchmark states, Pennsylvania is somewhere in the middle based on road and lane miles per capita and per licensed driver. Illinois, Michigan, and Ohio all had marginally higher rates of mileage per licensed driver and total population, while New Jersey and New York had significantly lower rates. As one might expect, similar differences existed in lane miles by population. In 2004, Pennsylvania had 20.3 lane miles per 1,000 residents, while Illinois (22.5), Ohio (23.1), and Michigan (25.5) had marginally higher rates, and New Jersey (9.5) and New York (12.5) had significantly lower rates of lane miles per 1,000 residents.

Between 1995 and 2004, Pennsylvania and four of its five benchmark states saw gradual declines or no change in each of these measures, meaning population grew slightly. Illinois experienced the greatest decline in miles of road per 1,000 residents, dropping over nine percent in each of the measures of road and lane miles per population and licensed driver. That is, population growth in Illinois outpaced new road and highway construction more than in the other benchmark states. Pennsylvania saw from one to two percent declines in lane miles per population during this time. The one exception to this trend of decline was Ohio, which experienced from 5.9 to 11.0 percent growth in road and lane miles per population and licensed driver. That is, new lane miles increased faster than the population in Ohio, the only state with a slower population growth than Pennsylvania.

### Vehicle Miles Traveled

Over 100 billion miles are traveled on Pennsylvania roadways annually, a total that is steadily rising. In 2004, the state's nearly 109 billion VMT ranked eighth most in the country. Of Pennsylvania's total 2004 VMT, 24 percent were driven on interstate highways, 48 percent on other arterials, 15 percent on collectors, and 13 percent on local roads. In total, more than three-quarters of all miles traveled were on state-owned roads, which make up roughly a third of the total lane miles.



## Transportation Funding Project

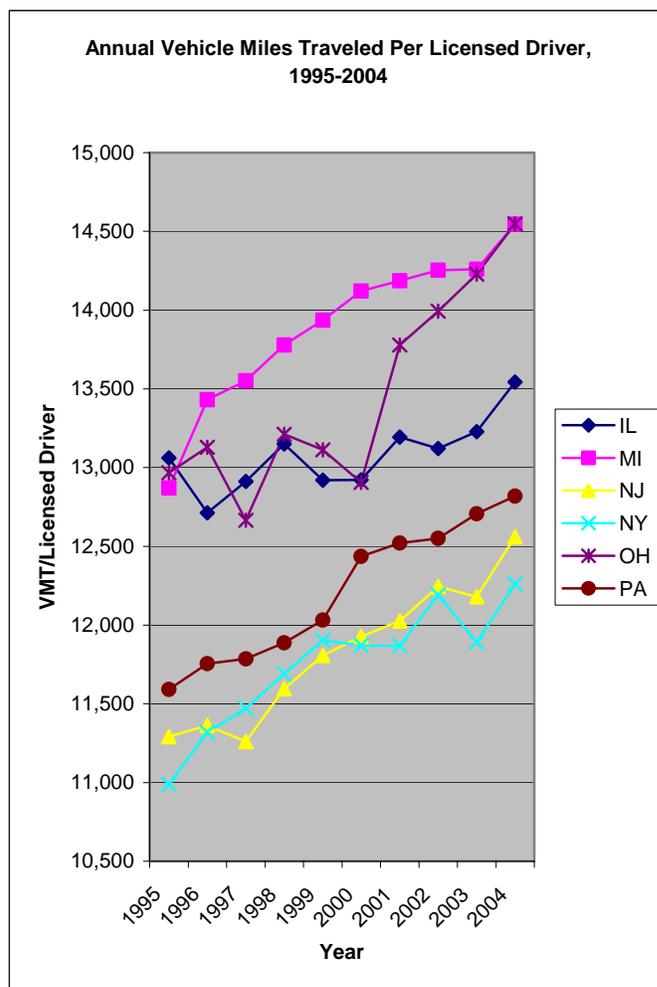
Pennsylvania's total 2004 VMT was in line with totals for its benchmark states. Of the five states – Illinois, Michigan, New Jersey, New York, and Ohio – only one had a VMT under 100 billion (New Jersey) and three (Illinois, Michigan, and Ohio) had a VMT within 4.3 percent of Pennsylvania's total. Similarly, the state's increase in VMT was not a unique occurrence, but rather was mirrored by benchmark states. The chart shows that between 1995 and 2004 each state experienced a comparable growth in total vehicle travel, with New York experiencing the largest increase in total VMT.

Pennsylvania's VMT per licensed driver ranked 41<sup>st</sup> highest in the country in 2004. The average Pennsylvania driver traveled 12,820 miles per year, up 10.6 percent from 1995. However, the VMT per year remained well below the national average of 14,895 VMT per licensed driver. Pennsylvania's VMT per licensed driver is comparable with benchmark states, of which Ohio had the highest rate of miles per licensed driver at 14,548 miles in 2004, while New York had the lowest at 12,261 miles. Pennsylvania's increase in VMT per licensed driver was similar to that of the benchmark states, as four of the five experienced increases between 10.5 and 13.0 percent, while Illinois' VMT per licensed driver increased just 3.7 percent.

Overall, despite large-scale increases in VMT between 1995 and 2004, neither Pennsylvania nor any of its benchmark states kept pace with national increases in vehicle travel, as the United States witnessed a 22.3 percent spike in total VMT to 2.96 trillion miles in 2004.

Pennsylvania's growth of vehicle travel also extended to VMT per lane mile. Almost all of this increase occurred on interstates, freeways, and expressway lane miles. These systems saw a combined increase of 27.4 percent. All other functional systems experienced much slower growth in VMT per lane mile, increasing a combined 4.6 percent during the 10-year span.

Between 1995 and 2004, there was a substantial shift in vehicle travel between these functional systems, and particularly within arterials. The interstate system's share of the state's total VMT increased by 27.3 percent over the 10-year span, while other arterials' share declined 8.7 percent. The table below presents the change in VMT by functional system between 1995 and 2004 in Pennsylvania. Overall, the state's highways experienced both the largest net increase (8.1 billion) and percent increase (45.7) of any functional system. Combined, all other systems experienced more modest 7.1 percent growth.



## Transportation Funding Project

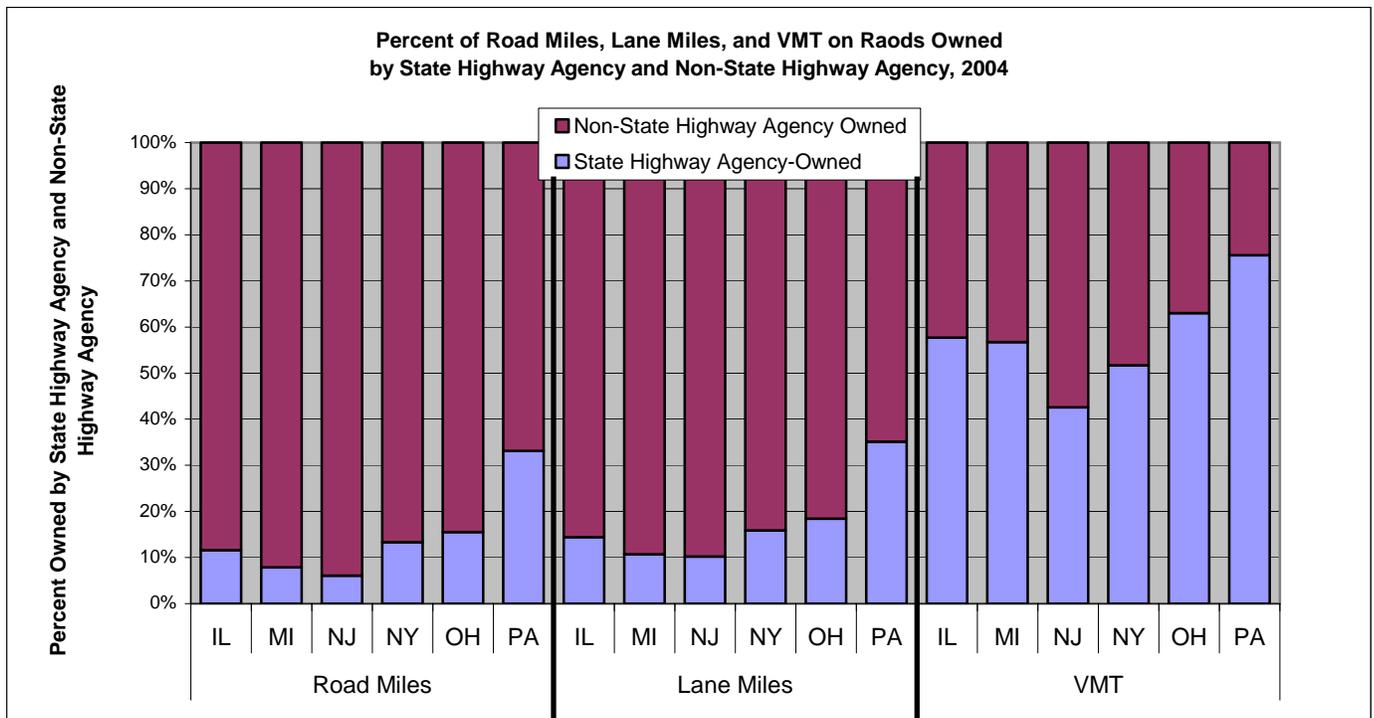
Vehicle Miles Traveled in Pennsylvania by Functional System, 1995-2004 (in millions)

Year	Interstates	Other freeways & expressways	Other principal arterials	Minor arterials	Collectors	Local Roads	Total
1995	17,640	5,511	24,743	19,393	14,874	12,359	94,520
1996	19,804	5,476	24,050	19,697	15,074	12,545	96,646
1997	20,563	5,550	24,201	19,467	15,475	12,759	98,015
1998	21,569	5,696	24,283	19,702	15,714	12,944	99,908
1999	22,335	5,864	24,274	19,989	15,683	13,866	102,011
2000	22,509	6,076	24,271	20,075	15,559	13,847	102,337
2001	23,009	6,307	24,420	20,029	15,373	13,866	103,004
2002	24,047	6,372	24,524	20,424	15,138	13,971	104,476
2003	24,952	6,502	24,569	20,926	15,261	14,137	106,347
2004	25,709	6,759	24,552	20,916	15,781	14,353	108,070
% Change	45.7	22.6	(0.8)	7.9	6.1	16.1	14.3

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics (1995-2004)*, Washington, D.C., Table VM-2.  
 NOTES: If a column's % change does not match up exactly to the given totals, the difference is due to rounding error.

In 2004, 75.6 percent of Pennsylvania's total VMT were on state highway agency-owned roads, which make up only one-third of the total road miles in Pennsylvania. Overall, Pennsylvania's state highway agency-owned roads have seen an increase in VMT per road mile of 9.5 percent (177 thousand miles) between 1995 and 2004 to more than 2 billion miles traveled.

The benchmark states and Pennsylvania differed greatly regarding the proportions of state highway agency ownership relative to the state's total network of roads. As the chart below illustrates, in 2004 each benchmark state experienced less than 60 percent of its total VMT occurring on state-highway agency-owned roads, and in all five states, no more than 16 percent of the state's total road miles were owned by the state highway agency. In contrast, in Pennsylvania over three-quarters of the state's total VMT occurred on state highway agency-owned roads; that is, three-quarters of all miles traveled occurred on only one-third of the total roads in Pennsylvania. From this, it's clear that Pennsylvania's state highway agency has far more responsibility and control over the state's overall network of roadways than departments of transportation in the benchmark states.



## Transportation Funding Project

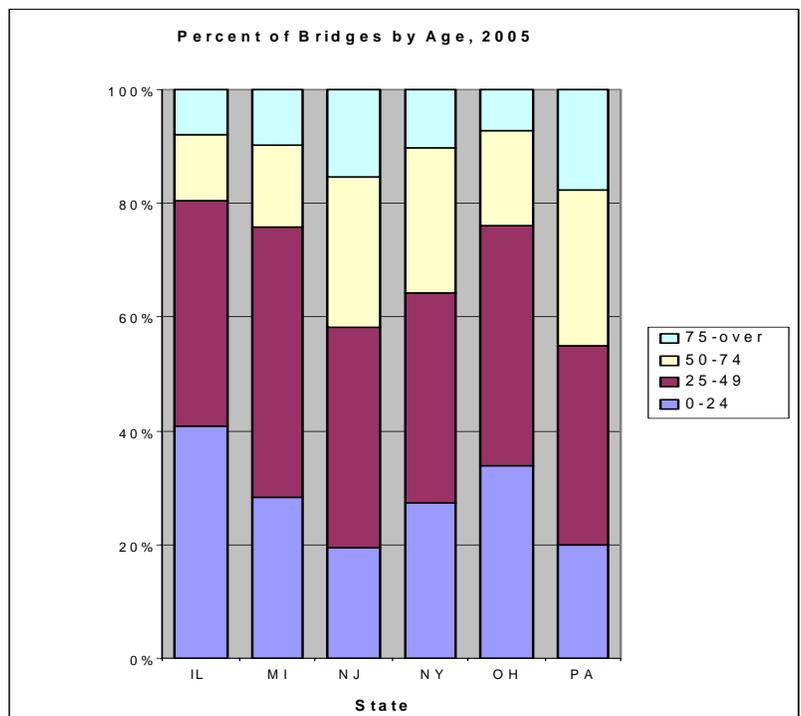
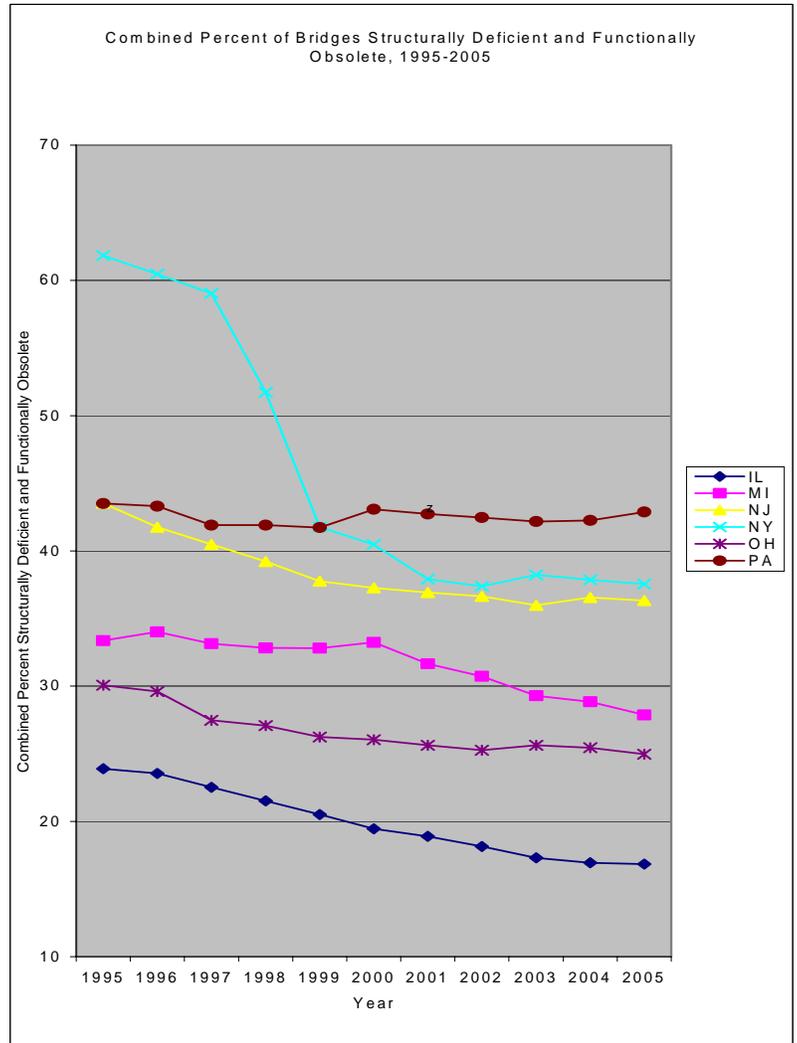
### Bridge Condition and Age

The Federal Highway Administration uses the terms “structurally deficient” and “functionally obsolete” to describe the condition of bridges. Generally, structural deficiency refers to inadequate structural sufficiency or waterway adequacy, while functional obsolescence is related to insufficient geometric capability of the bridge to carry traffic, including inadequate deck geometry, underclearance or approach roadway alignment.

Compared to the benchmark states, Pennsylvania has a higher percent of bridges considered structurally deficient and functionally obsolete. In 2005, 43 percent of Pennsylvania’s bridges were either structurally deficient or functionally obsolete, the fifth highest rate in the country and considerably higher than the national average of 26 percent.

Pennsylvania’s rate of bridges in poor condition was considerably higher than any of its benchmark states. In 2005, only New York (38 percent poor) and New Jersey (36 percent poor) had a rate of bridges in poor condition even close to Pennsylvania’s rate, which has remained consistently high. The accompanying chart illustrates that, while the benchmark states – most notably New York – are making progress in improving the condition of their bridges, Pennsylvania lags behind. Despite past funding increases that dedicated funds to bridges, between 1995 and 2005, Pennsylvania saw only a 1.4 percent reduction of bridges in poor condition, while all five of Pennsylvania’s benchmark states experienced at least 16.5 percent reductions.

In 2005, nearly one of every five bridges in Pennsylvania was over 75 years old, while another 20 percent were less than 25 years old. The chart shows the percent of bridges in each of the benchmark states, by age grouping. The ages of Pennsylvania’s bridges are among the oldest relative to its



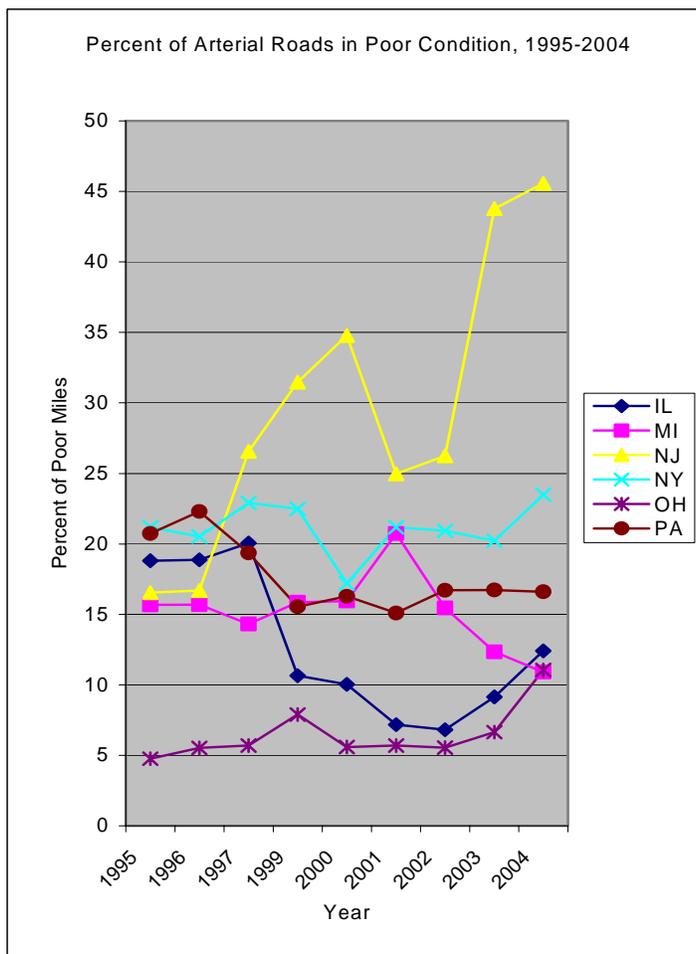
## Transportation Funding Project

benchmark states. Pennsylvania has the highest rate of bridges over 50 years old at 47.3 percent, and the lowest rate of bridges less than 25 years old.

### *Pavement Condition*

Pennsylvania's roadways are still in below average condition, but recent trends suggest the situation is improving. In 2004, roughly 17 percent of Pennsylvania's arterial roads were in poor condition, the 15<sup>th</sup> highest rate in the country and above the national average of 13 percent. While Pennsylvania's arterial roads remain in relatively poor condition, the state has experienced a marked improvement. From 1995 through 2004, the state experienced a 20 percent reduction of arterials in poor condition. Strongest improvements were made to interstates, freeways, and expressways, which saw a combined reduction in poor-rated miles of 77 percent, down from 17 percent in 1995 to just 4 percent in 2004. Other functional systems also experienced significant improvements, the exception being minor arterials.

Pennsylvania's arterial road condition ranks somewhere in the middle of the benchmark states, as Michigan (10.9 percent), Ohio (11.1 percent), and Illinois (12.9 percent) had lower rates of arterials in poor condition, while New York (23.5 percent) and New Jersey (45.6 percent) had significantly higher rates. The chart illustrates how arterial road condition changed between 1995 and 2004 for Pennsylvania and its benchmark states.



### *Road Congestion*

Pennsylvania's roadways are still more congested than the national average but are steadily becoming less congested by comparison. In 2004, five percent of Pennsylvania's road miles were congested, the 15<sup>th</sup> highest rate in the country. Pennsylvania's urban arterials, which typically are more congested than rural roadways due to increased population density, mirrored the state's overall trend in congestion, experiencing an 18.6 percent reduction in overall congestion between 1995 and 2004. Despite this decrease, urban arterials remained more congested than the state's overall roadways on average.

Relative to benchmark states, Pennsylvania's overall rate of 5 percent congestion fell somewhere in the middle of the pack. In 2004, congestion in New Jersey (16.5 percent) and New York (9.1 percent) ranked second and fifth highest in the country respectively, while Illinois (3.7 percent), Michigan (3.7 percent), and Ohio (3.6 percent) had less congestion than even the national average of 4 percent.

Generally, the benchmark states have experienced declines in congestion. Between 1995 and 2004, four of the five states saw congestion decreases of at least 2 percent. The one exception to this trend was New York, which saw an increase in congestion over the decade. Similarly, New York was the only benchmark state to see increases in congestion on urban arterials, while Pennsylvania and the four other benchmark

## **Transportation Funding Project**

states congestion reduction in urban areas.

The impact of the major metropolitan area road congestion is evident in the statewide congestion figures among benchmark states. As of 2003, Philadelphia was ranked as the 25<sup>th</sup> most congested area in the United States with respect to the Travel Time Index (TTI) published in the 2005 Urban Mobility Study, while Pittsburgh was tied for 64<sup>th</sup> place. Within comparison states, only the metropolitan areas of Chicago (2<sup>nd</sup>), New York (10<sup>th</sup>) and Detroit (12<sup>th</sup>) were evaluated as more congested than Philadelphia by the TTI measure. Congestion cost – that is, the value of travel time delay plus excess fuel consumption – in the Philadelphia region was estimated at \$1.9 billion, the 10<sup>th</sup> highest ranking in the nation, during 2003. For the Pittsburgh region, annual congestion cost was calculated to be \$243 million (42<sup>nd</sup> place). Use of public transit reduced congestion cost in Philadelphia by an estimated \$576 million (the 7<sup>th</sup> highest amount) and in Pittsburgh by \$62 million (25<sup>th</sup> in the U.S.).

On already crowded highways and roads, congestion will increase more rapidly than the growth of population unless mitigation efforts are made, according to experts. A recent national study projects that by the year 2030 the Philadelphia region will have nearly 1,500 lane-miles of severely congested highways and roads, a total exceeded only by New York, Los Angeles, Chicago, Dallas, and Miami. Although Philadelphia's 2030 congestion index, which measures travel time at peak hours versus off-peak travel time, is projected to be only 24<sup>th</sup> highest in the nation, that future congestion is expected to be worse than in today's Chicago.

According to report prepared by the Delaware Valley Regional Planning Commission, "Destination 2030," the Greater Philadelphia region has a mature highway network. This has two important implications. First, according to the report, a large percentage of transportation funds must be spent on rebuilding and/or maintaining the existing infrastructure at the expense of improved or new facilities or services. Second, since there are few new facilities planned, most increase in capacity will have to come from making the current system more efficient. However, a 2005 study of the Atlanta metropolitan area found that less than one-sixth of that area's traffic congestion problems could be alleviated by "operational strategies such as incident management, ramp metering, signal timing and access management" and instead is likely to require increased highway capacity.

Because congestion is accompanied by costs including fuel consumption, wear and tear, and lost time, congestion can encourage drivers to avoid peak travel times or to consider public transit options, if available. However, for commuters with inflexible work schedules or limited access to public transit and for truckers hauling goods, congestion is a costly aggravation that can potentially dampen regional economic growth.

Highway and road congestion is exacerbated by disperse land use patterns. The cost of dependence on automobile travel is compounded by greater commuting distances, decentralized services, and inefficient travel routes. Long term land use issues – including transit-oriented development – deserve attention as part of a balanced solution to protect future transportation investments.

Other studies suggest that expanding highways and roads induces more automobile travel and is shortsighted and often creates congestion on other highways and roads. Short-term roadway expansion solutions may make existing regional transportation problems more intractable over the long term if other travel modes are not addressed at the same time. Pennsylvania's mature highway systems may gain comparatively greater benefits from financial support for an array of transportation options including transit-oriented development.

### *Public Transit Ridership*

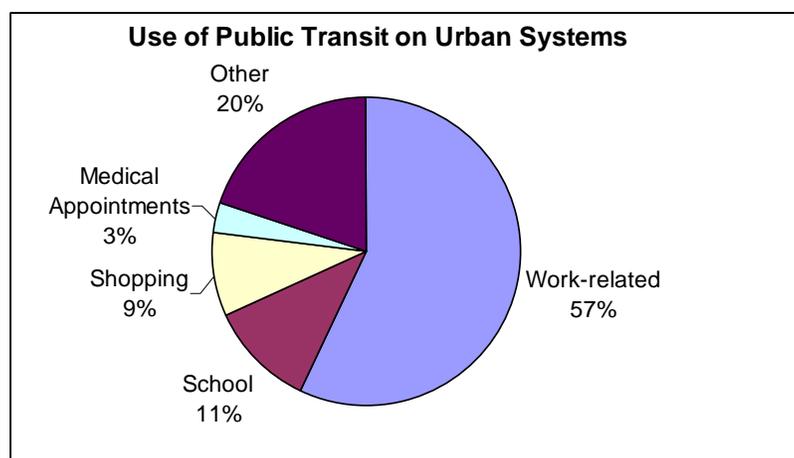
Statewide, Pennsylvanians take more than 400 million passenger trips per year on all types of public transportation, serving both urban and rural areas. There are 74 different public transportation systems

## Transportation Funding Project

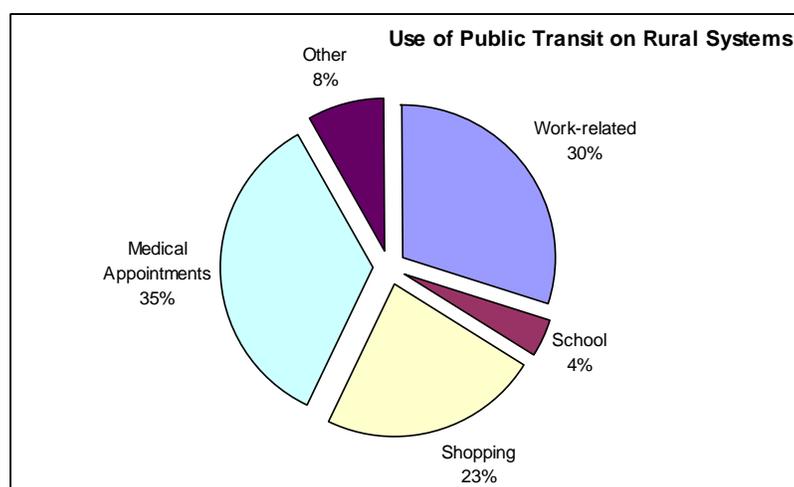
throughout the state, including urban and rural fixed-route systems and community systems such as dial-a-ride or paratransit. Though the majority of those trips take place in the two major systems in Philadelphia and Allegheny counties and the majority of statewide attention is focused on these two systems, clearly public transportation is not limited to the largest metro areas but also can be found throughout the state in rural, urban and suburban communities. By comparison, Ohio has 60 public transit systems – 24 urban and 36 rural – which serve 126 million passengers annually. The majority of operating and capital funding for transit comes from regional and federal sources, and the state plays a very small role, providing some grant funding to rural systems.

While motor vehicles account for 88 percent of overall travel, there continues to be a strong demand for public transportation. Particularly in urban areas, public transit provides congestion relief, taking a number of single-occupancy cars off the roads. Nationally, passengers make more than 9.5 billion trips annually using public transportation, and passenger miles traveled has increased 23 percent in ten years – a rate faster than highway travel in the same timeframe. Though Pennsylvania’s transit ridership has not increased as fast as the national trend, in recent years ridership has increased statewide, fueled in part by high gasoline prices.

In urban environments, over half (57%) of transit trips are work-related. Other transit trips on urban transit systems help transport people to school (11%), shopping (9%), medical appointments (3%). In the city of Pittsburgh, nearly half the workers who commute downtown to work use transit. In Philadelphia, the percent of center city workers who commute via transit is even greater – with roughly 70 percent of all workers using transit. SEPTA in Philadelphia provides half a million daily trips.



In rural areas, the use of public transportation is more diverse. Roughly two-thirds of transit trips on rural systems are either medical-related (35%) or work-related (30%). The remainder are shopping-related (23%), for school (4%) or some other purpose.



Public transportation is an important service for Pennsylvanians who rely on it for mobility. It is not only a means of transportation, but an important connector to human services and economic development related activities such as work, shopping and medical care. Without viable public transportation options, many workers currently using public transit would be required to join the majority of workers who commute to work in single-occupancy automobiles, adding to congestion for everyone on the road, particularly in already-congested areas. Or, alternatively, those workers and others without access to an automobile or unable to drive would lack the mobility and independence that most individuals enjoy; they would be without reliable transportation to get to and from work, medical appointments, school, or other locations.

## Transportation Funding Project

### *Infrastructure*

Nationally, most of the federal funding for public transit comes from the Highway Trust Fund, 18 percent of which is dedicated to public transit. The remaining 82 percent is dedicated to highways and bridges. Though the physical condition of the state's public transportation systems warrants attention and further investigation, operating and financial conditions have received the most attention. Though overshadowed by ongoing funding crises, there is potential that a new kind of crisis is looming – one of aging capital: poorly maintained buses, rail lines, trains and more.

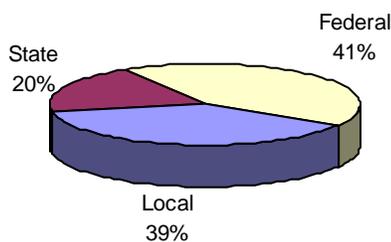
Public transportation condition and performance data at a statewide level is difficult to come by. In fact, most transit data is available only by system, so it is not possible to make an accurate comparison at the state level. However, there is evidence to suggest that nation's transit systems are facing infrastructure problems. In Pennsylvania, there are more than 5,600 vehicles on the road providing transportation services and more than 1,000 miles of rail. According to the National Transit Database, in 2003 approximately 28 percent of transit and rail vehicles were 12 years or older. There is anecdotal evidence, mainly through interviews with transportation officials and transit experts, that Pennsylvania's aging infrastructure is comparable with the national data. And many experts agree the state's transit infrastructure is aging and in some cases falling into disrepair in part because there has been little investment in capital and preventive maintenance during the year-in, year-out operational crises that plagued Pennsylvania's public transit agencies in recent years.

### *Revenue sources for transit*

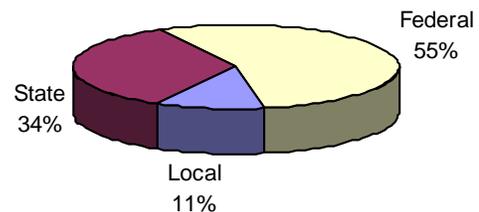
In Pennsylvania, there is no regional authority granted by the state to raise local or regional taxes dedicated to public transportation. As a result, state government shoulders much of the burden to pay for public transportation in Pennsylvania. Based on data from the US Department of Transportation, Pennsylvania ranks relatively high in state support for public transportation, on a per capita basis.

As a percent of total revenue, Pennsylvania also ranks high in state support for public transit. Over 50 percent of the operating revenue for public transportation in Pennsylvania comes from state source, a greater percentage than in any of the benchmark states except New Jersey, which has one state-operated transit system. Likewise, state revenue provides a larger portion of the capital revenue for public transit in Pennsylvania – more than 34 percent. Again, except for New Jersey, that is a larger portion than in the benchmark states.

**Operating revenue - Other Benchmark States**



**Operating revenue - Pennsylvania**



## Transportation Funding Project

Unlike in other states, transit in Pennsylvania is funded mainly through discretionary funds, making funding unpredictable from year to year. Systems in other states have a greater proportion of funds that come from local or regional dedicated sources. A scan of the larger transit systems in the country shows that Pennsylvania's major systems are more reliant on state revenue than the average.

In addition to local tax revenue, farebox revenue is an important aspect of local funding for public transit. Compared to the top 50 largest transit systems in the United States, Pennsylvania's largest transit systems have mixed results. The average of the 50 top systems in terms of percent of funding that comes from farebox collections is more than 35 percent. Philadelphia's SEPTA system outperforms that average with nearly 40 percent of all funding coming from farebox collections. On the other side of the state, Pittsburgh's Port Authority (PAT) collects less than 25 percent of total funding from farebox collections.

### *Comparison of system performance*

Nearly three-quarters of all transit trips are on the state's biggest transit systems, so understanding how SEPTA and the Port Authority compare to other large systems is important to understanding the state's transit program.

<b>Comparison of Large Transit Systems, Source of Operating Funds Expended, as a Percent</b>			
	Farebox Revenue	Local Revenue	State Revenue
SEPTA (Philadelphia)	38.6%	7.7%	43.6%
Port Authority (Pittsburgh)	24.3%	9.5%	52.4%
50 System Aggregate – Average	36.4%	28.3%	22.8%

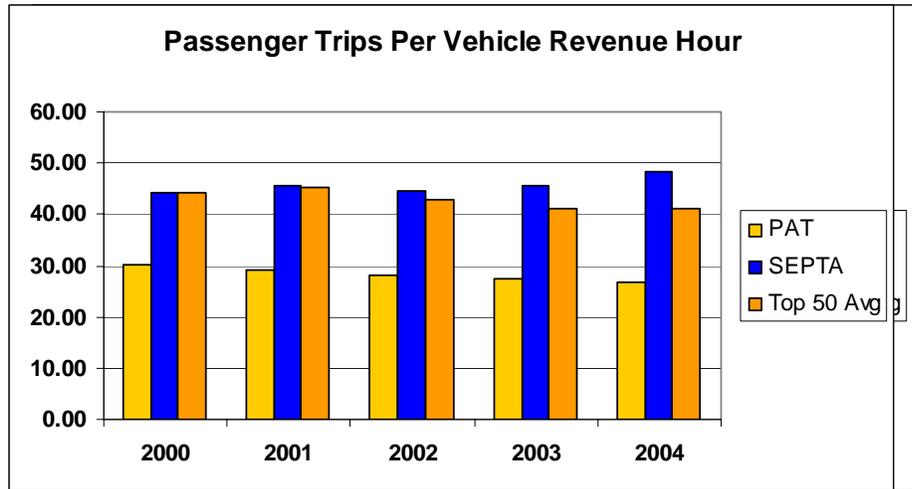
Transit systems are more operations-intensive than the state's roads and bridge system, and costs associated with staffing transit are one part of the difficulty transit systems face financially. Nationally, approximately 44 percent of public transportation budgets are dedicated to operating costs – including fuel costs, salaries, health care insurance, and other benefits, while 33 percent goes to vehicle and facility maintenance, 13 percent for purchased services, and 15 percent to general administration.

Since 2001, public transportation operators in Pennsylvania have had to manage sharp increases in the cost of health care for their employees – a 100 percent increase since 2001, according to the Commission report. In addition, the cost of fuel has driven up the overall operating costs for public transportation. To manage the year-in, year-out funding crisis, state leaders have used stopgap measures such as using funds typically used for the highway system to help fund the state's public transportation systems. Public opinion on this use of federal funds is mixed; in a Triad poll by Susquehanna Polling and Research in the spring of 2006, 45 percent favored this use of federal funds to provide emergency funding to transit, while an equal number did not approve of this use of federal funds.

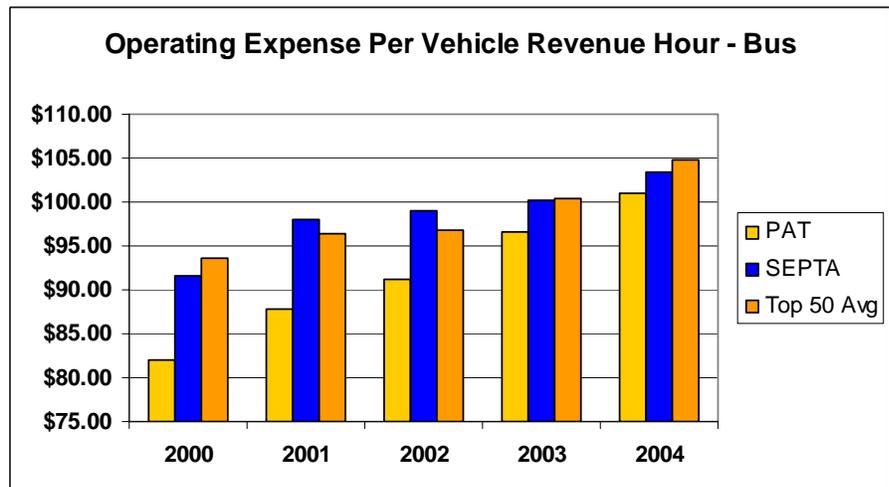
There are various ways to measure performance of transit systems, including measures of operating costs per hour, costs per rider and rider per hour. Each tells a slightly different story of how systems compare. Although SEPTA in Philadelphia and the Port Authority (PAT) of Allegheny County are only two of many systems in Pennsylvania, they represent a large share of riders and a large share of state funding for transit. For that reason, and because there is limited comparable transit data at the state level, the following uses data on *bus services only* provided by SEPTA and PAT and compares the performance data with the average of the top 50 transit systems nationwide. System data and the top 50 system averages are provided by the National Transit Database.

## Transportation Funding Project

The cost per passenger trip – or cost per rider – measures the actual costs of providing bus service to each passenger. Costs per passenger can be reduced by having more riders on each bus, thereby distributing the costs of operations over a larger number of passengers. PAT’s costs per passenger trip exceed the 50 system average by more than \$1 per passenger trip (\$3.76 versus \$2.60 in 2004), and the costs per passenger trip for PAT have grown faster than the 50 system average. On the other hand, the cost per passenger trip for SEPTA are lower than the 50 system average by \$0.46 in 2004 (\$2.14 versus \$2.60). In prior years, SEPTA’s costs fluctuated, as the graph demonstrates. The cost per passenger trip is impacted by a system’s ability to attract riders – in short, to fill the buses with passengers. Operating costs – including personnel – is a big factor in the cost per passenger trip.



Operating expense per vehicle revenue hour is another measure of transit system performance – in short, the operating costs per hour for a bus. Again, comparing SEPTA and PAT with the top 50 transit system averages shows how efficiently the systems operate. Operating costs per hour show the cost per vehicle – which would include the salary and benefits for the driver for one hour of service, maintenance, fuel costs, and all other costs associated with operating a bus in service for one hour. According to the most recent data available from 2004, PAT, SEPTA and the top 50 transit systems are comparable on this measure; costs per hour for a bus range from \$100.92 for PAT to \$104.80 for the average of the top 50 systems.



Finally, passenger trips per vehicle revenue hour combines the two previous measures to show a measure of efficiency. PAT – at 26.86 passenger trips per vehicle revenue hour – lags SEPTA (48.44) and the 50-system average (41.00) in this measure.

While the data only provide a glimpse of how Pennsylvania’s largest systems compare to each other and to the top 50 transit systems in the United States, the analysis makes it clear that operational issues including marketing, effective bus routing and other ways to improve ridership is a very important part of transit operations for large and small systems alike.

## Transportation Funding Project

### Transportation Funding in Pennsylvania

#### *Public Transit and Road and Bridge Programs – An Overview*

A portion of the revenue goes directly or is passed along to local government for maintenance of local roads and bridges. The 2006-2007 funding for local roads and bridges is expected to be roughly \$387 million dollars. Much of the funding for local governments is dedicated to particular programs such as bridge maintenance and its use is limited.

<b>Local Roads and Bridges Funding for 2006-2007 (in millions)</b>	
Local Road Maintenance and Construction	\$204.6
Supplemental Local Road Payments	\$5.0
Act 26 Local Road Maintenance	\$53.7
Act 3 Local Road Maintenance	\$37.6
Local Bridges	\$25.0
Highway Transfer – Restricted	\$3.8
Act 26 County Bridges	\$8.1
Highway Transfer – Annual Maintenance Payments	\$11.5
Payment to Counties – LFT	\$38.1
<b>Total Local Funding</b>	<b>\$387.3</b>

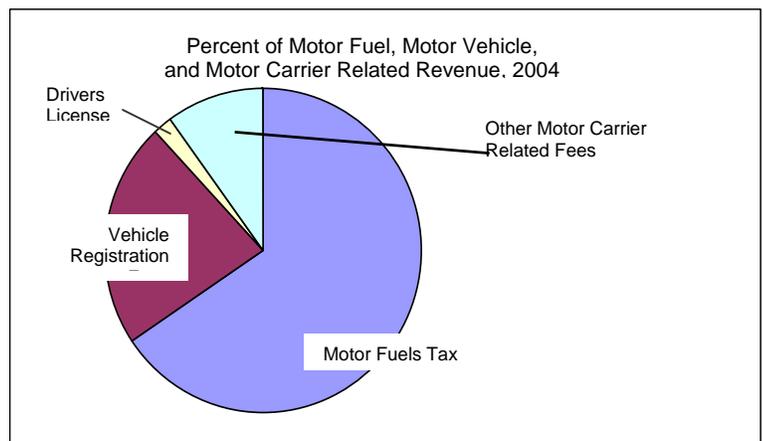
*Excluded from the remainder of the analysis is the state funding that is distributed to local governments for transportation.*

Although funding for highways and bridges is strongly segmented from funding for public transit, insight can be gained by looking at the total state transportation package, just as it is useful to look at transportation policies as a whole system. State financing of transportation uses a combination of taxes, fees and federal funding. Funding for highways and bridges is channeled through the Motor License Fund (MLF), a separate fund using dedicated sources of revenue. State funding for public transit relies on non-dedicated sources in the state's General Fund.

#### *Revenue sources*

State sources of revenue for transportation now totals over \$5.5 billion annually, versus \$3.4 billion in FY 96-97. The state uses this revenue for all types of transportation, including roads and bridges, public transit, and railroads. The sources of revenue are varied and include special transportation-related taxes and fees such as vehicle registration, motor fuels taxes, and tire disposal fees as well as broad-based tax sources such as the state sales and use tax and other General Fund sources.

The largest single pot of money for transportation is the MLF, which gets its funds primarily from various taxes on motor fuels and drivers' licenses and vehicle registrations. The MLF generates about 41 percent of the money spent on transportation. Restricted revenues provide about 18 percent. Most restricted revenues consist of special taxes dedicated to a particular purpose; for example, portions of the Oil Company Franchise Tax (OCFT) are restricted to being spent on highway maintenance and construction, and a

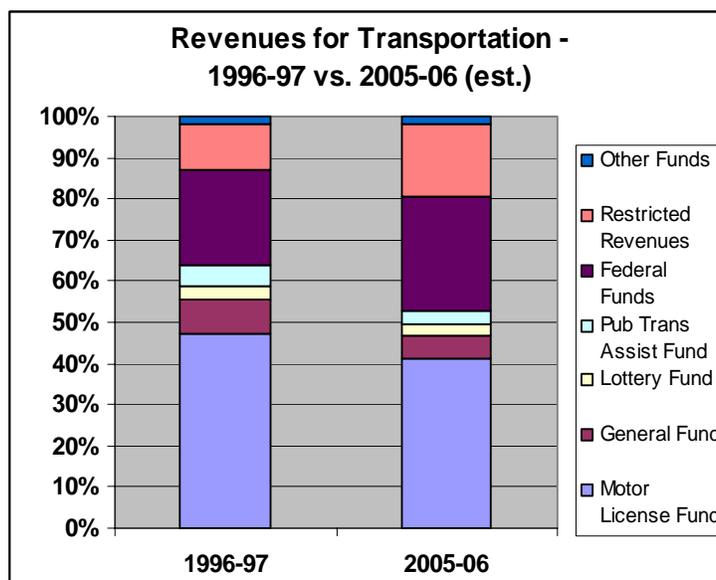


## Transportation Funding Project

portion of the state sales and use tax can be used only to fund public transit activities. The federal government supplies another 28 percent, while the general fund kicks in 6 percent as part of its overall budget; a portion of proceeds from the State Lottery are used to pay public transit for older Pennsylvanians.

### Revenue Growth Rates

The pace of revenue growth for transportation in Pennsylvania trails the growth in revenues for the General Fund over the last ten years (62.4% vs. 69.0%) and particularly trails recent growth in operations, materials and maintenance costs in transportation industries, which have been reported to be as high as 9-17 percent per year in recent years. The primary reason is the slow growth of many of the state imposed taxes and license fees in the MLF which is reserved for bridges and highways and the state contributions to public transit from the General Fund and Public Transit Assistance Fund. Growth in funding from the Lottery has lagged as well. Partially making up for those lower growth rates is the significantly higher contribution of the federal government to state transportation programs and restricted revenues.



The chart below illustrates the changes in each of the major revenue sources for transportation:

Ten Year Increase in Revenues for Transportation				
	Fiscal Year 1996-97	Fiscal Year 2005-06	Dollar Increase	Percent Change
Motor License Fund	\$1,609,129	\$2,265,893	\$656,764	40.8%
General Fund	\$278,953	\$325,332	\$46,379	16.6%
Lottery Fund	\$113,509	\$153,435	\$39,926	35.2%
Pub Trans Assist Fund	\$168,592	\$174,352	\$5,760	3.4%
Federal Funds	\$783,759	\$1,519,083	\$735,324	93.8%
Restricted Revenues	\$376,754	\$983,274	\$606,520	161.0%
Other Funds	\$66,811	\$95,541	\$28,730	43.0%
<b>Total All Funds</b>	<b>\$3,397,507</b>	<b>\$5,516,910</b>	<b>\$2,119,403</b>	<b>62.4%</b>

As a result of the varying rates of growth in each major source of revenue, the relative dependence on each source differs now from ten years earlier. The chart illustrates how those proportions have changed over the past ten years.

### Funding State Highways and Bridges

The State Constitution requires that “All proceeds from gasoline and other motor fuel excise taxes, motor registration fees and license taxes, operators’ fees and other excise taxes imposed on products used in motor transportation after providing therefrom for (a) cost of administration and collection, (b) payment of obligations incurred in the construction and reconstruction of public highways and bridges shall be appropriated by the General Assembly to agencies of the state or political subdivisions thereof, and used solely for construction, reconstruction, maintenance and repair of and safety of public highways and bridges....”

## Transportation Funding Project

To accommodate this mandate, the General Assembly created the MLF as the recipient of a significant portion of Pennsylvania's state generated dollars for transportation and the sole source of state generated funds for highways and bridges. Therefore, the ability to fund highways and bridges is tied to the success of those sources only, unlike many other programs run by the state that have access to several broad-based sources of revenue such as the personal income tax and the sales and use tax.

### *Revenue Sources – Highways and Bridges*

State government derives the bulk of the revenues used to finance highways and bridges from a set of taxes and fees imposed on transportation-related activities. The following summarizes the major contributors:

- Liquid fuels taxes consist of the various cents-per-gallon taxes on gasoline and other motor fuels and the Oil Company Franchise Tax (OCFT), which uses the price of fuels as a tax base rather than the number of gallons. The present rate of tax is 12 cents-per-gallon for liquid fuels tax and 153.5 mills for the OCFT. Taxes on motor fuels provide the most revenue, 40 percent of the total.
- Driver's licenses and vehicle registration fees are imposed on resident drivers and owners of vehicles registered in Pennsylvania. Fees were last increased in 1997.
- Restricted revenues consist of a number of special set-asides of revenues for specific purposes as a result of past legislative acts. These include parts of the OCFT not counted as liquid fuels taxes and are dedicated in specific parts of the overall tax rate to maintenance, capital projects, bridges, municipalities, and county or forestry bridges.
- Federal funding plays a significant role in funding highways and bridges, providing 34 percent (mostly from federal taxes on motor fuels) of total funding. The federal government targets most of these funds to construction and reconstruction.
- Augmentations include a variety of special highway and bridge related fees and other receipts received by PennDOT. The fee paid for a driver's license picture is one example. They represent only 1 percent of all revenues for highways and bridges
- The Commonwealth also receives other revenues that are used to fund highways and bridges. While this group is diverse, as a total it is a healthy addition to the overall pot. The largest pieces are vehicle code fines, interest on securities, and the sale of inspection stickers.

### *Revenue Growth Rates – Highways and Bridges*

The net funding for highways is the result of various sources yielding different growth rates over time. The table below shows the ten-year growth rates for each source of funding for highways and bridges.

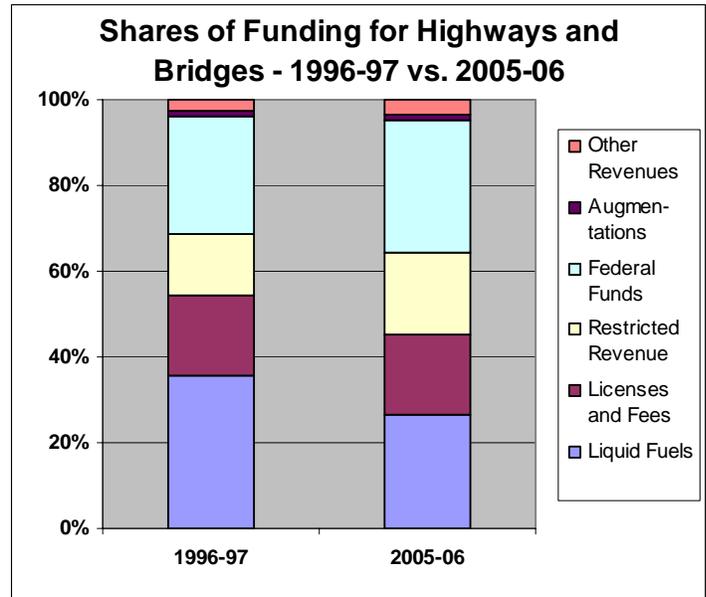
<b>Ten-year Increase in Revenues for Highways and Bridges</b>				
	<b>Fiscal Year 1996-97</b>	<b>Fiscal Year 2005-06</b>	<b>Dollar Increase</b>	<b>Percent Change</b>
Liquid Fuels Taxes	\$1,011,427	\$1,226,095	\$214,668	21.22%
Licenses and Fees	\$519,578	\$877,813	\$358,235	68.95%
Restricted Revenues	\$403,798	\$898,763	\$494,965	122.58%
Federal Funds	\$770,176	\$1,442,810	\$672,634	87.34%
Augmentations	\$38,383	\$51,163	\$12,780	33.30%
Other Revenues	\$78,124	\$161,985	\$83,861	107.34%
<b>Total</b>	<b>\$2,821,486</b>	<b>\$4,658,629</b>	<b>\$1,837,143</b>	<b>65.11%</b>

## Transportation Funding Project

Growth in revenues from liquid fuels taxes has been somewhat less than the rate of inflation (21.2% vs. 24.5%). Without the run-up of gasoline prices, up 68.5 percent from 1996 to 2005, the growth rate of liquid fuels tax receipts would be significantly lower. For example, by excluding the OCFT from the liquid fuels tax totals, the ten-year growth rate would have been reduced to 12.8 percent, about half the rate of inflation.

The increase in the amount of funds received from drivers' licenses and vehicle registration fees is higher than the average for all highway and bridge funding. However, typical year-to-year growth rates are much lower. Half of the ten-year increase in revenues from licenses and registration fees occurred in one year – 1997 – when rates were increased.

As a group, restricted revenues increased by 122 percent in the past ten years. As noted above, the major driver of the increase is the rapid increase in oil prices inflating receipts from the OCFT.



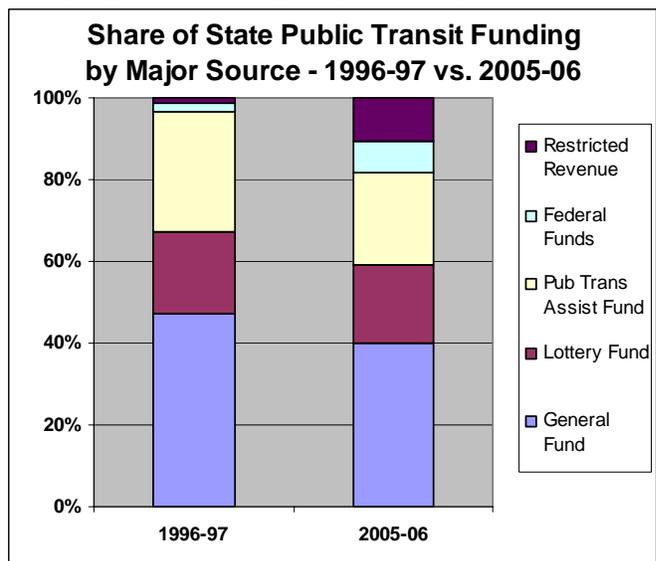
Federal funds have not only increased at a rate faster than average and faster than inflation, but the total increase in dollars is the largest of any revenue category. While significant compared over ten years, the year-to-year increases have been inconsistent. As shown on the graph, the make-up of the mix of revenues for highways and bridges has changed over time.

Taxes on liquid fuels (liquid fuels plus restricted receipts) remain the largest portion of revenue but that share has declined. Federal funding has taken up much of the slack.

### *Funding Public Transit*

State funds for public transit come from sources completely separate from highway and bridge funds. For the most part, they don't rely on transportation-related activities but compete for general revenues in a manner similar to most other state-administered programs or are dedicated from other non-transportation sources.

State generated revenues used for public transit consists of a collection of disparate sources. The General Fund provides the most money. Once the state budget for the General Fund sets the amount, a formula that considers historical funding levels, farebox revenues, and passenger miles determines the amount each of the largest systems receive. The General Fund public transit appropriation competes with most other major state programs such as education and public welfare.



The Public Transit Assistance Fund (PTAF) contributes the second largest share. The PTAF gets its money from a dedicated portion of the state sales

## Transportation Funding Project

and use tax (0.947%) and the imposition of fees on the sale of new tires and a motor vehicle lease tax fee. Public transit also receives a separate 1.22 percent of the sales and use tax that is channeled to transit agencies through PennDOT. However, this dedicated tax is limited to \$75 million per year.

The Lottery Fund provides funding to reimburse public transit agencies for shared rides and free transit for older Pennsylvanians. Each program is reimbursed based on the fare and number of riders.

Federal funds flowing through PennDOT are used for both capital and operating purposes. However, these totals don't include another \$500 million in federal subsidies received directly by public transit agencies.

### *Revenue Growth Rates – Public Transit*

Total state revenues for public transit activities have risen by 37.2 percent, which is higher than general inflation for the ten-year period. Federal funding and restricted revenues represent the major reason for the percentage increases. The increase in restricted revenue is due almost entirely to the introduction of the set-aside of 1.22 percent of the sales and use tax (capped at \$75 million) for public transit in 1997. The formula-driven General Fund contribution has grown little. As a result, the relative contributions to public transit funding have changed over the past ten years. The graph above illustrates the differences.

<b>Ten-year Increase in Revenues for Transit</b>				
	<b>Fiscal Year 1996-97</b>	<b>Fiscal Year 2005-06</b>	<b>Dollar Increase</b>	<b>Percent Change</b>
General Fund	\$270,924	\$312,738	\$47,660	15.4%
Lottery Fund	\$113,509	\$153,435	\$39,926	35.2%
Pub Trans Assist Fund	\$168,592	\$174,352	\$5,760	3.4%
Federal Funds	\$13,583	\$61,949	\$62,690	356.1%
Restricted Revenue	\$6,186	\$83,511	\$78,325	1250.0%
Total	\$572,794	\$785,985	\$234,361	37.2%

The state share of funding has declined as a portion of the total revenues package. Not only has the General Fund share declined, but other revenues supported by general revenue sources such as the sales and use tax now makes up a smaller part of the package. Federal funds have increased more in proportion to the total.

### *Transportation Funding in Pennsylvania – Analysis and Observations*

An analysis of Pennsylvania's revenue structure for transportation provides some perspective on the performance of individual sources. It also illustrates some of the pitfalls that should be avoided in order to develop a revenue structure that is predictable, stable, and sufficient for future transportation needs.

The highway and bridge system is reliant on dedicated sources of revenue – primarily user fees and taxes such as motor fuels taxes and vehicle registration and use fees. The primary sources of revenue for highways and bridges are flat fees or fuel taxes imposed on a cents-per-gallon basis, making the dedicated revenue stream a flat or low-growth stream that historically has not kept pace with General Fund growth or inflation indexes. Also, revenues for highways and bridges come from dedicated sources, which means the revenue cannot be diverted to other projects or programs; however, it also means that money from other sources will not likely be used for highways and bridges, although it is not prohibited.

The role of the federal government plays in financing highways and bridges has increased over time. To a large extent, this source is out of the control of Pennsylvania state and local governments, leaving Pennsylvania at the mercy of the federal government for the foreseeable future. In part because of the slow growth of federal motor fuels tax revenue, many experts predict some rough times in the coming years,

## **Transportation Funding Project**

when it comes to the federal government's ability and willingness to maintain and grow fiscal assistance to the states.

Unlike revenues for highways and bridges, state government financing for public transit relies entirely on non-user sources, often the same broad based taxes that finance the bulk of general state government programs and operations. While the dedicated sources such as the dedicated portion of the sales and use tax grow over time, discretionary state sources for public transit as a whole haven't increased at the same rate. As a result, transit operators have little control over the funds they will receive from state government, their primary source of funding – and little ability to predict future funds and plan accordingly. The share of funds from the General Fund is a product of competition with other programs. Relying on the political process for funding has proven to be a losing proposition for public transit when compared to the average for all General Fund programs.

## **Transportation Funding Project**

### **Transportation Funding in Benchmark States**

The following chart offers detail about the source of funding for public transportation and road and bridge programs in the benchmark states:

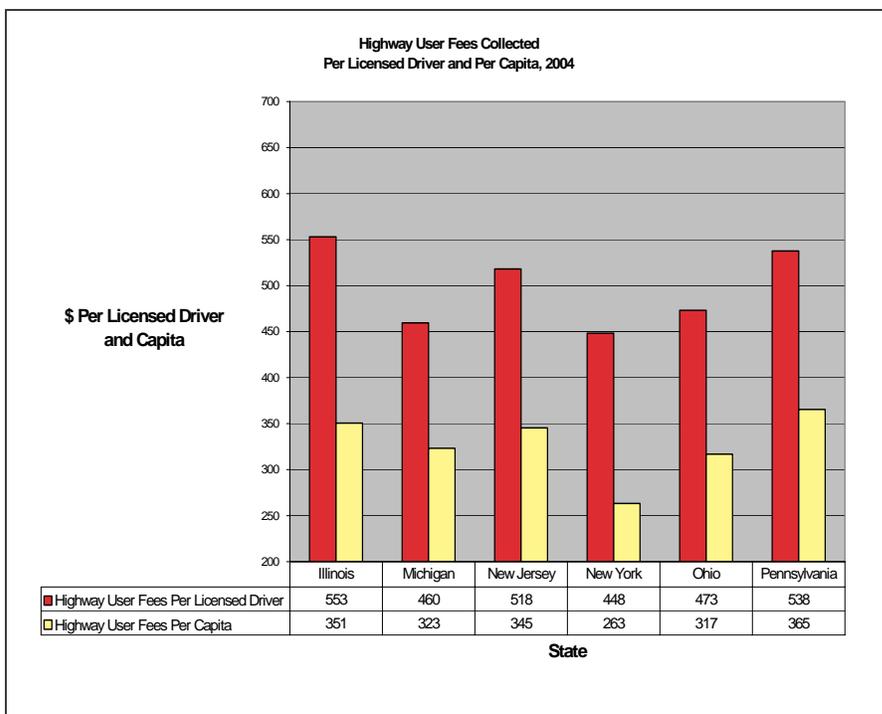
**Transportation Funding Project**

State and Local Funding Sources for Transportation (2004) Public Transportation and Roads/Bridges - Benchmark States												
	Pennsylvania		Illinois		Michigan		New Jersey		New York		Ohio	
Fund Source	Roads and Bridges	Public Transportation										
Toll Revenue	Yes		yes		yes		yes	yes	yes	yes	yes	
Bond Proceeds	Yes											
Farebox collections		yes										
State Gasoline Tax (and Oil Company Franchise Tax)	Yes		yes		yes	yes	yes	yes	yes		yes	
State Motor Carrier Tax	Yes		yes		yes	yes	yes		yes	yes	yes	
State Motor Vehicle Registration Fees	Yes		yes		yes	yes	yes		yes	yes	yes	
State Tire Tax		yes										
State Petroleum Business Tax										yes		
State Motor Vehicle Lease/Rental Fees		yes										
State Corporate Franchise Tax										yes		
State Long Lines Tax										yes		
State Public Utility Realty Tax		yes										
State Sales Tax		yes										
State Lottery Revenue		yes										
State Casino Revenue								yes				
State General Fund Appropriations		yes	yes		yes		yes		yes		yes	yes
Local Sales Tax				yes						yes		yes
Local Property Tax	yes			yes		yes				yes		yes
Local Income Tax												yes

## Transportation Funding Project

### State and Federal Funding

When evaluating the cost of transportation programs, it is useful to evaluating the cost – in terms of user fees collected– per person or per vehicle mile traveled (VMT); this allows a comparison of costs across states. Among the benchmark states, Pennsylvania has the second-highest cost per licensed driver, nearly \$550 of user fees, coming in just below Illinois and just above New York. That picture changes with cost per capita; based on the 2004 data, Pennsylvania has the highest cost per capita at more than \$350 per person. The chart shows highway user fee per licensed driver and per capita, based on Federal Highway Administration data.



The highway user fees per 1,000 VMT tells a similar story. Among the benchmark states, Pennsylvania's cost per 1,000 VMT is slightly higher than that of both New Jersey and Illinois, at \$42 per 1,000 VMT. Ohio and Michigan have much lower cost per 1,000 VMT at \$33 and \$32 respectively.

There are many similarities in how states fund transportation. Generally, highways and bridges are funded mainly through user fees, including federal and state motor fuels tax revenue and vehicle registration fees. The table below shows revenue sources for state highway and bridge programs. The data are from federal sources and therefore are different than the state-generated data discussed in the previous section.

<b>Revenues Used By States for Highways and Bridges from 1999 – 2004 Five-Year Average By Percentage of Total Annual Receipts</b>							
	<b>Motor Fuel Taxes</b>	<b>Motor Vehicle and Motor Carrier Taxes</b>	<b>Road and Crossing Tolls</b>	<b>Misc</b>	<b>Bond Proceeds</b>	<b>Payments from Federal Funds</b>	<b>Payments from Local Governments</b>
PA	32.0%	14.5%	9.8%	9.4%	9.2%	24.5%	0.4%
NY	18.0%	9.9%	15.8%	4.9%	28.9%	22.2%	0.3%
NJ	7.0%	7.0%	12.2%	7.0%	39.7%	27.1%	-
MI	34.3%	27.2%	1.1%	8.3%	4.3%	23.5%	1.4%
OH	41.7%	16.8%	5.3%	3.1%	7.6%	24.2%	1.4%
IL	29.7%	25.8%	9.4%	3.2%	9.1%	21.8%	1.0%

## Transportation Funding Project

### Motor Fuel Taxes

From 1998 to 2004, motor fuels taxes were the main sources of highway funding for half the states, including Pennsylvania. In most cases, motor fuels taxes are charged as a per-gallon tax and are not pegged to any inflationary index.

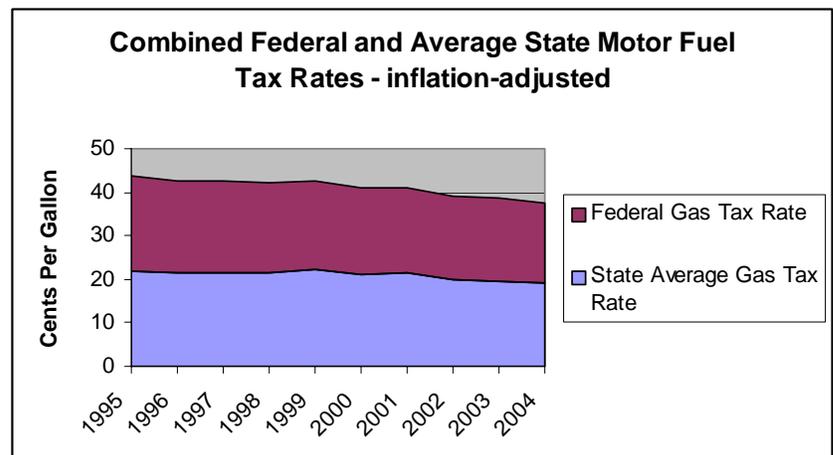
The federal motor fuels tax is collected on a cents-per-gallon basis. The funds from the motor fuels tax are re-distributed to states based on formulas that include total miles of Interstate Highway, population, growth, conditions of road surfaces, and more. It's a complicated formula that results in 'donor states' – which receive less back in federal funds than they are paid in the form of federal motor fuels taxes – and 'recipient states' – which collect more than they pay. Pennsylvania has been a 'recipient state,' although the federal government has made a concerted effort in recent years to bring the formula more in line with what states pay in the form of motor fuels taxes to the federal government.

The federal motor fuels tax rate - like the motor fuels tax rate in most states - is not pegged to inflation, so despite the increased price of gas, the motor fuels tax is experiencing slow growth, around 1.4 percent annually. This rate doesn't keep up with inflation – and certainly doesn't keep up with the escalating costs of construction materials and total construction costs, which have increased as much as 9-17 percent or more annually in recent years, according to industry reports. Due to these cost escalations and general inflation, the purchasing power of the revenue from most motor fuel taxes goes down, and as vehicles become more fuel efficient, fewer gallons are sold per mile driven; Therefore, despite an increase in VMT, there has been a decline in the *purchasing power* of motor fuels tax revenue.

In Pennsylvania, the total state taxes paid at the pump historically has been more responsive to inflation and changes in the price of gasoline and other motor fuels. Annually, the OCFT is adjusted according to the price of oil. However, the OCFT includes a cap, and that cap has been reached. Without a legislative change to raise the cap or remove it altogether, the expected growth of all motor fuels tax revenue, including the OCFT, in Pennsylvania is the same bleak 1.0-1.5 percent per year, which is not sufficient to address current demands for services like road and bridge maintenance and repair and new capacity development – and doesn't begin to address transit needs because the use of these funds is constitutionally limited to roads and bridges.

The chart – which is adjusted for inflation using the Consumer Price Index - shows the dwindling power of the motor fuels tax as a revenue source, using the average state motor fuels tax and the federal motor fuels tax combined.

While the motor fuels tax may be preferred from an environmental standpoint – in terms of encouraging movement toward cleaner, more fuel efficient vehicles – it does poorly on other measures. It only partially accounts for wear and tear on roads (through the relationship between vehicle weight and fuel consumption) and is a dwindling source generally because it is not indexed to inflation - but to consumption.



## Transportation Funding Project

The table below shows the current motor fuels tax rates in each of the benchmark states.

<b>Motor Fuel Excise Tax Rates – Cents Per Gallon (Jan 2006)</b>									
	<b>Gasoline</b>			<b>Diesel</b>			<b>Gasahol</b>		
	Excise	Additional	<b>Total</b>	Excise	Additional	<b>Total</b>	Excise	Additional	<b>Total</b>
<b>IL</b>	19.0	1.1	<b>20.1</b>	21.5	1.1	<b>22.6</b>	19.0	1.1	<b>20.1</b>
<b>MI</b>	19.0	-	<b>19.0</b>	15.0	-	<b>15.0</b>	19.0	-	<b>19.0</b>
<b>NJ</b>	10.5	4.0	<b>14.5</b>	13.5	4.0	<b>17.5</b>	10.5	4.0	<b>14.5</b>
<b>NY</b>	8.0	15.9	<b>23.9</b>	8.0	14.15	<b>22.15</b>	8.0	15.9	<b>23.9</b>
<b>OH</b>	28.0	-	<b>28.0</b>	28.0	-	<b>28.0</b>	28.0	-	<b>28.0</b>
<b>PA</b>	12.0	19.2	<b>31.2</b>	12.0	26.1	<b>38.1</b>	12.0	19.2	<b>31.2</b>

Since 1997, 14 states including Pennsylvania have increased their motor fuels taxes an average of 4 cents. Other states – including Connecticut, Minnesota, South Carolina, and Arkansas – lowered the motor fuels tax or repealed increases. A handful of states – though none of the benchmark states – have included an inflationary increase in the cents-per-gallon tax in order to help this dedicated revenue source keep pace with rising costs. With the public’s sensitivity to the periodic spikes in the price of gasoline, mention of a motor fuels tax increase is a volatile political issue – one that requires strong stomachs and even stronger bipartisan cooperation. Most experts agree that politically and fiscally, a motor fuels tax increase is not the ‘silver bullet’ that will solve states’ problems with financing transportation. Even a motor fuels tax linked to inflation will lag as motor vehicles become more fuel-efficient.

New York and Michigan are among the states that use a gross receipt sales tax on motor fuels in addition to a fuel excise tax to capture revenue growth through inflation. However, in Michigan those funds are used for other programs, so the revenue growth is not used for transportation costs.

### *Motor Vehicle Registration Fees*

Registration fees prove to be a sizeable source of revenue for many states. The funds generally are dedicated to transportation-related programs – mostly road and bridge maintenance, construction, and operations. In some cases – New Jersey and Michigan are two examples – the funds are shared among other transportation programs such as mass transit, public busing services, and rail.

Reliance on motor vehicle carrier and license fees varies from state to state. The US average from 1999 to 2004 is 15.9 percent of total highway revenue coming from such fees. In the benchmark states, the proportion varies from a low of 7 percent in New Jersey to 27.2 percent in Michigan. In Pennsylvania for the same time period, vehicle registration fees made up roughly 14.5 percent of all highway revenue, slightly less than the national average.

Vehicle registration fees vary greatly from state to state, as do the rules and guidelines for the various fees. But generally, motor vehicles are classified into four groups: automobiles, single-unit trucks, truck tractors, and semi-trailers. The registration fees for each vehicle type are generally based on a number of interwoven elements, including weight, place of usage, age, and the vehicle’s total number of axles. Each state uses some combination of these elements to determine its unique motor vehicle registration rates.

- **Weight:** Generally, the heavier and newer a vehicle is and the more axles it has, the more expensive it is to register. Most states have developed specific weight groups that help determine the registration fee.

## Transportation Funding Project

- Vehicle age: Many states have developed a similar grouping strategy to evaluate automobile age, with older cars costing less to register than newer ones.

Some states opt for a more simplistic approach, electing to employ a flat fee for a particular vehicle type. For many states, this is the approach taken for automobiles, which undoubtedly have smaller weight fluctuations than trucks and trailers and therefore do not require a weight-based fee. Other states, however, use complex measures to determine vehicle registration fees. Not only do states use different bases to determine their motor vehicle registration fees, they differ dramatically in the total amount collected for a typical vehicle within each classification.

Pennsylvania's basis for vehicle registration fees is much more simplistic and straightforward than most states' registration determinations. Since 2001, the state has charged a flat rate for automobile registration and has employed a progressive gross weight scale to determine the registration fees for single-unit trucks, truck tractors, and semi-trailers.

Michigan's registration program is an important revenue source. It accounts for more revenue than the motor fuels tax in Michigan – making up roughly one-third of the total state transportation revenue in the current budget year. Michigan has a unique method of assessing its automobile registration fees. The state uses a combination of empty and gross weight groupings to determine registration fees for single-unit trucks, truck tractors, and semi-trailers. And Michigan utilizes the manufacturer's suggested retail price (MSRP) to assess registration fees.

### *Toll Roads and Toll Lanes*

In the 1950s and 1960s, prior to and alongside the creation of the federal Interstate Highway program, toll roads were a key component of some states' road systems. Nearly half of all states currently use some kind of toll system on certain state or local roads and bridges. With the growth of the Interstate system, tolling began to decline. But in the 1990s there was a resurgence of tolling as a way to address a number of transportation ills including concerns about economic growth rates, urban mobility and congestion, as well as the aging of the Interstate infrastructure and the high cost to repair it. Improved technology makes tolling a more efficient, safe and dynamic tool. Some examples of the possibilities for tolling include charging higher toll rates during peak use or using tolling lanes to reduce congestion.

In 2004, tolling accounted for roughly 5 percent of the total state revenue sources nationally, according to a 2006 GAO report. Types of tolling include: statewide turnpike authorities, regional toll authorities, public-private partnerships, and private toll roads. Historically, toll roads have been self-contained authorities, meaning revenue cannot be shared with other programs, even transportation-related.

Tolling can be used to reduce congestion through a variable-pricing mechanism. By charging more during peak periods or using toll lanes along with HOV lanes (or creating HOT lanes – high occupancy and toll lanes), tolls provide a revenue source; but perhaps more importantly, they create incentive to change driving behavior such as use of other roadways, staggered work times, use of public transportation or carpooling. With some flexibility from the federal government regarding tolling interstate lanes, more states are looking toward tolling as a solution to congestion and minimal revenue growth. Tolling related programs authorized in federal transportation legislation include value pricing by using tolls to price congestion, use of toll revenue to reconstruct highways, use of express lane and HOV/HOT tolling, and use of tolls to construct new highways.

Historically, there has been a prohibition against tolling on roads built with federal highway funds. However, recent years have brought about special programs that allow specific tolling programs on some roads and sections of road built with federal funds. Despite the changing federal rules regarding tolling,

## Transportation Funding Project

there still are challenges. One primary concern that emerges in discussions of tolling existing roads is that tolling is a form of double taxation. That is, taxes were used to build the road, and tolling on top of the taxes already paid is, arguably, double-taxation. A counter argument, however, is that new tolls on an existing highway can be considered a payment for ongoing maintenance and improvement, especially if all toll revenue is dedicated to improvement and maintenance of the infrastructure for which the toll was collected. Other challenges are based on different issues of fairness. Tolling does not consider one's ability to pay. Congestion pricing and other use of tolling may leave those with the least ability to pay – and the least ability to change their driving behavior through flexible starts or telecommuting – stuck in congested roads.

### *Public-private partnerships*

With encouragement from the federal government, a wide variety of public-private partnerships – or PPPs – have emerged in the design, construction, maintenance, operation and financing of transportation facilities during the past five years. The possibilities for involving the private sector in the transportation process are almost limitless. While a few large-scale concessions for toll facilities involving hundreds of millions, or even billions, of dollars bring attention to the growing phenomenon of public-private partnerships (or PPPs), many less spectacular opportunities exist for attracting private resources to help meet transportation needs.

The different types of PPP agreements relating to designing, building, maintaining and, in some cases, operating transportation projects are too numerous and diverse to set forth in detail. However, they share several potential advantages:

- The ability of the private sector to marshal appropriate specialized resources rapidly and efficiently in the design and construction stages.
- The private sector's diversified knowledge and awareness of new methods in design, construction, operations and maintenance.
- The ability of private investors to identify creative financing solutions to expedite projects, their acceptance of more aggressive levels of debt in PPPs than in public projects, and, in some cases, their contribution of equity to the transaction.
- The cost savings, as well as avoidance of higher future construction costs, that result from more rapid implementation of projects.
- The willingness of private entities to assume responsibility for completion of projects on time and within budget ("risk transfer").

The number of firms able to compete for transportation infrastructure contracts under PPP legislation is likely to become more limited as the scope of work expands from design only or construction only to design-build or design-build-operate-maintain. As a practical matter, only very large firms will have an opportunity to compete successfully when creative financing is needed, a toll concession is involved, or the private partner is required to assume operating responsibility. In fact, many major PPP construction projects and most of the concession agreements in the United States have been awarded to large foreign investment groups, some using newly created American subsidiaries.

Although private parties assume contractual responsibility for satisfactory completion of PPP projects, public officials must provide proper oversight. In the absence of strict accountability, the involvement of the private sector will not automatically result in cost savings or a satisfactory product. Boston's "Big Dig" serves as an example of a public authority blamed for lax control over the work of private contractors.

## Transportation Funding Project

The following provides a brief overview of popular PPPs, including lump-sum payments for long-term leases of assets and new construction of toll facilities.

- Lump-sum payments by private investors for rights to future revenue collection on existing toll facilities is one of the more publicly debated PPP options. Since January 2005, when the City of Chicago received a lump-sum payment of \$1.8 billion from an international consortium to lease the 7.8-mile Chicago Skyway for 99 years, transportation officials have taken notice of the potential for “monetizing” existing toll facilities. Interest in concession agreements increased still further when the State of Indiana obtained \$3.85 billion for a 75-year lease of the Indiana Toll Road by the same Spanish-Australian consortium.

Based on the Chicago Skyway and Indiana Toll Road examples, concession agreements for existing toll facilities in Pennsylvania could provide the state government with billions of dollars to improve deteriorating roadways and build transportation projects that have languished for lack of funds. By accelerating reconstruction and new construction of Pennsylvania’s highways and roads, funds from private investors – who would advance billions of dollars today for the right to collect future toll revenues – might well save the state hundreds of millions of dollars in construction costs that would otherwise be deferred indefinitely.

While the new work progresses, the state government would receive tens of millions of dollars in interest on the lump-sum concession payment. At the moment, worldwide investors have demonstrated intense interest in gaining financial control of a proven revenue stream generated by public facilities in the world’s largest economy. This would seem to be an excellent time for Pennsylvania to explore the pros and cons carefully.

The larger the amount of the lump-sum payment to the state from private investors, the more money Pennsylvania would have available for funding transportation projects, thereby improving conditions while saving construction costs and obtaining interest revenue. At the same time, as the amount of money received by the state increases, the amount of toll revenue required to pay off the private debt financing and compensate the shareholders will need to rise on a roughly proportionate basis.

It’s worth noting that PPP investors expect to be paid back handsomely. Users of Pennsylvania’s toll roads and bridges will be expected to contribute enough money in tolls over time to enable the investors to recover the original lump sum, with interest on borrowed funds, and also earn a rate of return commensurate with the risk inherent in a commitment spanning several generations.

Private investors assume a risk that future tolls will not be sufficient to meet the repayment schedule for borrowed funds or that the ultimate rate of return to equity shareholders will be inadequate. However, the concession agreement may give the private partner considerable latitude to raise tolls well above current levels.

- The Indiana Toll Road concession agreement allows an increase of almost 80 percent on tractor-trailer tolls between 2006 and 2010. Although tolls for passenger cars and other two-axle vehicles cannot be changed for the four-year period, an increase of at least 8.2 percent is permitted for the fifth year. Thereafter, the agreement allows tolls to rise by 2 percent annually – or at the rate of inflation in consumer prices or the rate of growth in the per-capita Gross Domestic Product if either is greater than 2 percent.
- The Chicago Skyway concession agreement was based on an immediate 25 percent toll increase for passenger cars and other two-axle vehicles. Although truck tolls were unchanged for off-peak travel (8 p.m. to 4 a.m.), the charge for peak travel was raised by 40 percent.

## Transportation Funding Project

Between 2008 and 2017, tolls may rise in accordance with a specified schedule or an increase in the Consumer Price Index. Beyond 2017, the concessionaire may boost tolls annually by the greater of 2 percent or the percentage rise in the CPI or nominal GDP per capita.

In the event that toll revenue ultimately proves to be insufficient to maintain the viability of the private operating entity, the state would reclaim responsibility for the facility. Because the toll rate needed by the state to support basic operations and maintenance would be far less than the rate required by private investors to recover the amount of funds they have advanced, the state would presumably be able to cover current costs by means of the established toll schedule.

Concession agreements that might provide lump-sum payments to the state raise two additional considerations: First, would a large bank balance cause PennDOT and regional transportation planning organizations to become less careful with available funds? Might the state government be tempted to divert a portion the windfall to purposes other than transportation?

Second, it is reasonable to ask why, instead of selling public assets (or leasing long-term), tolling authorities do not simply raise tolls to the levels that private firms will require to achieve a reasonable return on investment. Generally, government agencies are more reluctant to collect more money than needed to pay debt service, maintain the infrastructure and facilities, and make gradual resistance. Also, the direct diversion of toll revenue to other transportation facilities is generally prohibited. Unless the expenditure would provide a direct benefit to the same transportation corridor – such as improvements to connector roads or the addition of light rail to relieve congestion. The primary incentive for a government to enter into a PPP agreement is the ability to monetize a public asset; that is, to obtain a large lump-sum payment that provides a source of funds for other purposes without issuing debt or raising taxes.

- Construction of new toll facilities by private investors for rights to future revenue collection is another PPP approach. The gradual erosion of the purchasing power of motor fuel taxes, coupled with the general unwillingness to increase the tax rate, has prompted many states to consider a policy that all new highway construction be self-funding. Tolls on the new facilities are ordinarily the sole or primary source of funds expected to compensate investors. However, some major transportation corridors are being designed to attract significant revenue from development fees or special assessments on adjacent property.

Early experience with PPP's in the construction of toll facilities in other states has been somewhat inconsistent. Nevertheless, even when the original financial plan and operating agreement have been flawed – causing temporary discomfort for both investors and public officials during a period of disappointment and reorganization – the projects have thus far demonstrated their fundamental viability. The Dulles Tollroad and Pocahontas Parkway, both in Virginia, and the State Route 91 HOT lanes in Orange County, California are examples of privately funded tolling to expand capacity.

- The first modern privately owned and operated toll road in Virginia, the Dulles Greenway, which extends 14 miles westward from the Dulles Toll Road in the Washington, DC metropolitan area, was opened in 1995. The original investment group defaulted on its long-term financing because traffic and toll revenue were much lower than expected during the first three years. However, as volume increased, debt was refinanced in 1999, new lanes were added, the partner responsible for operations and maintenance sold its 30 percent stake to other investors, and the toll agreement was extended from 40 years to 60 years. In late 2005, Macquarie Infrastructure Group, an Australian firm created by a major bank in that

## Transportation Funding Project

country for the purpose of acquiring PPP concession agreements throughout the world, purchased all of the outstanding equity interest in the toll road.

- Opened in 1995, the first High Occupancy Toll (HOT) lanes making use of variable pricing (also known as “congestion pricing,” “peak pricing” or value pricing”) were constructed for \$126 million in the broad median of State Route 91 in Orange County, California. Under Assembly Bill 680, enacted in 1989 to authorize as many as four private highway franchises as demonstration projects, a consortium of investors developed and initially operated the toll lanes designed to relieve traffic congestion in Orange County and provide more rapid access to the more distant suburbs in Riverside County to the east. The 10-mile right-of-way was leased to the franchise holders for \$1 per year, eliminating acquisition and demolition costs. Under the 35-year franchise agreement approved in 1990, tolls were not regulated, but a limit was placed on the rate of return to investors. A dispute involving a non-compete clause in the concession agreement soon arose, halting public plans to increase the number of free lanes of SR 91. In early 2003, the Orange County Transportation Authority purchased the toll lanes from the private investors for \$207.5 million and then issued revenue bonds totaling \$195 million to reimburse interim lenders. The toll lanes continue to carry traffic at high speeds, but as a result of the continued growth of Riverside County, the free lanes of SR 91 during peak commuting periods is now approximately 10 miles per hour.
- The Pocahontas Parkway, opened in 2002, was the first toll road constructed in Virginia following passage of the Public Private Transportation Act of 1995, which is widely referenced as a model for such legislation. This nine-mile segment of the loop around Richmond was completed under a design/build contract between the Virginia Department of Transportation and a private construction consortium, with financing organized through a “63-20 Corporation” (a not-for-profit ownership association created to issue tax-exempt bonds). Although construction of the \$324 million project was termed “a shining example of how a public-private partnership is supposed to work” by the National Council of Public-Private Partnerships in 2003, early toll revenue did not match expectations and default became imminent. In May 2006, VDOT reached a 99-year lease agreement with Transurban LLC, an Australian company that focuses on the long-term ownership and management of advanced electronic toll roads, to pay off all existing debt of the Pocahontas Parkway Association (the 63-20 Corporation). Also in exchange for the right to collect future toll revenue, the concessionaire agreed to finance and build a new Airport Connector (“subject to federal funding”), reimburse VDOT for expenses incurred in operating the Parkway, and assume responsibility for operations and maintenance. There is a further provision that Transurban will share revenue with the state government if certain rate-of-return targets are exceeded.
- Proposals by five competing private consortia to obtain a long-term lease from the Virginia Department of Transportation to operate the Dulles Toll Road – commuter lanes opened in 1984 parallel to the free Dulles Airport Access Road connecting with the privately operated Dulles Greenway – were rejected in May 2006. Despite one lump-sum private offer of more than \$1 billion and the promise of extensive improvements in exchange for future toll revenue, Governor Timothy Kaine instead signed a Memorandum of Understanding with the Metropolitan Washington Airports Authority, which will operate the toll lanes and commit all revenue in excess of operating costs to construction of rail transit and other corridor improvements. The MWAA has agreed to consider the previous private proposals within the context of the Authority’s plans. A recently proposed design change for the Metrorail extension has boosted construction cost estimates by \$200 million or more, raising new questions about the feasibility of funding multimodal transportation.

## Transportation Funding Project

Presumably, Pennsylvania can benefit from the lessons learned in other states. However, Timothy Kaine, the Governor of Virginia inaugurated earlier this year, recently told a Congressional committee: “If I can leave you with a single message today, it would be that no one size fits all. What works in Northern Virginia won’t work in Southwest Virginia, much less Indiana or Illinois.” He also noted “we believe that public-private partnerships, primarily through tolling, could address up to twenty percent of our long-term highway needs. However, we cannot, and should not, ignore the remaining eighty percent of our unmet needs.”

Though there are lessons to learn, because most of these partnerships are in the project planning stage or have begun to function only recently, evaluating their success and identifying best practices is not yet possible. Experience in other states thus far, however, demonstrates that careful analysis and ongoing monitoring of all aspects of PPP agreements and contractor performance can help to avoid unpleasant surprises for the sponsoring government entity. For example, optimistic bias in traffic and revenue projections is common, and private business relationships generally are less open to public scrutiny than government transactions. Although bondholders, insurers, and investors may pay a financial price for inaccurate estimates and projections of future performance, the ramifications for failed projects often are worse for the public who use the infrastructure and government officials who – fairly or not – often receive much of the public blame.

### *Use of Debt*

Like many states, Pennsylvania made liberal use of bonded indebtedness for transportation projects in the 1960s and 1970s, then experienced difficulty in funding new infrastructure needs in subsequent years because of the debt service burden. At this time, Pennsylvania is in a fairly conservative position relative to other states, with bond proceeds for transportation projects representing 9.2 percent of transportation revenues from 1999 to 2004 versus the national average of 12.4 percent. Nine states used bond proceeds to fund more than 20.0 percent of their total transportation budget during that period.

New Jersey is one of the benchmark states that is in the same position Pennsylvania was in during the 1960s and 1970s: in debt. Much of the Transportation Trust Fund, New Jersey’s equivalent to the Motor License Fund in Pennsylvania, now goes to pay debt service, essentially limiting new projects, capacity expansion, and even maintenance. Another perspective shows that New Jersey is reliant on bond proceeds, which total nearly 40 percent of the state’s total transportation budget.

In addition to traditional bonds and to assist states in expediting major highway projects, the federal government has authorized several programs to encourage borrowing.

- Grant Anticipation Revenue Vehicles (GARVEEs) permit long-term borrowing against federal funds to be received in future years. Under these debt financing instruments, federal transportation allocations are used to repay principal as well as cover interest charges and other costs related to the sale of an eligible bond issue. Since 1997, 14 states have issued GARVEE bonds, totaling nearly \$5 billion. Pennsylvania has not enacted enabling legislation to take advantage of GARVEE financing.
- Public transit agencies also are permitted to borrow against future federal funds – by means of Grant Anticipation Notes (GANs). Perhaps because the GAN procedure is somewhat more complicated and involves greater uncertainty regarding the amount of federal transit allocations than with GARVEE financing of highway projects, few GAN transactions have been completed. No GAN financing has been proposed in Pennsylvania.

## Transportation Funding Project

- As described by the U.S. Department of Transportation, “The Transportation Infrastructure Finance and Innovation Act of 1998 (TIFIA) established a new federal credit program under which the USDOT may provide credit assistance to major transportation investments of critical or national significance, such as intermodal facilities; border crossing infrastructure; highway trade corridors; and transit and passenger rail facilities with regional and national benefit.” TIFIA credit assistance, which is available to borrowers participating in PPPs for surface transportation, takes three forms: secured direct loans, loan guarantees, and lines of credit. The project cost must be at least \$50 million (or \$15 million for “intelligent transportation system projects”). Since the first TIFIA awards were announced in 1999, thirteen projects in ten states have been approved for TIFIA financing instruments totaling \$3.2 billion to facilitate \$13.2 billion in project investment. Pennsylvania has not authorized TIFIA financing.
- The Pennsylvania Infrastructure Bank was established in 1998 in response to federal legislation that authorized State Investment Banks (SIBs) and provided funds for SIB capitalization for the purpose of “project acceleration, economic development, and stimulation of private investment.” Under the new SAFETEA-LU program, states “may capitalize the accounts in their SIBs with federal surface transportation funds for each of fiscal years 2005 through 2009” in an amount equal to 10 percent of funds in the highway account and the transit account, as well as any funds made available for capital projects in the rail account. SIBs require a minimum match of \$20 from the state for every \$80 of federal funds used.

According to the 2004 Annual Report of the Pennsylvania Infrastructure Bank, “Most of the projects that are funded by the PIB are projects requiring a match to federal and state funds. The ability of the Bank to loan the local match has resulted in the acceleration of many projects that may have otherwise not been funded or would have been delayed.” The majority of PIB-funded road and highway loans are in the \$1 million to \$2 million range, while most of the PIB’s municipal bridge replacement loans involve \$200 thousand or less. As of June 30, 2005, PIB loans averaged approximately \$630 thousand, compared with the national SIB average loan of \$11 million. Six states have made extensive use of SIB financing, accounting for more than 90 percent of the national total; their average loan amounts are more than \$18 million.

Clearly, ascertaining the proper balance between the need for long-term capital investment in transportation infrastructure and a prudent level of borrowing to fund some of those assets over an extended period is an ongoing challenge. One perspective is that use of debt leads to abuse and over-reliance on borrowed funds, which must be repaid in the future. Others believe that use of debt to pay for assets with long lifespans makes sense.

It’s clear from interviews with stakeholders both within and outside of Pennsylvania that use of debt requires prudence and balance – but is worthy of consideration, given Pennsylvania’s relatively low reliance on debt. Long-term financing allows decision-makers to align the costs of a project with the use of the project, much like homeowners use traditional mortgages to purchase a home over time. All agree that a dedicated source to pay for any debt – whether through a federal program or a dedicated tax stream – should be identified and dedicated at the outset.

### *Sale/leaseback agreements*

Sale/leaseback agreements have been used by some transit agencies to accelerate the acquisition of rolling stock. Instead of issuing general obligation bonds, an agency purchases long-lived assets with temporary tax-exempt financing and resells them to a private party under an agreement to lease the equipment back for a certain period at a specified amount. Because the new private owner is able to deduct depreciation as an expense against revenue and thereby reduce taxable income, the up-front payment from the private

## **Transportation Funding Project**

firm is ordinarily sufficient to cover the lease payments over the term of the lease, plus a premium. In any case, a sale/leaseback agreement may enable the agency to make equipment purchases that would otherwise be deferred. Not only can an accelerated schedule enable the agency to avoid higher future acquisition costs, but newer busses and railcars may help to maintain or increase rider satisfaction and farebox revenue.

In a somewhat different financing arrangement, a lease/leaseback agreement, certain equipment purchased by a public agency is leased to an institutional investor, which, in turn, leases the equipment back to the agency. The long-term nature of the lease enables the investor to depreciate the property for federal income tax purposes, while a difference in the timing of payments between the two leases provides a financial benefit to the agency.

In certain cases, a sale/leaseback agreement for existing real estate may be used to generate up-front cash for capital improvements to those assets or for other purposes.

## **Regional Funding**

Recent research shows that there is an ever-increasing role of dedicated local or regional transportation taxes in funding transportation programs – both public transit and road and bridge programs. Generally, this shift represents new sources of revenue, which is added to the existing user fee/motor fuels tax structure in place federally and at the state-level. Though a local-option fuel tax is one of the revenue sources being used more often in recent years, most of the new local-option taxes are general taxes that are dedicated to transportation – including sales taxes, income taxes and property-related taxes such as mortgage recording taxes on the sale of houses.

Forty-six states use local (or regional) option transportation taxes to fund a variety of transportation-related programs. Such funds have been used for congestion control programs, road and bridge expansion and maintenance, and public transportation. Regional transportation taxes are appealing because they shift a portion of the responsibility for funding transportation closer to the people that benefit from highways, roads and public transit. In fact, among revenue options, regional transportation taxes and toll facilities are most favored by the general public in all but a few transportation regions throughout the country. During 2004, voters approved almost three-fourths of the ballot initiatives for regional transportation taxes throughout the nation.

State legislation to permit local or regional authorities to receive and distribute new, dedicated tax revenue for funding regional transportation would have to consider the reliability and growth potential of alternative revenue sources. Should roads and highways be funded by one dedicated regional source (such as a motor fuels tax or a VMT fee) and public transit funded by another (such as a sales tax or payroll tax)? Or should all regional transportation revenue go into a single fund that would permit regional authorities to address changing needs? Should the state offer an incentive (in the form of matching funds or some other tangible benefit) to encourage regions to provide new sources of revenue for their transportation projects? Would voter approval be required or could new taxes or fees be put into effect by elected municipal officials within the region? These are decisions with a far wider impact than transportation policy, and the decision is one that members of the legislature and administration must decide carefully.

The nature of such regional authorities, including the appropriate level of government and the basic composition of their boards will require legislative direction. There is general agreement among stakeholders that the municipal level is too small, as is the county level, and that a multi-county regional level would achieve the appropriate size and perspective on regional transportation needs. Only a few states provide regional taxing authority through the MPOs. Most states instead set up special purpose

## Transportation Funding Project

agencies, business districts, special transportation districts, or other regional entities.

The relationship between regional authorities and constituent municipalities regarding the collection of taxes or fees, as well as the selection of projects and the disbursement of revenue, will also need clear delineation. In addition, the respective planning and funding responsibilities of PennDOT and regional authorities with respect to projects funded by new revenue sources must be set forth in the enabling legislation.

With respect to encouraging regional funding of transportation, states have adopted a variety of approaches. Below are a few examples.

### *Missouri*

Since 1990, Missouri has authorized counties and municipalities to form non-profit Transportation Corporations to develop and provide partial funding for projects delayed by insufficient money in the state transportation plan. Through its Cost Saving Program, the Missouri Department of Transportation “commits up to 50 percent of project costs for projects not 100 percent funded by MoDOT but will be beneficial to the state highway system.” The first project approved under the 1990 legislation took advantage of a provision permitting tolling by Transportation Corporations and was constructed entirely with bond financing. Other projects typically involve voter-approved municipal sales taxes, together with direct county contributions, to obtain the local match necessary for a state contribution. In administering qualified projects, Transportation Corporations perform “many functions normally undertaken by the Missouri Highways and Transportation Commission and its staff.” Ultimately, “upon project completion and payment of all related costs,” title to the project is transferred to MHTC. Also eligible for MoDOT’s Cost Sharing Program are projects sponsored by Transportation Development Districts, which may be formed by interested residents or a local transportation authority through a petition to the court. Subject to voter approval, a TDD may impose a sales tax of 10 cents per \$100 of assessed valuation or a sales tax not to exceed 1 percent, as well as “levy special assessments” or collect tolls and fees “on appropriate highways and roads. Acceptable projects sponsored by TDDs also include railroads, light rail and other mass transit. Generally speaking, rural municipalities and counties have made use of Transportation Corporations, while TDDs have been created in both rural and metropolitan areas.

### *Washington State*

Under legislation passed in 2001 in the State of Washington, three counties formed a Regional Transportation Improvement District in the Seattle metropolitan area “to solve some of our most severe and pressing problems here at home – problems the larger statewide gas tax investment could never hope to solve.” The RTID may propose several revenue resources to voters for funding the regional transportation plan, including a sales and use tax of 0.1 percent (previously allowed up to 0.5 percent), a vehicle license fee of \$100 or less, a parking tax, a motor vehicle excise tax, a fuel tax, an employer excise tax, and vehicle tolls. Nevertheless, as described on one county website, development of a funding package to present to voters in the region has been stalled by two major issues: “The debate of the types of needed transportation investments has led to a polarization of views among those advocating either highway or transit improvements, creating a deadlock in decision-making” and “the draft list of projects being discussed by the RTID board is simply too large.” Consequently, in early 2006, the Washington legislature authorized creation of a new Regional Transportation Commission of nine members “to develop a proposal for a regional governing entity more directly accountable to the public, and to develop a comprehensive regional transportation finance plan for the citizens of the Puget Sound metropolitan region.” The new legislative act reduces the matching money to be contributed by local or regional sources (which

## Transportation Funding Project

may include the MPO, as well as a city, county, port authority or private entity) from one-third of project cost to 15 percent of the total amount. It also decreases the allowable sales and use tax from 0.5 percent to 0.1 percent, but provides that toll revenue, previously limited to funding construction and reconstruction of highways and roads, can be used to support operation, preservation and maintenance of toll facilities. Of particular significance is a provision in the legislation that “if a multicounty regional transportation district is not formed by December 1, 2007, through approval by the voters voting on a regional transportation investment plan,” then each of the three counties will be empowered to form its own transportation district.

### *Colorado*

In Colorado, officials in one county are proposing an increase in the regional sales tax to pay for construction of additional lanes on a major state highway, while the state department of transportation favors developing a PPP agreement to build toll lanes under the authority of the new Colorado Tolling Enterprise. Backers of the sales-tax increase insist that adding one free lane in each direction at comparatively low cost will reduce congestion, while CDOT officials assert that the more expensive alternative involving the construction of two toll lanes in each direction in the median of the existing highway will enable users to pay for the new facility, will greatly accelerate completion of the project, and is the only means of assuring rapid travel on the highway. Consultants hired by the county say that toll revenue will be insufficient to cover costs. A poll commissioned by CDOT found that respondents favor tolls by a 3-to-1 margin, but a public-opinion survey sponsored by the county showed that a bare majority of local residents prefer to raise taxes instead of relying on toll revenue to fund the project. In a different area of the metropolitan area, a conflict has arisen between the Regional Transportation District, which has emphasized maximizing “coverage” for “transit dependent riders,” and one of its constituent municipalities that has focused on providing transit for “choice riders” that prefer “high-frequency, direct service, rather than geographic service ‘coverage’.”

### *Texas*

Regional Mobility Authorities were authorized by the Texas legislature in 2001 to accelerate metropolitan transportation projects. As described by one RMA, its broad purpose is to provide the region, in this case a single county, “with opportunities to accelerate new transportation projects through the direction of a local board making local choices about mobility needs that enhance the quality of life and economic growth for all residents.” However, the focus is comparatively narrow: “A Regional Mobility Authority is a local transportation authority that can build, operate and maintain toll roads along with other transportation projects.” In Texas, reliance on toll revenue as the basis for long-term funding has become an essential element of regional transportation planning. A description of a major RMA project by the Texas Department of Transportation is illustrative: “According to the Metropolitan Planning Organization’s plan, leveraging tax dollars with toll revenues will allow the project to be built sooner rather than piecemealed over many years. Toll revenues will also be used to reimburse some of the equity allocated by the MPO for other much-needed projects in the region. In other words, some of the tax money in this project is borrowed from other projects, for which the MPO financial plan anticipates being paid back.” The MPO’s hope of using toll revenue from that project to fund other regional transportation needs has become complicated by an unsolicited PPP proposal to build the highway with private funds and channel the toll revenue into private hands.

## Transportation Funding Project

### *California*

A county transportation commission in California is currently considering the feasibility of imposing an apparently unprecedented “freeway fee” on new residential construction to fund improvements to state and interstate highways that are becoming severely congested as a result of rapid development. This fee would be separate from the county’s existing Transportation Uniform Mitigation Fee (currently \$7,200 per single-family home) used primarily to fund local road improvements. More than one-third of the county’s transportation budget is supported by a voter-approved 0.5 percent sales tax.

### *Illinois*

Since 1983, the six counties in northeastern Illinois that comprise the Chicago “metropolitan region” have provided significant financial support to transit operations by means of a regional sales tax, representing approximately one-third of system-wide operating revenue. The state Public Transportation Fund contributes an additional twenty-five cents for each dollar raised from regional consumers. More than half of the operating revenue for the three transit agencies (“Service Boards”) administered by the Regional Transit Authority comes from farebox receipts and other funds generated by the system. Until recently, the major regional subsidy and relatively high “recovery ratio” (self-generated revenue as a proportion of operating costs), together with a 1983 state-mandated formula for distributing funds from specific counties to specific transit agencies, has provided the Chicago region with comparatively great financial strength. In addition, successful transit oriented development has occurred in both urban neighborhoods and suburban towns during the past decade. However, a recent report to the Illinois legislature, “Is the 1983 Transit Funding Formula Ready for Reform?,” concluded that “although the RTA and its three transit agencies have depended on the sales tax as the key transit subsidy for 22 years, sales taxes in the region cannot sustain transit operations and expansions in the future.” The study also concluded that the Cook County suburbs are cross-subsidizing the other parts of the transit system in the city and the far suburbs. In the 2005 RTA annual report, a chart with the caption “Shortchanging the Future” declared: “To balance their operating budgets, the Service Boards have had to divert capital funds to operations, reducing the resources devoted to maintaining the RTA system’s infrastructure.” A joint statement by the RTA, CTA (Chicago Transit Authority), Metra (the commuter rail system) and Pace (the suburban bus system) on the 2007 transit budgets asserted that “we are now at a crossroads. Either we modernize our transit network or we shrink it.... We think 2007 is the right time to decide on new revenues for the future of transit.” In view of the state’s comparatively small share of metropolitan transit funding, the Illinois legislature is exploring available operations for increasing the level of support. The fact that the Chicago region now has the second worst urban highway and road congestion in the nation makes all aspects of transportation funding a matter of increasing urgency there.

### *Georgia*

Since 1971, the Metropolitan Atlanta Rapid Transit Authority (MARTA), which operates bus lines and a rapid rail system begun in the 1970s, has been funded by a 1 percent sales tax approved (on the fourth attempt) by voters in two of the five counties in the Atlanta region given this option by the state legislature. Over time, each of the three opt-out counties has established their own bus and paratransit systems, most connecting with MARTA lines. Under the enabling legislation, sales tax revenue must be split 50/50 between operations and capital improvements, resulting in an operating squeeze coupled with a large capital fund surplus. However, the Georgia legislature has made a temporary special exception, allowing MARTA to use an additional 5 percent of taxes collected, as well as interest on its capital reserve account, to support operations through the end of 2008.

## Transportation Funding Project

Nevertheless, during 2005 and 2006, MARTA has cut service and reduced staff to operate within the budget, which is funded 66 percent by the sales tax and 21 percent by farebox revenue. Reserves of all of the area's transit agencies are projected to be depleted within three years. Because of irreconcilable differences in priorities between the Georgia DOT and the Atlanta Regional Council (ARC), the metropolitan planning organization, the state legislature created the Georgia Regional Transit Authority (GRTA) in 1999. Although the original disagreement over a clean air plan was resolved by CRTA, other transportation issues led to appointment of a Regional Transit Institutional Analysis Steering Committee that voted unanimously at the end of last year to establish a Transit Planning Board (TPB), which includes city and county officials, gubernatorial appointees and representatives of GRTA, MARTA and GDOT. During "an initial planning phase of at least two years," the TPB will "develop a regional transit plan including a comprehensive financial plan." The Metro Atlanta Chamber of Commerce has declared that creation of the TPB is "the first significant step in 30 years toward a regional transit system." There appears to be some agreement that state funding of metropolitan transit plus extension of the sales tax to the entire region should be explored. However, also at the end of last year, a separate Congestion Mitigation Task Force – with representatives of GRTA, ARC, GDOT and the State Road and Tollway Authority appointed by the governor – recommended "refining the current project selection process for the financially constrained Atlanta Regional Transportation Plan to increase the weighting of the congestion factors to 70 percent" from its current 11 percent in order to emphasize the need for funding additional highway and road capacity in the Atlanta region. MARTA and the city of Atlanta have emphasized transit-oriented development (TOD) through cooperative ventures with private employers and the formation of tax allocation districts using tax increment financing. A favorably publicized large-scale TOD project has generated local controversy because, according to a website promoting upscale shopping and dining in the area, the latest expansion plans "could put at risk a thriving Latino community."

### *Local or Regional Sales Tax*

Thirty-three states have authorized local or regional sales taxes for roads, bridges and transit. Most require voter approval. According to a 2003 study that appeared in *Transportation Quarterly*, the per capita revenue for local or regional sales taxes can range from as much as \$112 per capita to under \$10 per capita.

Among the benchmark states, Ohio, Illinois and New York each have a local or regional sales tax option for funding transportation. This is a common approach that requires taxing authority to be given to some regional level. Only a few states nationally have given the MPO the taxing authority. In the other states with a local or regional sales tax option, special purpose districts usually are created for the sole purpose of administering a regional transportation tax. New York has five transportation districts in the state. In other cases, the tax is collected by the state and funneled back to the region. Ohio is an example of a state helps administer the tax in the three regions that use the tax.

### *Real Estate Transfer Tax*

Several states employ a tax on real estate purchases similar to Pennsylvania's real estate transfer tax. New York, for example, levies a mortgage recording tax; the tax is a locally levied tax that goes to fund transportation projects within the region. Not every New York region has such a tax, but the five transportation districts in the state use this tax method to help pay for transportation. Although not as directly tied to transportation use as a toll or farebox collection, the mortgage transfer tax connects transportation services – whether roads, bridges or public transit – to the regional economy by the linkage with homes sales and home prices.

## **Transportation Funding Project**

Pennsylvania's existing realty transfer tax includes a state tax of one percent, in addition to any local realty transfer taxes. Local governments may levy an additional tax up to 1 percent, except in home rule municipalities, where the realty transfer tax can be as high as 3 percent. In both Pittsburgh and Philadelphia, the realty transfer tax currently paid totals 4 percent of the purchase price – including the 1 percent state and 3 percent local share.

### *Local or Regional Vehicle Registration Fees*

Thirty-three states authorize some kind of regional vehicle registration or license fee, an outgrowth of older personal property taxes. The types of taxes range from only a few dollars to more than \$30 per year. Some are flat fees while others are based on vehicle weight, age, or classification, or some other vehicle-related measure. However, there is a trend away from local or regional vehicle registration fees.

### *Regional public-private partnerships*

Regional PPPs include design-build agreements for capital projects, toll roads, parking concessions and more. They range in size from a single parking garage to major commuter toll roads involving hundreds of millions of dollars. As municipalities, counties and regional authorities in other states such as Missouri make greater efforts to involve the private sector in transportation projects, the definition of a PPP becomes increasingly less clear. Big-ticket toll road concessions in large Texas counties are much easier to identify as PPPs – and more likely to garner attention and publicity – though the smaller ventures may be as useful to consider.

For Pennsylvania to make use of the funding possibilities offered by PPPs at the regional or local level, enabling legislation would be required. Allowing PennDOT to consider and approve unsolicited PPPs would encourage MPOs, municipalities and public authorities as well as business, environmental and civic organizations to involve private firms in developing innovative proposals to meet regional needs.

Given the opportunity to pursue profit in transportation infrastructure projects, private companies may be able to find creative means to resolve chronic funding problems that now delay many transportation projects. High Occupancy/Toll (HOT) lanes and highway interchanges with tolling potential are likely candidates for regional PPPs. Alternative proposals might include financing by not-for-profit “63-20 corporations” formed by public entities to issue bonds, backed by toll revenue or regional taxes. Legislation to allow regional taxing authority for dedicated transportation taxes would facilitate the formation of PPPs to construct regional projects that may not be well-suited to tolling.

A dedicated public revenue stream would encourage private firms to propose collaborative long-term agreements to increase operating efficiency and reduce the cost of capital improvements. Such funding would also enable transit authorities to explore opportunities for involving the private sector in transit oriented development that has the prospect of capturing a portion of the value created by the expansion of economic activity in the vicinity of improved transit facilities. In several metropolitan areas – most notably New York, Washington DC, Chicago, Portland, Denver, San Diego, Atlanta and St. Louis – transit oriented development has boosted real estate prices and retail sales. However, that experience has not yet yielded a proven strategy for capturing a portion of that value for funding public transit beyond an increase in farebox revenue from additional passengers.

### *An Example of PPPs and Transit: New Jersey*

The State of New Jersey has gained much positive publicity from its early involvement in innovative financing and construction of public transit facilities by means of public-private partnerships. However, certain federal support (such as the Federal Full Funding Grant Agreement

## Transportation Funding Project

received in 1997) is not commonly available today. Lease-purchase agreements of buses and passenger railcars by means of Section 5307 funds, together with leveraging future receipts by issuing Capital Grant Anticipation Notes (GANs), have enabled New Jersey Transit to embark on ambitious design-build-operate-maintain (DBOM) projects in the metropolitan New York and Philadelphia areas, where a substantial number of citizens (particularly high-income taxpayers) commute daily.

Evaluating the sustainable advantages of New Jersey's innovative financing and the DBOM arrangements is difficult. The New Jersey Department of Transportation asserted in 2004 that "the Hudson-Bergen Light Rail system [in the New York Metropolitan area], carrying nearly 16,000 customers roundtrip daily, is a key regional economic driver, with thousands of retail and residential spaces being renovated and constructed along the line. Sixteen million square feet of new office space is being built – the equivalent of the cities of St. Louis and Miami combined." At the same time, the payback to New Jersey's Transportation Trust Fund is unclear.

Closer to Pennsylvania, the Camden-Trenton River Line, which opened in 2004, has exceeded early ridership projections. A DBOM project, the River Line light railway is 34 miles in length and relies on diesel-electric multiple-unit (DEMU) trains, a technology opposed by advocates of fully electrified light rail transit (pure LRT). Moreover, an article in *Light Rail Now!* notes that "actual costs are somewhat obscure to the public at large" and "there is some question as to how much capital investment has actually been saved" by the DBOM arrangement. Certain light-rail advocates have also questioned the decision to encourage ridership by means of exceedingly low fares during the early years. The annual operating loss is unknown.

The "transit-friendly program" of New Jersey Transit "encourages growth and development where public transportation already exists." To improve the relationship between land use planning and transit, the authority has published a handbook to promote the concept that "transit-friendly planning is smart growth at its best because it can be used to create an environment around a transit station that supports pedestrian and transit use by providing for a mix of land uses in a safe, clean, vibrant and active place."

New Jersey's reliance on bond issues to fund public transit and highways resulted in a transportation funding crisis during 2006. In March, Governor Jon Corzine and the state legislature reached agreement on a funding package to "provide resources for critical highway and transit repairs and capacity expansion projects throughout the next five years." Key elements of the plan include the "reforms" of "freezing the level of Transportation Trust Fund funds used for capital maintenance projects" and "establishing an independent policy oversight board that will ensure compliance with strict guidelines for capital expenditures." According to the Governor's news release, "revenue sources for the program include the restructuring of approximately \$1.8 billion of the state's existing transportation bonds." There are two "additional net revenue enhancements": (1) "dedicating the final 1.5 cents of the existing 10.5-cent gas tax, which historically was diverted to the General Fund" and (2) "resuming dedication to the TTF a portion of toll road revenue." In apparent agreement with the plan, the New Jersey State League of Municipalities noted the new package will "increase Local Aid Funding (for municipal and county roads and bridges) from \$150 million per year to \$175 million."

## Transportation Funding Project

### Decision-making and Allocations – A Snapshot of How it Works

#### *Federal to State*

State Departments of Transportation (DOTs), such as PennDOT, determine how the majority of federal transportation funding is spent for both highways and transit. The funding process involves three steps:

- 1) Congress provides each state with contract authority levels, or apportionment, for each transportation program (e.g. bridge and highway maintenance, Congestion Mitigation and Air Quality program, Transportation Enhancement program, etc.);
- 2) Congress mandates a total obligation limit (or the total amount that can be spent) for each state, which is not differentiated by program; and
- 3) The states decide on which programs and projects to spend the year's obligation limit.

The contract authority level (Step 1) is determined in the six-year federal transportation bill, the most recent of which is the SAFETEA-LU reauthorization bill passed in 2005. Funding is administered through the US Department of Transportation's Federal Highway Administration and Federal Transit Administration. Contract authority, or apportionment, is differentiated by each federal transportation program. It was originally meant to help states plan for future transportation investments. Concurrently, the obligation limit (Step 2), or total amount that can be spent in the state, was adjusted annually, but now economy-based adjustments are made.

The predominant source of federal funding allocated to states for highway and transit projects comes from the Highway Trust Fund, which is funded by the federal motor fuels tax. The tax is paid by consumers through the price per gallon of fuel that includes the cost of the tax. All tax revenues from every state go into the Fund and are in turn allocated back to each state through the federal transportation bill. A formula using VMT, total lane miles, population, and other factors is involved in distributing funds, resulting in "donor" states – which receive less than what they put in via motor fuels taxes – and "recipient" states – which receive more than what they put in. In the 1990s, Congress amended the federal transportation law to ensure that for major highway programs, each state would receive over a 90 percent return on its share of Highway Trust Fund contributions provided from the federal motor fuels tax. Pennsylvania has been a recipient state, receiving slightly more than what the state contributes in federal motor fuels taxes. Although there is no provision to mandate specifically how and where states spend this money, traditionally it is used predominantly for highway and bridge projects.

#### *State to Local*

In addition to deciding on which programs and projects to spend the obligation limit, state DOT's must determine where the funding is spent geographically throughout the state. In most cases this is determined on the basis of population, VMT, and lane miles. Funds are allocated statewide through metropolitan planning organizations (MPOs), which exist in all urbanized areas of the state. Rural areas not covered by an MPO's jurisdiction generally are funded directly by the state DOT. In the case of Pennsylvania, rural planning organizations fulfill a similar role as the MPO.

MPOs determine specific projects on which to spend federal transportation funds through the Transportation Improvement Program (TIP), which exists for every MPO's jurisdiction. The TIP is the regional list of specific priority projects that is required by law. In addition, the TIP lists non-federally funded projects that are regionally significant. Pennsylvania has its own state funding sources used to match federal funding to fully fund certain projects. Local jurisdictions, regional authorities, and developers also provide matching funds to federal contributions. Non-federal contributions often help accelerate implementation.

## Transportation Funding Project

The TIP includes all multi-modal projects in addition to highway and public transit projects, such as bicycle, pedestrian, and freight related projects. In addition to listing specific projects, the TIP also documents the anticipated time schedule and cost for each project phase (preliminary engineering, final design, right-of-way acquisition, and construction). In Pennsylvania, the TIP generally covers four years of projects and is updated every two years.

Decision-making for each MPO usually involves several agencies and governments, including member county governments, transportation operating agencies, and state and federal agencies. In addition, municipalities, interest groups, the business community, and the public at large can become involved through the required public participation process, which allows such groups to voice concerns or influence decision-making regarding specific projects.

Once on the TIP, a project becomes the responsibility of the lead agency promoting it, often the state DOT, but sometimes a local government entity. That agency must then administer the bidding, design, and construction process and see the project through to completion.

In most states, there are other regional entities in addition to the MPO that are engaged in the planning process. In fact, most states have some local or regional authority other than the MPO that has regional taxing authority. Only a handful of states empower the regional MPOs with taxing authority to raise dedicated transportation taxes. Others have special transportation districts or other taxing entity with such power, creating on one hand, a series of checks and balances, and on the other, the potential for conflict and competing priorities within regions.

### *Innovative Practices in Nearby States*

Two nearby state governments – Maryland and Virginia – have received favorable publicity for their innovative transportation practices. Nevertheless, they share a nationwide problem: a serious gap between transportation needs and current funding.

#### *Maryland*

In 1971, Maryland established the Transportation Trust Fund, which, according to the Maryland Department of Transportation, “permits the state tremendous flexibility to meet the needs of a diverse transportation system.” Serving as a dedicated, integrated fund, the TTF receives revenue from motor fuel taxes, vehicle titling taxes, motor vehicle registration and fees, a portion of corporate income taxes, special surcharges attached to DUI/DWI convictions and moving violation convictions, rental car sales tax, bus and rail fares, bond proceeds, federal funds and operating revenue. MDOT expends these funds for the State Highway Administration, the Maryland Transit Administration, Washington Area Transit Programs, Maryland Port Administration, Maryland Aviation Administration, and Motor Vehicle Administration. Also under the MDOT administrative structure is the Maryland Transportation Authority, which funds all of its projects and services through tolls.

The Government Performance Project, a nonpartisan, independent research program supported by the Pew Charitable Trusts, observes: “Managing multiple transportation modes, MDOT brings the needs of the various modes together and directs funds where they are needed most.” However, certain revenues received by the Transportation Trust Fund are, MDOT notes, “shared with other state agencies and local governments based on statutory requirements. The funds in the Gasoline and Motor Vehicle Revenue Account are distributed 70 percent to MDOT, 15 percent to Baltimore

## Transportation Funding Project

City, and 15 percent to the counties and municipalities based on motor fuel registrations and road miles.”

The Maryland State Highway Administration won 11 of 33 national awards presented during 2005 by the American Association of State Highway and Transportation Officials. In addition to the President’s Award (the top national honor), MSHA received four Pathfinder (Silver) Awards for use of a “consultant contract tracking system,” “creating a safer work zone for highway construction personnel,” a “pavement type selection process using life cycle cost analysis,” and “development of an electronic construction contract change order process.”

Despite a dedicated, integrated trust fund for transportation and an award-winning highway administration, Maryland continues to experience a major gap between transportation needs and available revenue. According to Governor Robert Ehrlich’s office, Maryland ranked 47<sup>th</sup> in the nation in highway spending per capita in 2003. For seven years, total Department of Transportation outlays had been essentially unchanged. “Congestion is choking Maryland’s highways,” declared the Lieutenant Governor.

A special Transportation Task Force convened in 2003 identified \$17.1 billion in capital needs and recommended increasing the six-year capital program from \$6.6 billion to \$11.3 billion. Of the \$4.7 billion increase, \$2.9 billion was expected to come from “current/anticipated revenue sources,” including “federal funds (reauthorization, unprogrammed, special funding for Maryland projects),” the sale of assets, the sale of bonds, and toll increases to assure that the Transportation Administration remains self-sufficient (in view of the finding that “it is likely that most new toll facilities and toll lane projects would actually require supplemental funding, rather than generating excess revenues for other transportation improvements”). The remaining \$1.8 billion needed to cover the \$4.7 billion increase in the six-year capital budget would come from new state revenues of \$300 million per year.

Governor Ehrlich sent to the legislature a transportation funding program calling for \$320 million in new annual funding, mostly from increased vehicle registration fees, a surcharge on DUI/DWI convictions and moving violation convictions, higher miscellaneous Motor Vehicle Administration fees, and dedicating all of the rental car sales tax to the Transportation Trust Fund. However, \$54 million per year was to be “generated from higher than expected titling tax receipts, motor fuel tax receipts and additional bonding capacity projected for the six-year period.” In addition, the Governor budgeted \$25 million for 2005 to begin to pay back a portion of \$300 million that had been borrowed from the Transportation Trust Fund and transferred to the General Fund to balance the 2004 budget.

Ultimately, the Maryland legislature approved a \$238 million annual increase in the six-year capital budget, beginning in 2005. Seventy-five percent is allocated to highways, with the remainder for public transit.

By the summer of 2006, the Maryland Secretary of Transportation said that “we’re coming up on some major decisions we’ll have to make in terms of transportation projects” because of a \$20 million shortfall in revenue from the motor fuels tax and the titling (motor vehicle excise) tax. He urged planners to be conservative because of the potential \$120 million negative impact on the six-year plan.

Efforts to find a dedicated source of funding for public transit in Maryland continue. During 2006, legislation was introduced to create a new Mass Transit Account within the Transportation Trust Fund and distribute 20 percent of state sales and use tax revenue to that account – beginning with 2

## Transportation Funding Project

percent of total sales and use tax revenue and increasing by two percentage points for nine more years. The Maryland Chamber of Commerce argues that a new “long-term dedicated funding source needs to be identified for mass transit.”

Although MDOT continues to improve existing light rail facilities and has recently “accomplished the first comprehensive restructuring of bus service in the Baltimore region in 35 years,” a proposal to construct a Bi-County Transitway for light rail or a special busway in the suburbs of Washington is locked in funding competition with a major highway project, the Intercounty Connector. Proposed as a \$2.4 billion multi-lane outer-belt toll road, the ICC is currently expected to be funded by \$2.2 billion in general revenue bonds backed by federal guarantees, \$1.2 billion to be repaid from toll revenue and \$2.0 billion from GARVEE bonds “supported by anticipated growth in Maryland’s future federal highway funds.” In view of recent history and remarks by the nominee for U.S. Secretary of Transportation, assumptions about growth in federal funding are less than certain. The Coalition for Smarter Growth opposes the ICC, which they estimate at \$3 billion, based partly on a study by MDOT indicating that this project would not relieve congestion on the Washington Beltway and a Draft Environmental Impact Study that projected an increase in traffic on local roads as a result of the ICC.

### *Virginia*

The Commonwealth of Virginia is considered an innovator in the use of public-private partnerships in the construction and financing of transportation projects. Three experimental approaches to toll road financing and operations have been implemented in Virginia during the past two decades, and several unsolicited public-private partnership proposals are currently under consideration. Virginia is also attuned to public transit issues, particularly because of the involvement of Northern Virginia communities in the Northern Virginia Transportation Commission, a regional transit planning agency having responsibility for allocating federal, state and regional transit assistance among its member jurisdictions (with almost all of the proceeds from a 2 percent regional retail motor fuels tax dedicated to the Washington Metropolitan Area Transit Authority). In addition, the Virginia Department of Transportation is credited with significant operational improvements in recent years.

Nevertheless, the gap between transportation needs and available resources has become a genuine crisis in Virginia, as in so many other states. At this time, the legislature is meeting in a special session to address the specific issue of transportation funding. A largely conservative majority in the House of Delegates argues for closing the funding gap by means of further improvements of policies and procedures within the Department of Transportation, together with reliance on tolls, public-private partnerships, and “more local autonomy for transportation if the locality wants to pick it up.” A bipartisan majority in the Senate is advocating higher gasoline taxes to fund improvements in the transportation system.

Governor Timothy Kaine “remains committed to a statewide, long-term transportation fix – one that is based on reliable, dedicated funding streams that do not threaten our General Fund obligations in education, public safety and public health,” according to a spokesman. The Governor agrees with the Senate majority that additional tax revenue will be needed to maintain and improve transportation in Virginia.

## **Transportation Funding Project**

### **Transportation and Land Use Policy**

The impact of transportation programs is inextricably linked to other policies, including economic development, land use, environmental policy, and human services. Often transportation decisions follow development decisions, like an afterthought rather than well-coordinated planning. Because land use decisions are local, while transportation decisions are largely regional or state, there often is a disconnect that results in disjointed planning decisions.

Pennsylvania – like most states – is consuming land at a far faster rate than the population is growing. As Pennsylvanians spread out, in terms of where they live, commute distances and times are increasing. VMT are increasing. Transportation both impacts land use and development and is impacted by land use decisions. While Pennsylvania is developing more land and driving more miles, the state’s population and tax base is growing more slowly. New infrastructure developed to meet the needs of the population must be paid for and maintained by a slow-growing population.

In Pennsylvania, land use decisions are made at the municipal government level. Land use planning has become one of the most important – and many times controversial – functions of local government. State government has delegated the responsibility to plan for land use and its regulation exclusively to municipal and county government.

Although the power is delegated, not all municipalities have accepted the responsibility. An estimated 50-60 percent of all municipalities haven’t implemented comprehensive plans or zoning ordinances. While each municipality is permitted to compile its own plan and to implement zoning, state law explicitly allows multi-municipal plans. In fact, 760 municipalities are involved in multi-municipal planning efforts, but few are in the adoption or implementation phase.

Almost all counties have comprehensive plans, although how current and viable they are varies considerably. According to state law, local land use plans must be “generally consistent” with the county comprehensive plan. However, the county’s role is advisory only, rendering county comprehensive plans powerless legally. It’s questionable whether most counties have the capacity to play a greater role, even if they were given the legal power to do so.

No state agency has responsibility to assume any land use powers, whether it’s over and above the powers exercised by local governments or in areas governed by local governments that don’t exercise those powers. In effect, state leaders have relegated the state to a support role. Its most obvious direct activity is a \$3.3 million item in the state budget for land use planning grants. The state also provides technical assistance. Far more important to local land use planning are the billions of dollars state government spends on physical infrastructure within local government jurisdictions and may or may not be consistent with local land use planning.

PennDOT spends close to \$1.5 billion in state and federal funds annually constructing and reconstructing highway infrastructure. It also conducts a statewide transportation planning process to allocate those resources that depends on regional planning agencies for local input – not the municipal governments ultimately responsible for local land use planning priorities. Yet where they build those new roads and interchanges will have a major impact on how the land is used in and around them. In Pennsylvania, the state DOT plays a strong role in planning locally and regionally because PennDOT provides technical assistance and staffing, particularly for smaller MPOs and rural planning organizations (RPOs).

In Pennsylvania, where land use decisions are made at the municipal level, it is difficult to assure that transportation is considered as land use decisions are being made, and vice versa. Movement toward connecting land use to policy areas such as transportation is evident in the adoption of the Keystone

## **Transportation Funding Project**

Principles, which encourage integrated planning and have been adopted by a number of state agencies including PennDOT, but are not mandated by the state.

Another area where there appears to be movement toward more coordinated development, transportation and land use decisions is the re-emergence of transit-oriented development. It's not a new idea, but one that is re-emerging. Transit-oriented development – or TOD – is compact, mixed use development within walking distance of a transit station. Usually, there is a combination of residential, commercial, and office development in a TOD. In Pennsylvania, TODs are gaining traction in part because of legislation passed in 2005, the Transit Revitalization Investment District Act (TRID, for short), which is designed to encourage transit-oriented development. TRID offers municipalities and developers the flexibility, technical assistance, and potentially funding to support planning and implementation of TOD projects.

While new TOD projects under the TRID legislation are just getting under way in Pennsylvania, there is evidence from regions outside of Pennsylvania that development near transit locations promotes transit ridership, spurs commercial activity in a walkable community or neighborhood, and increases property value in the TOD area.

## **Transportation and other policy areas**

### *Economic Development*

The state's transportation systems make significant contributions to the state and regional economies. First and foremost, the transportation systems move people to and from work, shopping, school, and other economic activities. Transportation – both directly and indirectly – supplies stable, well-paying jobs for Pennsylvanians. One example is the trucking industry and related warehouse and distribution centers, which are important components of Pennsylvania's economy.

The state's geographic location as the Keystone State practically ensures that much of the trucking industry and related industries that have developed will stay, in addition to industries that rely on the distribution networks in Pennsylvania. But the transportation policy decisions can impact each of these industries, just as these industries impact the state's transportation networks.

Economic impact studies report that every \$1 invested in public transportation projects generates between \$4 and \$9 in local or regional economic activity. And another study shows that the annual rate of return for highway investment is approximately 17 percent. Though inexact, such studies show the multiplier effect of transportation. Whether economic development decisions drive transportation decisions – or vice versa – the two are inextricably linked.

### *Mobility and Demographic Changes*

Pennsylvania has an aging population. According to various studies, the average American will continue to drive up to 15 years after they no longer have the appropriate reaction time, vision and health to do so safely. As retirees settle far away from core services such as shopping and health care, transportation alternatives become less convenient to the user – and more expensive. Mobility of the aged will be an important factor for Pennsylvania in the future and impacts safety, health, social, and economic conditions. Decision-makers for both public transportation and roads and bridges must keep mobility of the elderly in mind when addressing the transportation needs of Pennsylvania. Safety of roads and bridges and access to public transit are two important factors. In rural areas, transit trips are more often medical related (35% of all trips) than work-related (30%). Clearly the need for reliable transit systems – in urban, rural and suburban areas of the state – will continue to be important to the mobility of older Pennsylvanians.

## **Transportation Funding Project**

### *State Police in the Transportation Budget*

It is not uncommon for State Police operations to be paid for partially out of transportation-related revenues. Michigan is an example of a state that also funds State Police out of transportation revenue. Until 2003, Ohio also provided funding for the State Police out of transportation revenue, but as part of a transportation bill that raised the motor fuels tax rate, the State Police were stripped from the transportation budget.

Though the proportion of state transportation revenue dedicated to state police has not changed over the years, the amount of money has increased as transportation funds have increased. Each year, transportation funds *do* make up a greater portion of the State Police budget. Because State Police services often expand beyond policing a state's highways to include police protection in small communities, stakeholders argue whether the appropriate place for the State Police budget is in the General Fund or other source. In Pennsylvania, revenues for the State Police from transportation funds totaled roughly \$500 million in the recent budget, enough to fund the \$416 million lowest level of funding for highways and bridges suggested by the Commission. Of course, funding would need to be identified elsewhere in the state coffers to pay for State Police services, if transportation funds were to be redirected from the State Police back into transportation.

### **Public Opinion on Paying for Transportation; Infrastructure; and Land Use IssuesPA/Pew Poll Results**

#### *Transportation-related infrastructure*

In an August 2006 IssuesPA/Pew poll, respondents perceived transportation-related infrastructure to be the biggest infrastructure problem. Respondents believed their regions will lack sufficient funding to meet demands in the future. And 69 percent put the focus on efforts to repair and upgrade existing roads, bridges and public transportation systems, rather than building new. This is consistent with the generally held belief among stakeholders and officials that the state's system of roads and bridges is primarily complete. Stakeholders expressed that maintenance or needed replacement of existing infrastructure to bring it into a state of good repair should be the priority, while new capacity should be considered at the margins only, where there is clear demand.

Four in 10 (42%) say traffic congestion on major roads and highways is a big problem where they live – the biggest infrastructure problem, according to the August 2006 poll. The condition of roads, highways and bridges ranks second – at 37 percent perceiving conditions as a big problem. Other infrastructure concerns include affordable housing (36%), pollution of waterways (28%) and access to alternatives to driving (24%).

Problems are perceived differently in different parts of the state. When asked to identify “big problems” from a list of infrastructure-related problems, responses differed depending on the region where the respondent lived:

- In the city of Philadelphia, traffic congestion ranked second behind availability of affordable housing.
- In suburban southeastern PA, where many commute to Philadelphia to work, traffic congestion was a big problem (68%); road conditions comes in fourth with 33 percent saying it's a big problem.
- In southwestern PA, transportation-related problems are three of the five major concerns: conditions of roads/bridges (49%), traffic congestion (33%), and access to alternatives to driving (27%)
- In south central PA, the same problems emerge among the top five, but in a different order: traffic congestion (52%), conditions of roads/bridges (34%) and access to alternatives to driving (21%).

## Transportation Funding Project

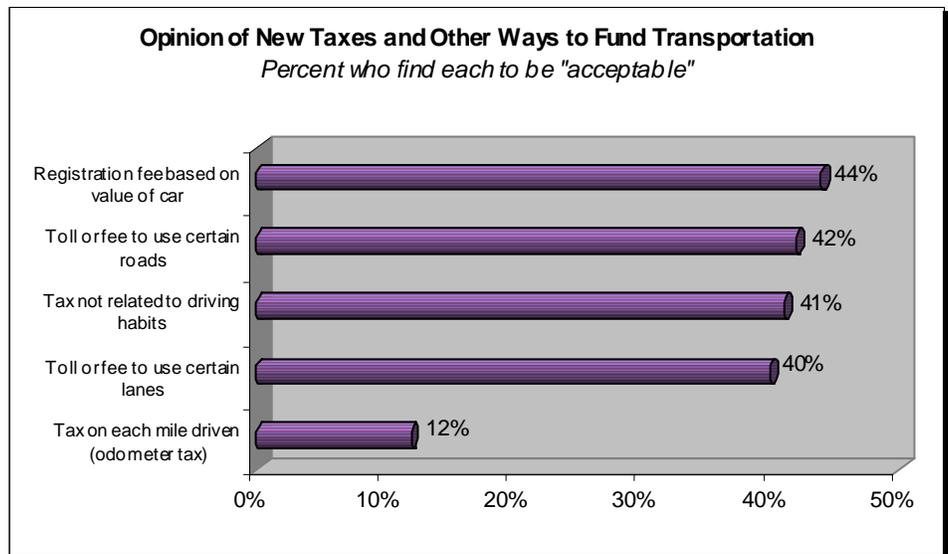
- In northeastern PA, the condition of major roads/bridges is the biggest infrastructure problem (41%), and access to alternatives to driving (29%) and traffic congestion (28%) rank 4<sup>th</sup> and 5<sup>th</sup>.
- In the rest of state, the transportation related problems are not cited as often as 'big problems'. Condition of roads/bridges is highest at 27 percent, followed by traffic congestion (26%) and access to alternatives to driving (24%).

### *Public attitudes toward new taxes*

Not surprisingly, despite the belief that there is a critical need for more investment into transportation infrastructure (August 2006) and general support for dedicated funding for mass transit (December 2005), there is little agreement on how to pay for transportation needs.

The August 2006 and December 2005 polls showed that although there is support for new spending, there was little support for new taxes or tax increases. Only about one-third said they are willing to pay higher taxes for infrastructure in August 2006. And IssuesPA/Pew polls continue to return results that show Pennsylvanians do not want to pay more in taxes, even for programs and policies they deem important.

The September 2006 IssuesPA/Pew poll included specific questions about how to pay for transportation infrastructure. While no new tax or revenue source won majority support, there was relatively strong support for HOT lanes (40%), taxes not related to driving habits (41%), toll roads (42%) and registration fees based on car value (44%). There is little support for an odometer/miles driven tax (12%). The results in the 40-44 percent favorable range demonstrate that an educational campaign regarding the current infrastructure conditions and the need to improve the state's transportation systems could lead to more favorable support for new taxes or fees to fund transportation.



Some regional differences emerge, particularly in the southwestern part of the state. Residents of southwestern Pennsylvania are resistant to the idea of requiring a toll or fee to use roads that now have no toll; 62 percent said this idea is not acceptable. These same residents are more likely to accept the idea of a toll or fee to use certain lanes, such as a HOT lane (52%).

Significant differences are found in responses by income level as well. About half of Pennsylvanians with household incomes of \$75,000 or more are supportive of paying a toll or fee to use roads that have no toll presently or paying for use of certain lanes, such as a HOT lane (52% for both). In contrast, only 36 percent of Pennsylvanians with incomes under \$30,000 find it acceptable to pay a toll or fee on current roads; and only 38 percent find it acceptable to pay a fee to use certain lanes.

## Transportation Funding Project

### *Support for regional tax for regional projects*

Questions relating to regional taxation and support for regional projects show surprisingly positive results. Pennsylvanians may be somewhat reluctant to pay new taxes for transportation improvements at the state level, but the poll results clearly show that they are more willing to approve such taxes for transportation projects closer to home. Six in 10 say they would favor regional taxes to help fix deteriorating roads (61%) and deteriorating bridges (61%) where they live. Just over half (53%) say they would favor regional taxes to help pay for new roads or new lanes on busy roads. Just under half statewide (47%) would favor a regional tax to improve public transportation services where they live.

Not surprisingly, there are regional differences in support for regional taxes to fund transportation. Among Philadelphia city residents, 71

percent support regional taxes to fix roads, 68 percent to fix bridges, 64 percent to improve public transportation and 63 percent to help pay for new roads or lanes.

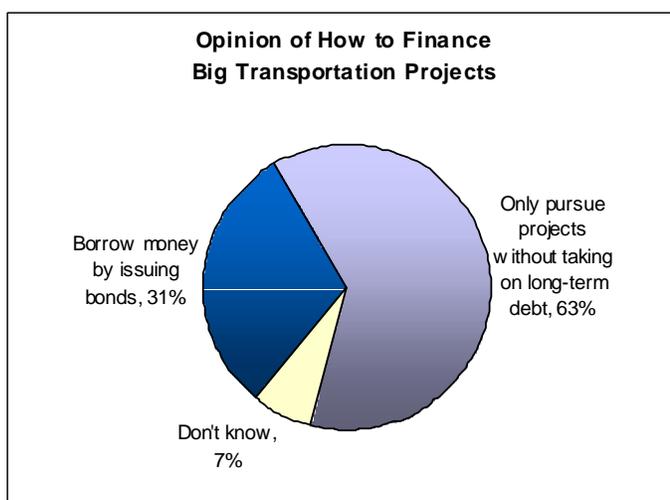
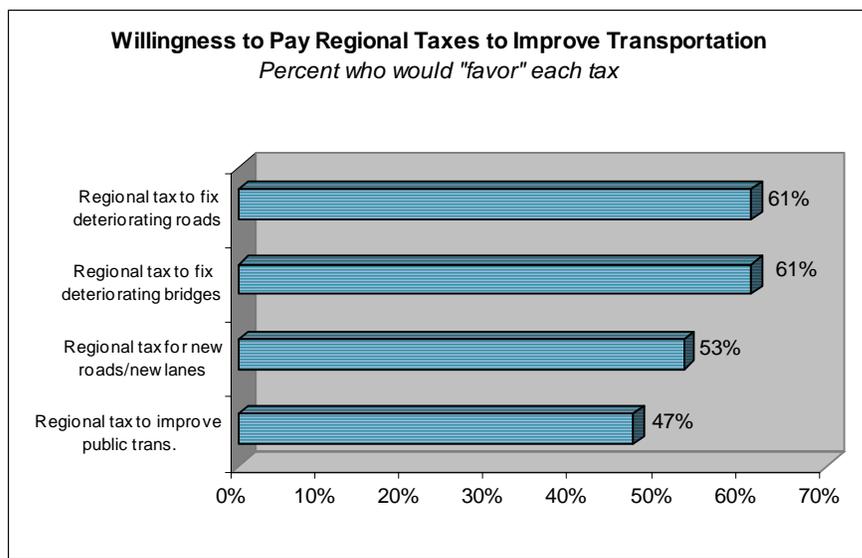
Young adults are the biggest supporters of regional taxes to fund transportation. Among those age 18 to 29, 77 percent favor regional taxes to fix bridges and 75 percent favor regional taxes to fix roads. This compares with 54 percent of those ages 50 and older, who favor regional taxes to fix bridges and 53 percent who favor regional taxes to fix roads.

Despite support for regional taxes, the idea of giving *local* governments the authority to collect taxes for public transportation does not get majority support. Roughly half (53%) want to let state government collect all the taxes and decide how to distribute the money to public transportation systems across the state, while 38 percent want to see local governments have the authority to collect taxes to fund regional systems.

### *No support for state use of debt*

State borrowing for debt is not supported by the general public. By a two-to-one margin (63% to 31%), poll respondents opposed the use of debt for long-life infrastructure and instead supported a continuation of the current pay-as-you-go approach.

The level of support for long-term financing for big transportation projects varies by region – from 36 percent support in northeastern Pennsylvania and 35 percent



## Transportation Funding Project

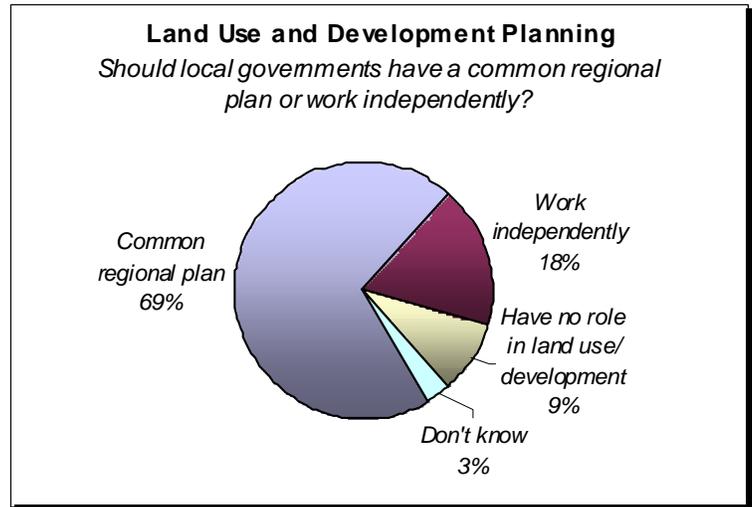
support in suburban southeast Pennsylvania to only 25 percent support in the ‘rest of state’ – largely rural regions of the state.

Although there is more support among better-educated and higher income Pennsylvanians, support for long-term financing fails to reach a majority even among college graduates (40% support). Support is for borrowing is only 26 percent among those with a high school education or less – and the same among those with household incomes under \$30,000.

### *Public opinion regarding land use planning*

In an August 2006 IssuesPA/Pew poll, those surveyed expressed some faith in government’s ability to plan for the future. More than 60 percent of those polled expressed a lot or some confidence in the ability of state government to plan for the future. Similarly, nearly 60 percent had the same confidence in local governments.

The same poll asked if local government should have a common regional plan or work independently. More than two-thirds surveyed said local governments should work together and have a common regional plan for land use and development. However, the belief in regional planning didn’t extend to state funding practices. Those participating in the poll were divided on the state’s role. Less than half (46%) said the state should fund local infrastructure projects only if there is a common regional plan; 42 percent expressed the opposite point of view.



## Transportation Funding Project

### Summary of Findings

A review of Pennsylvania's and benchmark states' transportation systems, funding mechanisms, and allocation and decision-making processes, as well as a review of other states' practices and innovations in transportation policy, leads us to a number of findings and conclusions.

First, it's clear that Pennsylvania faces a serious transportation funding problem, but the gap between transportation needs and revenue hardly makes Pennsylvania unique. Nationally, operating and construction costs in the transportation sector are rising faster than inflation in general. At the same time, dedicated transportation revenues are growing more slowly than inflation – and much more slowly than the escalation in transportation costs. Though operational inefficiencies are undoubtedly a part of the problem, a fundamental gap exists in the declining purchasing power of transportation revenue and the escalating costs of operation and construction within transportation systems.

To help close the gap between cost escalation and the declining purchasing power of current revenue sources, stakeholders agree that policymakers should seek a funding stream – or combination of funding streams – that is predictable, adequate, and able to grow with inflation. In recent years, Pennsylvania has been less severely impacted than other states by slow growth in motor fuels tax revenue because the Oil Company Franchise Tax grew with inflation until it hit the legislated ceiling. However, unless that ceiling is raised, Pennsylvania can expect motor fuels tax revenue to grow only slightly in the future, a pattern already visible in other states and at the federal level.

Pennsylvania, like its benchmark states, is dealing with aging infrastructure that requires costly upkeep and replacement. Many of Pennsylvania's roads are in poor condition and though their conditions are not grossly out of line with the other benchmark states, it's clear that the conditions of the roads, bridges and transit system cost the Commonwealth and its citizens in many ways: in repair costs for damaged vehicles, in infrastructure repair, in inefficient mobility and movement of goods, in declining safety, and more.

When it comes to regional decision-making and funding of the state's diverse transportation systems, Pennsylvania is an outlier particularly when it comes to how public transit is funded: the state provides an especially large share of both capital and operating funds – with little local or regional contribution. Pennsylvania is one of few states without local or regional taxing authority for transportation. In many states, counties and other local governments also have far more responsibility and authority for road and bridge building and maintenance. In Pennsylvania, nearly one-third of all road miles are owned by the state, a much greater proportion than in benchmark states generally.

The regional power that exists in most states to raise taxes for transportation is, not surprisingly, often combined with a greater regional role in decision-making and planning. Outside of the federally-mandated TIP process, Pennsylvania lacks regional decision-making entities to take into account regional transportation needs, much less the connection to other, related regional decisions including land use, community vitality or economic development. The state should consider granting regional taxing authority to supplement – *not* to replace – state funding for transportation.

Another observation regarding funding is the use of debt. Relative to the benchmark states and the US average, Pennsylvania's use of debt for transportation-related projects is low. Prudent use of debt should be considered among the ways to finance long-term capital projects such as major construction, strategic expansion, and investment in public transit. Use of transportation-related debt should be balanced against the useful life of the purchase or repair, and revenue sources dedicated to repaying the debt must be identified.

## **Transportation Funding Project**

Few states are actively engaged in public-private partnerships (PPP) to date, but legislatures in each of the benchmark states not already using PPPs are in the process of generating enabling legislation to allow use of PPPs. Use of such partnerships in design, construction, operations, maintenance and financing, tolling, and other programs could provide cost savings and shift some of the risk to the private sector, though not without some risk to the public and government entities. Stakeholders agree, however, that any revenue that comes from PPPs – such as long-term leases to the private sector for new or existing facilities – should be dedicated to transportation-related expenses, not used to subsidize programs or services only tangentially related to transportation. PPPs should not be limited to multi-billion dollar projects, but also be considered for smaller state or regional projects.

Pennsylvania's needs are not dissimilar to those in other states. The state's transportation systems must have adequate and predictable funding, dedicated sources of revenue that are inflation-sensitive. However, lawmakers have an opportunity before them – to resolve the current funding crisis for roads and bridges as well as public transit – and to implement new policies that will protect transportation investments going forward, allow for improved regional decision-making, and encourage innovation and collaboration among public and private partners.

## **Transportation Funding Project**

### **Appendices**

The following section contains additional material plus resources and acknowledgements.

## Transportation Funding Project

### Legislation Authorizing Public-Private Partnerships

With encouragement from the federal government, a bewildering variety of public-private partnerships have emerged in the design, construction, maintenance, operation and financing of transportation facilities during the past five years. Because most of these partnerships are in the project planning stage or have begun to function only recently, evaluating their success and identifying best practices is not yet possible. The limited experience of the states that have already embraced such partnerships offers little reliable guidance for adapting their methods and agreements to the particular characteristics and challenges of Pennsylvania's transportation network.

As of August 2006, twenty-one state legislatures had authorized public-private partnerships in one form or another. In preparing similar legislation for Pennsylvania, a review of all texts might prove informative. However, the legislative acts of four states appear to deserve particular attention:

- Virginia, under the innovative Public Private Transportation Act enacted in 1995, has entered into a variety of PPP agreements, some not entirely successful, and has recently amended the enabling legislation in light of more than ten years of experience, the most extensive among states in the East. The state government currently is considering a variety of unsolicited proposals involving truck-only tolls, high occupancy/toll lanes, highway extensions, park-and-ride improvements, and bus facilities.
- Authorized by PPP legislation, Indiana earlier this year signed a concession agreement with a foreign consortium for a lump-sum payment in excess of \$3.8 billion in exchange for a 75-year lease to operate the highway and receive toll revenue during that period. The state government also is seeking to attract investors to build and operate a 142-mile section of a toll road planned as an expansion of the interstate system.
- Oregon is using the flexibility granted by PPP legislation to seek involvement of private partners in the planning and design process at the earliest feasible stage. Through the Oregon Innovative Partnerships Program, the state DOT signed a PPP with an international consortium led by Macquarie Infrastructure Group of Australia to "study, design, engineer, fund, construct and potentially operate" three projects intended to relieve traffic congestion and provide access to developing areas at a total estimated cost of more than \$2.3 billion. Under a federal demonstration grant, Oregon also is conducting a test of the first Vehicle Mile Traveled tax collection system in the nation.
- Utah has recently revised its PPP legislation with the advice of an investment banking firm that served as an advisor to the governments negotiating concession agreements for the Chicago Skyway and the Indiana Toll Road. The state DOT, which had entered into an early and successful \$1.6 billion design-build PPP agreement with certain maintenance provisions (designated an "experimental project" by the Federal Highway Administration) for Interstate Highway reconstruction in 1996, is now authorized to accept solicited and unsolicited proposals for PPP toll road development agreements.

The ongoing development of transportation networks permits a more deliberate approach than that involved in the privatization of warfare, disaster relief and homeland security. Nevertheless, the lessons of Iraq, Hurricane Katrina and passenger screening suggest that cost savings and public satisfaction do not necessarily result from transferring certain operational responsibilities from public to private hands. Even in the comparatively conventional realm of domestic transportation, the potential benefits and risks of innovative partnerships between the public and private sectors must be carefully weighed.

## Transportation Funding Project

As noted in a report issued by the CEO Council for Growth in Philadelphia, “The extent to which PPPs could help reduce [the] infrastructure investment gap turns in large measure on *the ability of projects to access dedicated revenue streams*. ... PPPs can play an important role in expediting projects, bringing innovation and, under certain circumstances, even attracting additional capital. Yet, many of the challenges being faced regionally by our public transportation agencies and regional transit operators relate to fundamental resource issues and cannot be resolved solely by looking to the private sector.”

### Key Sources of Revenue for Regional Dedicated Funding An Analysis of Potential Dedicated Funding Sources

COMPONENTS	Ease of Implementation	Revenue Yield and Adequacy	Stability and Sustainability	Fairness and Equity	Economic Efficiency
REVENUE SOURCE	Existing mechanism for collection of this revenue source? Administrative costs associated with implementation?	How much would the revenue source make and will it be sufficient?	Will the new source of revenue be stable and not fluctuate unpredictably?	Will the costs of the new revenue source be balanced with the benefits? Will the revenue distribute across jurisdictions?	How will the new source of revenue effect economic behavior?
ACCESS FEE A per square foot charge on commercial and federal government property benefiting from the existence of transit service.	(-) New revenue collection mechanism likely required. Possible controversies over boundaries with tax district.	(+) Substantial revenue can be generated at reasonable tax level.	(+) Once in place, would likely be very stable from year to year.	(?) Unclear where impact will be felt	(-) Could negatively influence business decision to locate near transit hub.
GAS TAX An add on to or dedication of existing gas taxes, collected on all fuel sold in the transit service area	(-) Likely will require a basis to allocate or create a new mechanism	(-) Substantial increase in taxes needed to generate the revenue.	(?) Future gas tax revenues could be affected by many global factors concerning oil.	(?) Motorists are beneficiaries of good transit to reduce congestion, but will still object to paying for it.	(-) Higher tax rates in the area could divert purchase locations.
PARKING TAX A direct charge to those parking on a daily basis at work and business locations in the transit service area.	(-) New mechanisms to levy tax on facilities likely needed; enforcement could be a problem with a cash business	(+) Assuming that they can be collected, a moderate tax increase would generate significant revenues.	(+) Likely to be stable once introduced, although transit success could reduce revenues.	(?) Motorists will object to paying but benefit from increased transit usage (a la gas tax).	(?) Possible (+): reducing auto use, congestion, air pollution; possible (-): shift in work locations.
PAYROLL TAX An incremental level of taxation on all payrolls in the transit service area.	(+) Likely ability to piggyback on existing mechanisms.	(+) Relatively low rate would provide significant revenues.	(+) Relatively stable, although susceptible to business cycles.	(+) All who work in region will benefit from transit service, but equity will depend on the structure of the tax.	(?) Encouragement to work elsewhere possible.
PROPERTY TAX	(?) Difficulty with	(+) Rates needed	(+) Very stable	(?) Questions	(?) Question

## Transportation Funding Project

An incremental region-wide tax or dedication of existing tax on all taxable property in the transit service area.	different property assessment schemes?	to generate sufficient revenue would be low relative to existing property taxes.	and predictable from year to year.	about fairness regarding property owner benefits throughout the region.	whether would impact real estate values and investment decisions.
<b>SALES TAX</b> An incremental sales tax added onto the existing sales taxes within the transit service area, or a dedication of existing sales taxes within the jurisdictions	(+) Ability to piggyback on existing mechanisms.	(+) Low rates comparable with other transit systems would generate significant revenues.	(+) Relatively stable from year-to-year, although susceptible to business cycles to some degree.	(-) General concern about the regressive nature of the sales tax (although recent studies have shown it to be closer to proportional than regressive)	(?) Possible redirection of purchases outside of the region, on-line, etc.

SOURCE: Report of the Metro Funding Panel, Final Draft for Public Comment and Release, 17 Dec 2004, pp. 29-31.

### Motor Vehicle Registration Fees: A Closer Look

Generally, motor vehicles are grouped into four classes for the purpose of vehicle registration: automobiles, single-unit trucks, truck tractors, and semi-trailers. The registration fee for a motor vehicle within each class is based on a number of factors, including weight, purpose (farm or non-farm), age, and number of axles. All states use some combination of these features to determine any motor vehicle's registration fee.

By in large, the heavier and newer a vehicle is and the more axles it has, the more expensive it is to register. Some states evaluate vehicle weight by measuring gross pounds (including load), while others measure empty pounds (without load). To simplify this process, most states have developed weight groupings that assist in determining the appropriate registration fee for a particular vehicle. Many states have developed a similar grouping strategy to evaluate automobile age, with older cars costing less to register than newer ones.

Based on these criteria, it is not surprising that automobiles are the least expensive class of motor vehicles for an owner to register, as vehicles in this class have only two axles and are relatively lightweight. Single-unit trucks also have two axles but are typically heavier than automobiles and are, on average, more costly more to register. Within the single-unit truck classification, however, some states award discounts for those registered as farm vehicles.

Three and five axle truck tractor/semi-trailer combinations are considerably more expensive to register than either automobiles or single-unit trucks. Generally, most of the cost is a result of the truck tractor registration, as most states base this fee on the weight of the tractor-trailer combination, while the fee for semi-trailers is typically a minimal, flat rate. The total amount required to register a tractor-trailer combination varies greatly between states. Predictably, however, five-axle tractor-trailers are the most expensive vehicles to register in every state.

While states invariably employ some mixture of these features for determining vehicle registration fees, each state has developed unique methods for putting such qualifications into practice. For instance, some states opt for a more simplistic approach, electing to employ a flat registration fee for a particular class of

## Transportation Funding Project

vehicles. This approach is most common for automobiles. In 2001, 28 states (including Pennsylvania) chose to use some variation of a flat fee for automobile registration.

Other states, however, use notably more complex measures for determining registration fees. Colorado, for example, determines its automobile registration fees through a combination of a weight classification and vehicle age. In 2001, the state charged \$6.00 for cars 2,000 pounds or less, \$6.00 plus \$0.20 per hundred pounds (cwt.) over 2,000, and \$12.50 plus \$0.60 per cwt. over 4,500 pounds. Additionally, the state charged \$12.00 for cars less than seven years old, \$10.00 for cars between seven and ten years old, and \$7.00 for cars ten years and older. Finally, Colorado charged an additional fee of \$2.00 to register a car with an air conditioner.

Other states make use of more simple – yet creative – measures for determining registration fees. Missouri’s automobile registration fees, for example, are based on a car’s horsepower. In 2001, the state charged \$18.00 for cars with less than 12 horsepower and up to \$51.00 for cars with 72 horsepower or more.

Pennsylvania’s methods for determining its vehicle registration fees are far less complex. According to FHWA data, in 2001, the state charged a flat rate of \$24.00 for automobile registration and employed a progressive scale based on gross weight to establish the fees for registering single-unit trucks, truck tractors, and semi-trailers. The table below provides an outline of Pennsylvania’s 2001 vehicle registration fees.

**Pennsylvania’s Motor Vehicle Registration Fee Schedule, 2001**

	FEE RANGE AND RATE			FEE BASIS
	Bottom of Range	Top of Range	Typical Vehicle	
<b>Automobiles</b>	\$24.00	\$24.00	\$24.00	Flat Fee
<b>Single Unit Trucks (non-farm)</b>	\$39 for 5,000 lbs. or less	\$834 for 73,280 lbs.		Gross Weight
<b>Single Unit Trucks (farm)</b>	N/A	N/A	\$78.00	\$51 or 1/3 of standard fee for class, whichever is greater.
<b>Tractor Trailer</b>	\$39 for 5,000 lbs. or less	\$1,125 for 80,000 lbs.	\$501 (3 axle) \$1,125 (5 axle)	Gross Weight of Combination
<b>Semi-Trailer</b>	\$6 for 3,000 lbs. or less	\$12 for 10,000 lbs.	\$27 (3 axle) \$27 (5 axle)	Gross Weight

SOURCE: U.S. Department of Transportation, Federal Highway Administration, *Highway Taxes and Fees: How They are Collected and Distributed*, 2001.

In 2001, Minnesota charged \$125.00 on average for automobile registration, over fifteen times more than Arizona’s \$8.00. A majority of states (30), however, collected somewhere between \$20 to \$30 in registration fees from a typical automobile, with the mean collection falling at \$35.65 and the median at \$27.25. Pennsylvania’s \$24.00 collection ranked 19<sup>th</sup> lowest in the country and well below average.

For typical single-unit truck registration, in 2001 Mississippi collected the most of any state from farm and non-farm vehicles at \$425.00 and \$503.50 respectively. Mississippi’s non-farm truck collection was over twenty times that of Georgia’s, whose \$25.00 intake was the lowest in the country. Wisconsin had the largest discount for registering typical farm trucks at \$274.00 (from \$365.50 to \$91.50) while six states (Arizona, California, Nevada, North Dakota, South Dakota, Wyoming) plus the District of Columbia had no discount at all. The mean single-unit truck registration collection was \$175.89 from non-farm and \$88.96 from farm trucks, while the median collection was \$161.50 from non-farm and \$65.00 from farm trucks. Pennsylvania was on the middle-to-high end of both scales, collecting \$237.00

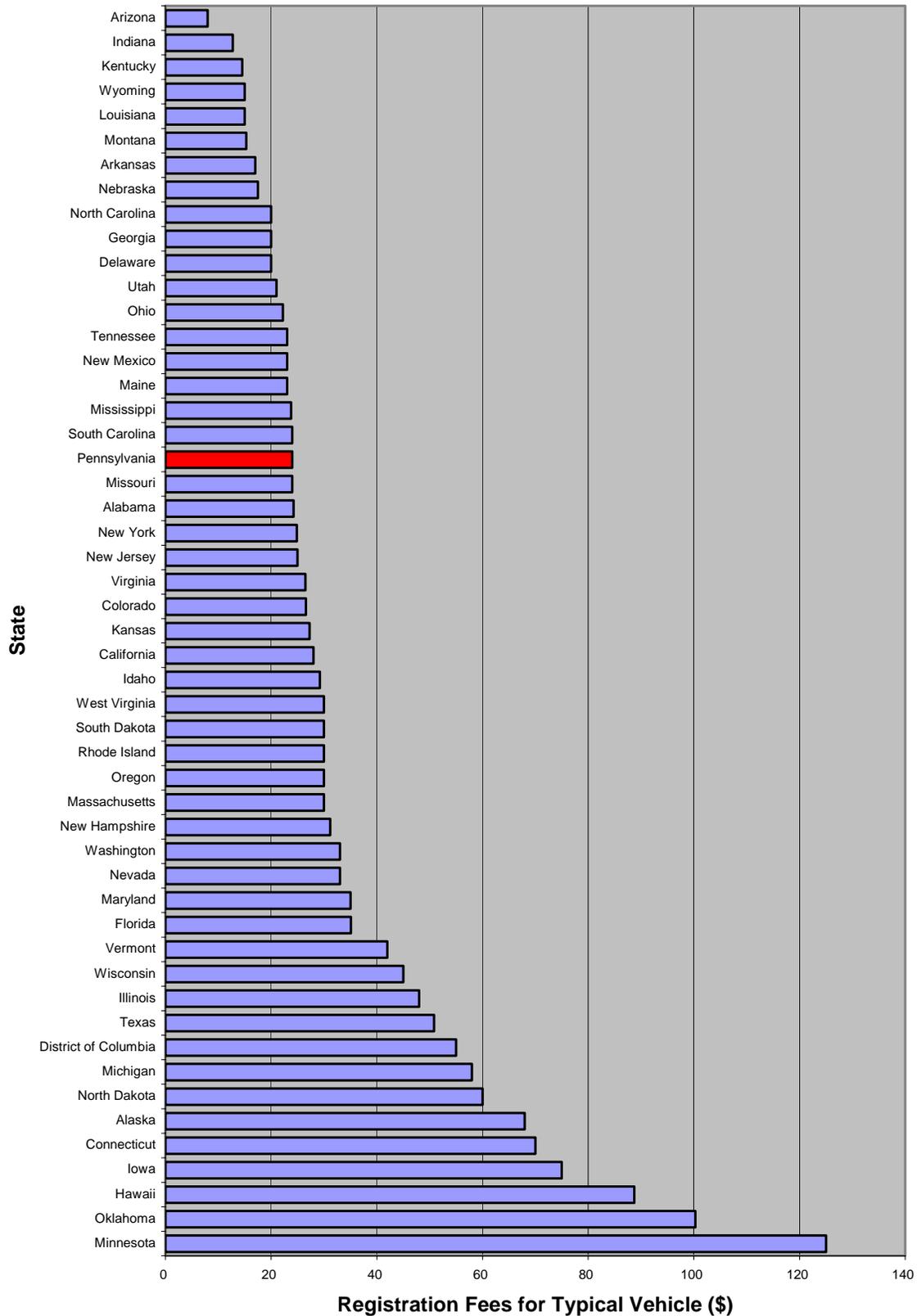
## **Transportation Funding Project**

from non-farm trucks (12<sup>th</sup> highest) and \$78.00 from farm trucks (23<sup>rd</sup> highest). Additionally, the state's farm-truck discount of \$159.00 was 10<sup>th</sup> largest in the country.

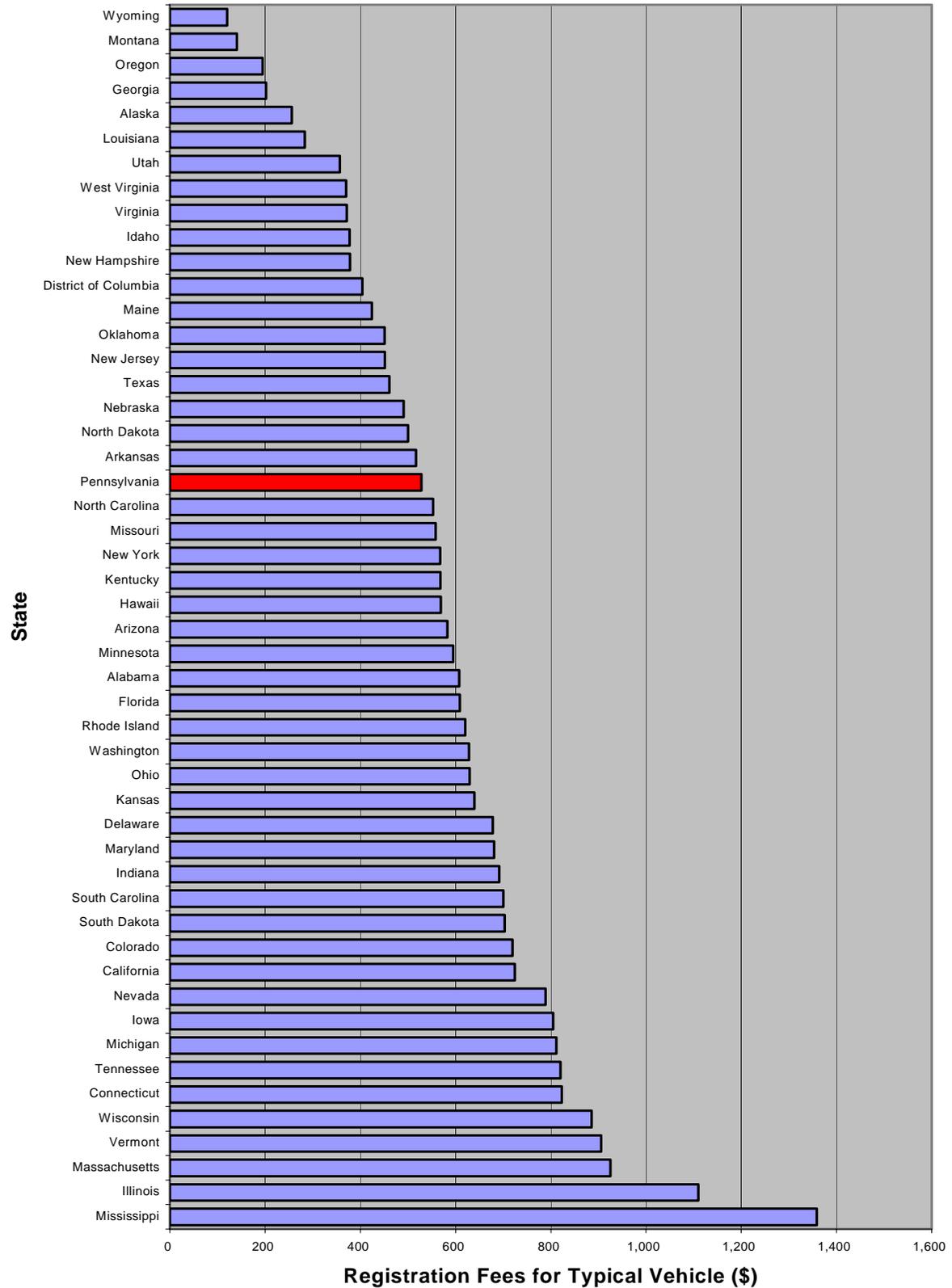
Much like single-unit trucks, in 2001 Mississippi collected the most of any state from a typical three-axle tractor-trailer combination, taking in \$1,358.25 per registration, over \$200 more than the next highest state (Illinois). This amount was over eleven times more than Wyoming's, whose collection of \$120.00 from typical three-axle combinations was the lowest in the country. Twenty-eight states collected between \$400 and \$800 for a single-unit truck registration, with the mean collection falling at roughly \$570 and the median at \$583. Pennsylvania's intake of \$528 was ranked 31<sup>st</sup> in the country.

As for five-axle tractor-trailers, in 2001 Idaho had by far the highest collection rate from a typical vehicle at \$3,218, while Mississippi, a distant second, collected \$2,892. Idaho's collection amount was nearly 27 times that of Wyoming's, whose \$120 total was the same as its collection for three-axle tractor-trailers. The mean collection from five-axles was \$1,230.21, while Pennsylvania's collection of \$1,152 represented the median.

### State Motor Vehicle Registration Fees for Automobiles, 2001



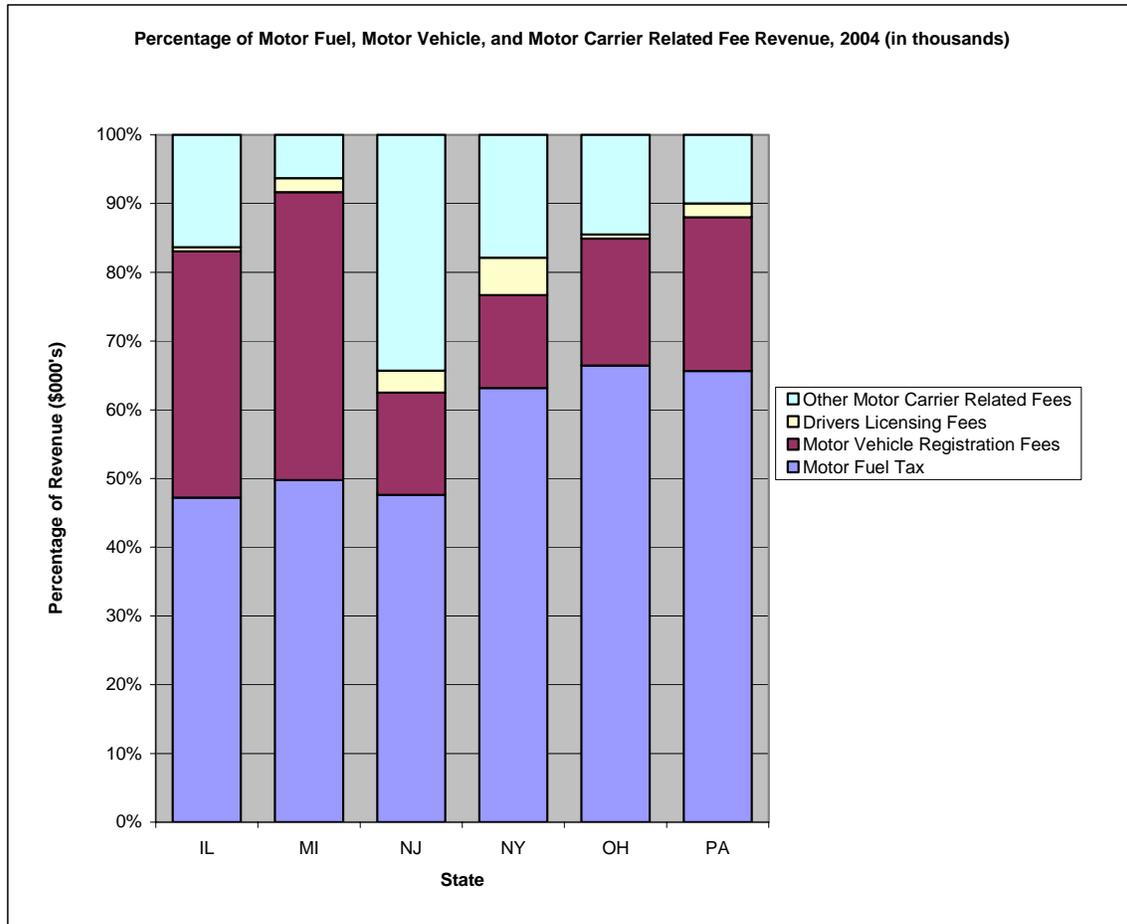
### State Motor Vehicle Registration Fees for Three-Axle Tractor-Trailer Combinations, 2001



## Transportation Funding Project

### Michigan's Vehicle Registration Fees: A Closer Look

Each of the benchmark states relies on motor fuels taxes for a large portion of their overall transportation-related revenue, as evidenced by the chart below. Michigan and Illinois, however, stand out from the other benchmark states when it comes to reliance on motor vehicle registration fees. As motor fuels tax revenue growth diminishes, some states are looking to identify other sources of revenue to supplement or replace motor fuels tax revenue. One possible solution is to restructure registration fees. In Michigan, the revenue collected from those fees is growing with inflation.



Michigan has a unique method of assessing its automobile registration fees. In 1982, the state passed a law instituting the manufacturer's suggested retail price (MSRP) to assess passenger car registration fees. Though the state still uses a combination of empty and gross weight groupings to determine registration fees for single-unit trucks, truck tractors, and semi-trailers, the legislation allowed the state to use car value as an additional assessment tool. Automobiles manufactured since 1984 would be subject to the new standards, while automobiles manufactured before 1984 would remain subject to registration fees strictly according to weight.

To determine specific rates for individual automobiles built after 1984, Michigan established four classes of vehicle value: 1) Up to \$6,000; 2) \$6,001 to \$7,000; 3) \$7,001 to \$30,000; and 4) above \$30,000. To register an automobile with an original, base list value up to \$6,000, owners pay a flat fee of \$30. To register a car valued between \$6,001 and \$7,000, owners pay a flat fee of \$33. To register a car valued

## Transportation Funding Project

between \$7,001 and \$30,000, owners pay a flat rate of \$33 plus \$5 for every \$1,000 value over \$7,000. Finally, to register a car valued over \$30,000, owners pay a rate equal to 0.5 percent of the original, base list price.

In 2001, the range of this fee was \$30 for a vehicle with an MSRP of less than \$6000 to 0.5 percent of the MSRP for cars valued at over \$30,000. For example, at a rate of 0.5 percent of vehicle value, a \$30,000 car manufactured since 1984 would cost \$150 to register, and a \$40,000 car would cost \$200 to register. Each automobile registration fee would also include an additional \$5 processing charge on top of the base fee derived from the value of the car. In 2001, the fee for a typical automobile in Michigan was \$58.

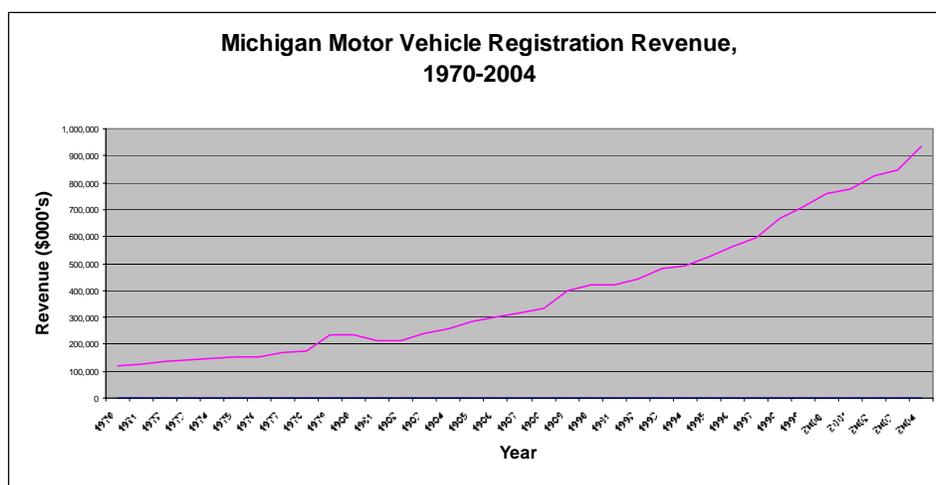
In addition to this value-based determination, Michigan also created a method of tying registration rates to vehicle age, establishing a system by which registration fees decrease by 10 percent for each of the first three years after the car is built. In a sense, this mechanism illustrates recognition of the depreciation in value a car faces as it ages, and the understanding that if registration is tied to vehicle value which depreciates, so too should the registration rate decline. So, if a 2002 model were purchased in 2002, the owner would have paid the initial registration rate assigned to the automobile, and then a progressively declining rate at 10 percent per year for each of the next three years. After that three-year period, the registration rate would have become constant. This depreciation is built in whether the car is actually owned in that period or not. For example, if that 2002 model car were purchased in 2003, the owner would begin by paying a second-year registration rate for the automobile, down 10 percent from its original rate based on its base list price. If, instead, that 2002 model car was purchased in 2006, the owner would begin by paying the three-year, depreciated rate immediately, and that rate would remain constant for the life of the car.

Michigan's vehicle registrations last for one year, at which time the vehicle owner must re-register the car. For automobiles owned by individuals (as opposed to businesses), the car's re-registration is due on the owner's birthday. First-year registration rates are prorated based on when that birthday falls relative to the time of vehicle purchase.

This *ad valorem* system of assigning registration rates is a departure from standard methods of vehicle registration fee assignment. In most states and for most vehicle classes, registration fee schedules were based on either a flat fee or some determination of weight (either gross, empty, or net measures).

In the 2003-2004 fiscal year, Michigan collected \$934,689,000 from motor

vehicle registrations as a whole. The graph above shows the total collected from motor vehicle registrations between 1970 and 2004. Clearly this has been a stable – and increasing – source of revenue for the state.



## Transportation Funding Project

### Registration Rates Based on Automobile Value and Age

Year Sold	Age of Vehicle (years)	With a Base List Price Above \$30,000		With a Base List Price of \$7,001 to \$30,000		With a Base List Price of \$6,001 to \$7,000	With a Base List Price of Up to \$6,000
		Registration Rate	Example: 2003 Acura MDX 4-Door Sport Utility (\$35,700)	Registration Rate	Example: 2003 Chevy Blazer Wagon 2-Door Sedan (\$20,080)	Registration Rate (Flat)	Registration Rate (Flat)
2003	0	0.5% of base list price	178.50	\$33 plus \$5 for each \$1,000 above \$7,000	98.00	\$33.00	\$30.00
2004	1	Initial rate – 10%	160.65	Initial rate – 10%	88.20	\$29.70	\$27.00
2005	2	2004 rate – 10%	144.59	2004 rate – 10%	79.38	\$26.73	\$24.30
2006	3	2005 rate – 10%	130.13	2005 rate – 10%	71.44	\$24.06	\$21.87
2007	4 – Over	Same as 3 years old	130.13	Same as 3 years	71.44	\$24.06	\$21.87

### Funding Alternatives to Replace or Supplement Motor Fuels Taxes

While funding for transportation has grown in the past ten years – outpacing general inflation – the operating costs and construction and maintenance costs for the state’s aging systems have been rising far faster. As Pennsylvania’s roads, bridges, buses, and rail cars reach the end of their useful life, maintenance costs rise and major capital expenditures become necessary. Failure to address these needs will lead to greater deterioration of the state’s transportation infrastructure – and result in even greater costs in the future.

In the end, there likely is no silver bullet, no single answer that will resolve the fiscal woes of Pennsylvania’s transportation systems easily. The experience of other states indicates the fundamental difficulty of offsetting the ongoing erosion of the purchasing power of federal and state motor fuel taxes by means of toll roads, use of debt, public-private partnerships, asset sales, or more cost-effective methods of designing, building, operating, maintaining and financing highways, roads and transit facilities. Though these ideas may help narrow the gap between existing needs and available resources, eventually decision-makers will need to identify dedicated and sufficient sources of revenue to fill the gap – or see an ongoing deterioration of the state’s transportation systems.

#### *Vehicle Miles Traveled Fee and Variable Pricing -*

Imposing a Vehicle Miles Traveled (VMT) fee in place of motor fuels taxes – and, perhaps, instead of many other transportation taxes – has become a topic of interest in recent years. As a result of greater technological capability to gather the information needed to impose such a fee, coupled with encouragement from the federal government, transportation experts are suggesting that VMT fees will become the primary revenue source in the foreseeable future.

Supported by a grant from the U.S. Department of Transportation, the State of Oregon has recently begun a demonstration project to collect VMT information from volunteer vehicle owners at selected gasoline retail sites. Findings from the Oregon experiment will give some indication of the feasibility of imposing a VMT fee on a national basis. In its simplest form, a VMT fee would be equivalent to an odometer tax, paid strictly on the number of miles traveled. Although such a fee would presumably vary by vehicle weight class and use, it would ignore fuel consumption, thereby lessening the connection between

## Transportation Funding Project

conservation and cost. A somewhat more sophisticated fee structure could be calibrated by weight, fuel type, fuel consumption, and exhaust emissions.

Current technology – wireless communication, electronic sensors, the global positioning system and seemingly limitless computing capacity – would, at least in theory, enable the development of a VMT fee system that would integrate variable pricing based on the time, transportation region, roadway and specific lane traveled by every vehicle. Variable pricing (also known as “value pricing,” “congestion pricing” and “peak pricing”) allows the imposition of a differential fee for travel on certain highways and roads, or in certain lanes, at designated times. By means of GPS tracking, this approach to tolling could be extended to account for travel in certain regions, particularly at times of peak congestion, and adjust mileage fees accordingly.

Authorization of a VMT fee in Pennsylvania might provide for an additional regional or local fee to raise revenue for transportation projects of regional or local interest. The fee could be indexed for inflation to avoid the current funding gap that results when revenue from fuel taxes lags behind the escalation in transportation costs. Because construction costs for transportation projects have risen more rapidly than the Consumer Price Index and the Producer Price Index in recent years, the VMT fee might be tied to a more directly related measure of inflation, such as the Civil Works Construction Cost Index System maintained by the U.S. Army Corps of Engineers.

Assuming the ability of transportation professionals to resolve any strictly technological matters in a satisfactory manner, the VMT fee system must address three other fundamental issues: privacy, fairness, and the collection process. Because an electronic collection system would periodically or continuously record the location of every vehicle, many individuals are likely to be concerned about the extent to which public employees or private contractors might be able to track their movements. There is also the possibility that such information might become available to others in some legal proceeding.

The fairness issue relates primarily to the imposition of higher fees on low-income workers who must commute at the same peak periods as other much-higher-income employees. Although individuals who travel a long distance to work, or for some other necessary purpose, might object to shifting all transportation revenue to a VMT fee (versus fixed fees for vehicle registration and drivers’ licenses), the impact of the VMT fee would be similar to that of current motor fuels taxes, the primary state and federal source of transportation funding.

The method of revenue collection could have an important influence on public acceptance of a VMT tax. Currently motor fuels taxes are collected from consumers on a cents-per-gallon basis at the pump, incrementally, built into the price of fuels and concealed from view. Unless the VMT tax is collected on a similar incremental and largely invisible basis (as in the Oregon demonstration program), vehicle owners would have to pay a tax on all the vehicle miles at one time, a not-so-invisible tax that would likely garner public outcry.

## Transportation Funding Project

### Acknowledgements

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#### Organizations

10,000 Friends of Pennsylvania	New Jersey Alliance for Action
4 Rivers Development	New Jersey Department of Transportation
Allegheny Conference for Community Development	New Jersey Future
American Public Transit Association	New Jersey Transit
American Road and Transportation Builders Association	New York Association of General Contractors
Associated Pennsylvania Constructors	New York Department of Transportation
Business Council of New York	Northern Virginia Transportation Commission
Capital Area Metro Planning Organization (TX)	Ohio Contractors Association
Capital District Coordinating Council (NY)	Ohio Department of Transportation
CEO Council for Growth	Ohio Transit Association
Delaware Valley Regional Planning Commission	Pennsylvania Department of Transportation
Eco City Cleveland	Pennsylvania Environmental Council
Federal Highway Administration	Pennsylvania Legislative Budget and Finance Committee
Government Accountability Office	Pennsylvania Legislative Staff
Greater Buffalo Niagara Regional Transportation Council	Pittsburgh Public Works Department
Greater Ohio	Regional Planning Association (NY)
Illinois Association of General Contractors	Regional Transit Authority (Chicago)
Illinois Road and Transportation Builders Association	Smart Growth Institute
Metropolitan Planning Council (IL)	SPC (Pittsburgh MPO)
Metropolitan Transportation Commission (Bay Area)	Surface Transportation Policy Project
Michigan Citizens Research Council	Texas Office of the Governor
Michigan Infrastructure and Transportation Association	The Road Information Program
Michigan Land Use Institute	Tri-State Transportation Campaign
Michigan Suburbs Alliance	University of Texas, LBJ School of Public Affairs
National Conference of State Legislatures	US Department of Transportation

## **Transportation Funding Project**

### **Resources**

American Society of Civil Engineers, “2006 Report Card for Pennsylvania’s Infrastructure,” 2006

Associated Pennsylvania Constructors, “Highway Builder,” Spring 2006

Brookings Institution Series on Transportation Reform, Center on Urban and Metropolitan Policy, “Improving Efficiency and Equity in Transportation Finance,” April 2003.

Reason Foundation “Building Roads to Reduce Traffic Congestion in America’s Cities: How Much and at What Cost?” David T. Hartgen, Ph.D., P.E. and M. Gregory Fields

Bureau of Transportation Statistics, “Transportation Statistics Annual Report” 2005

Center for Enterprise Development (CFED) “2006 Development Report Card for the States”

CEO Council for Growth, “Thinking Outside the Box: Addressing Greater Philadelphia’s Transportation Investment Needs through Public-Private Partnerships,” March 2006.

Clemson University, Strom Thurmond Institute of Government & Public Affairs, Jim Self Center on the Future, “State Transportation Funding Trends and Comparative State Assessment” December 2002

Delaware Valley Regional Planning Commission, Destination 2030: The Year 2030 Plan for the Delaware Valley ([www.dvrpc.org](http://www.dvrpc.org)) June 2005

Economic Development and Transportation Association and County Commissioners of Georgia, “Local Transportation Funding: A Snapshot of State Resources,” by Mathew Hicks, February 2005

Federal Highway Administration, “Status of the Nation’s Highways, Bridges, and Transit: 2004 Conditions and Performance” ([www.fhwa.dot.gov/policy/2004cpr/index.htm](http://www.fhwa.dot.gov/policy/2004cpr/index.htm))

Government Performance Project, Grading the States 2005, Infrastructure Report

Institute of Transportation Studies, “Metropolitan-Level Transportation Funding Sources” prepared for American Association of State Highway and Transportation Officials, December 2005.

National Conference of State Legislatures, “Surface Transportation Funding, Options for States,” May 2006.

National League of Cities, “A New Direction in Transportation Finance: The March Toward User Fees” 2006

North Carolina State University, Institute for Transportation Research and Education, 2004

Pennsylvania House of Representatives Select Committee On Toll Roads, “A Study of Innovations in the Funding and Delivery of Transportation Infrastructure Using Tolls” November 2005

Pennsylvania Legislative Budget and Finance Committee, “State Funding Formulas in Pennsylvania” February 2006

Pennsylvania Transportation Funding and Reform Commission, “Investing in Our Future: Addressing Pennsylvania’s Transportation Funding Crisis,” August 2006

## **Transportation Funding Project**

Regional Plan Association, "Putting the Trust Back in the NJ Transportation Trust Fund," July 2005

Rockefeller Institute, "State Fiscal News" Volume 5, No. 3, May 2006

The Road Information Program (TRIP), "Showing Their Age: The Nation's Bridges at 40" 2002

The Road Information Program (TRIP), "Bumpy Roads Ahead: Cities with the Roughest Roads" 2004

Transportation Construction Industries – PAC, "Which Way Are We Moving?," 2006

Transportation Quarterly, "A Quiet Revolution in Transportation Finance: The Rise of Local Option Transportation Taxes." By Todd Goldman and Martin Wachs. Winter 2003

University of California at Berkley, 2004 National Transit Database

US Government Accountability Office, "Highway Finance: State's Expanding Use of Tolling Illustrates Diverse Challenges and Strategies" June 2006

US Department of Transportation, Federal Highway Administration, Miscellaneous Reports and Data

US House of Representatives, Subcommittee on Highways, Transit, & Pipelines. "Hearing on Understanding Contemporary Public Private Highway Transactions: The Future of Infrastructure Finance?" May 2006.

Washington State Department of Transportation, "Performance Measures Library"

## **Online Transportation Resources**

[downloads.transportation.org/Basso-2006-02-06.pdf](http://downloads.transportation.org/Basso-2006-02-06.pdf)

[mobility.tamu.edu/ums](http://mobility.tamu.edu/ums)

[www.apta.com/](http://www.apta.com/)

[www.bts.gov](http://www.bts.gov)

[www.cts.umn.edu/events/oberstarforum/2005/index.html](http://www.cts.umn.edu/events/oberstarforum/2005/index.html)

[www.discovery.org/scripts/viewdb/filesdb-download.php?id=222](http://www.discovery.org/scripts/viewdb/filesdb-download.php?id=222)

[www.dot.state.tx.us/services/government\\_and\\_business\\_enterprises/horizon](http://www.dot.state.tx.us/services/government_and_business_enterprises/horizon)

[www.fhwa.dot.gov](http://www.fhwa.dot.gov)

[www.fhwa.dot.gov/policy/ohim/hs04/hf.htm](http://www.fhwa.dot.gov/policy/ohim/hs04/hf.htm)

[www.fhwa.dot.gov/ppp/index.htm](http://www.fhwa.dot.gov/ppp/index.htm)

[www.knowledge.fhwa.dot.gov/cops/hcx.nsf/home](http://www.knowledge.fhwa.dot.gov/cops/hcx.nsf/home)

[www.ncppp.org](http://www.ncppp.org)

[www.ncsl.org](http://www.ncsl.org)

[www.nga.org](http://www.nga.org)

[www.nossaman.com](http://www.nossaman.com)

[www.pareportcard.org/more-resources.html](http://www.pareportcard.org/more-resources.html)

[www.reason.org](http://www.reason.org)

[www.tfhr.gov/pubrds](http://www.tfhr.gov/pubrds)

[www.tollroadsnews.info](http://www.tollroadsnews.info)

[www.transact.org/who/steering\\_cmte.asp](http://www.transact.org/who/steering_cmte.asp)

[www.transportation.org/](http://www.transportation.org/)

[www.tripnet.org](http://www.tripnet.org)

[www.unm.edu/~atr/infrastructure-programs.html](http://www.unm.edu/~atr/infrastructure-programs.html)