

Rhode Island's Transportation Future

Reinvesting in our transportation system



to preserve it for future generations

December 23, 2008

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Vision for Transportation in Rhode Island

A well-funded and well-maintained transportation system is vital to our society because it connects the State with the global and regional economies, the home with the workplace, the individual with the community, and all of us with one another. It must equitably benefit all communities, enhance our quality of life, and serve future generations.

About the Blue Ribbon Panel

In recognition of the serious reduction in transportation funding and an aging transportation infrastructure in critical need of repair or replacement, Governor Donald Carcieri established a Blue Ribbon Panel in march of 2008 to assess Rhode Island's transportation needs and to identify options for potential funding sources.

The mission of the panel is:

- to fully understand the needs of transportation financing in Rhode Island;
- to analyze and assess funding options, and
- to recommend funding mechanisms and inform the public of the plan.

Over the course of 10 months, the Panel met 12 times, and held four public meetings. Maureen Gurghigian of First Southwest Company served as an advisory member. Staff support was provided by RIDOT, RI Statewide Planning, and a team of faculty members from the University of Rhode Island. Presentations were made to the Panel by the Federal Highway Administration, RI Turnpike and Bridge Authority, RI Public Transit Authority, First Southwest Company, Rhode Island Statewide Planning, and Rhode Island Department of Transportation.

The full proceedings of the Blue Ribbon Panel can be found at <http://www.dot.ri.gov/blueribbon/index.html>

Governor Carcieri is grateful to the members of the Panel for their time and expertise as well as their dedication to this process.



About the Blue Ribbon Panel

The following members of the Blue Ribbon Panel endorse the recommendations contained within this report with individual comments and clarifications provided in Appendix A.

Jerome Williams

RI Department of Administration
(Co-chair)

Michael P. Lewis

RI Department of Transportation
(Co-chair)

Lloyd Albert

AAA Southern
New England

Robert Cusack

Preferred Asset
Management

Peter Osborn

Federal Highway
Administration

Gary S. Sasse

RI Department
of Revenue

William Sequino, Jr.

Town of
East Greenwich

Keith W. Stokes

Newport County
Chamber of Commerce

Robert A. Weygand

University of
Rhode Island

The following members of the Blue Ribbon Panel have expressed reservations to endorsing the Panel report at this time

John C. Simmons¹

RI Public
Expenditure Council

John C. Gregory

Northern RI Chamber
of Commerce

¹ Susanne Greschner of RIPEC also participated on the Panel.

Problem Statement

Rhode Island, like many other states in the nation, is facing a transportation funding crisis. Across the country, state DOTs are examining alternative means to provide the revenue necessary to address their rising funding needs.

Rhode Island's current transportation funding program is inadequate to properly maintain and operate our infrastructure, and unsustainable moving forward.

In order to maintain our highway system in a state of good operation and repair, the State would need to spend approximately \$640 million per year. Current state and federal funding provides about \$354 million. The funding gap is \$285 million per year. The gap continues to widen as the cost of construction materials increases dramatically, the revenue derived from the gas tax decreases, and the infrastructure continues to age and deteriorate.

Continued borrowing and sole reliance on the gas tax is not the solution. The practice of issuing general obligation bonds every two years to match federal funds is unsustainable. This has resulted in very high annual debt service which has severely limited the amount of state gas tax available for maintenance. Gas tax revenue has decreased significantly over time, as has its purchasing power.

Decades of under-investment in maintenance has resulted in a downward spiral of the condition of the highway infrastructure. Time is a luxury we no longer have. It is critical that the State acts now.

The Rhode Island Public Transit Authority, sole provider of fixed-route bus transit in the State, is experiencing a deficit that is expected to increase in the future due to increasing costs. RIPTA has implemented service cuts in response to this fiscal crisis, but more severe cuts will have to be made if additional funding is not provided. As RIPTA's state funding comes from the state gas tax, its revenues have been decreasing despite a recent surge in demand and record high ridership.

The Rhode Island Turnpike and Bridge Authority (with jurisdiction over Newport Pell Bridge and Mt. Hope Bridge) estimates a \$223 million revenue gap over the next 20 years. Tolls on the Newport Bridge have not been raised since the bridge opened in 1969. Tolls on the Mt. Hope Bridge were eliminated in 1998.

The convergence of these events at this time presents the opportunity to address the problem comprehensively, rather than piecemeal. In these times of dwindling resources, the State must continue to be vigilant in the expenditure of public funds, and ensure efficiency and accountability in this process.

Guiding Principles

1. The State's transportation system assets are crucial to our economic well-being and quality of life and must be properly maintained.
2. The Panel's recommendations are grounded in the overriding need to restore the transportation system to a state of good repair and to maintain the current level of transit operations. System expansions and construction of new facilities can be re-considered during better economic times, when the State's transportation debt has been largely paid down, or when federal funding streams become re-invigorated.
3. Current transportation funding mechanisms are flawed and inadequate, and an entirely new model is needed. The State's practice of issuing general obligation bonds every two years to match federal funds is not sustainable and has resulted in onerous debt service payments. The Panel strongly recommends that this practice be phased out as soon as possible.
4. The transit system is an integral part of the transportation system, and must be part of the overall funding solution. Buses and highways should not have to compete against each other for funding.
5. Transportation funding should be sustainable and reliable and come from a variety of sources, primarily based on user fees. These sources should be robust to maintain the level of funding in the face of economic downturns or with rising inflation.
6. Any new transportation revenue source should be dedicated to transportation projects. The State's transportation agencies must utilize the funds in a cost-efficient and transparent manner, and be publicly accountable for all funds expended.
7. All new funding should be placed in a transportation trust fund dedicated to transportation purposes only. A structure must be in place to provide policy and direction with the flexibility to address the most urgent needs at any given time.
8. The new transportation funding model should consist of new revenues, redirected revenues, and an increase in federal funding¹ combined with cost savings and efficiencies.
9. Rhode Island relies more heavily on federal funds than most states and should strive to contribute at least 50 percent of the overall amount.²
10. Taxes and fees should be borne equitably by Rhode Islanders and visitors to our State, with the extent of use and damage imposed by the use considered.
11. The Panel acknowledges that the current financing model will eventually become obsolete and likely be supplemented or replaced by a mileage based system at the national level, possibly within 15 years.
12. The condition of our transportation system has reached a critical state. The time to act is now.

¹ Future federal funding streams beyond 2009 remain unknown and are beyond the control of the State.

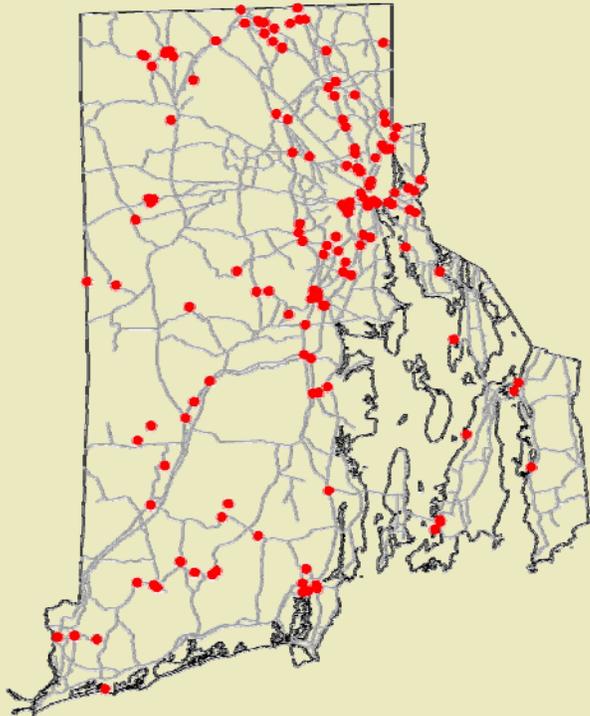
² Rhode Island currently supports 27 percent of its transportation spending with state funds compared to a national average of 63 percent.

Condition of Infrastructure

The lack of state funding for transportation has resulted in the deferral of maintenance and highway and bridge improvement projects. We are now at the point that the condition of the highway infrastructure can no longer be ignored.



Pawtucket I-95 Girder Deterioration



Rhode Island has 164 structurally deficient bridges; 61 of those bridges are posted with vehicle weight restrictions

Pavement Condition



Route 116 is one example of "Poor" pavement in the State

How RI Funds Transportation

There are three main sources for funding transportation in Rhode Island. They include: Federal funds, General Obligation (GO) bonds, and the gas tax. Currently, Rhode Island receives \$220 million per year in Federal funds, \$40 million in GO bonds and \$94 million in gas tax funds. From these sources, Rhode Island allocates \$216 million (Federal funds and the State match) to the Highway Improvement Program, \$96 million (Grant Anticipated Revenue Vehicle (GARVEE) and GO bonds) to debt service, and \$42 million (residual gas tax) to Operations and Maintenance.

As indicated, Rhode Island receives \$220 million in Federal funds (about \$2.20 in Federal highway funding for every \$1.00 paid by Rhode Islanders), based upon an annual funding level established by Congress. This \$220 million is comprised of \$40 million in earmarked funding and \$134 million in flexible funding; \$46 million of the flexible funding is pledged to pay the debt service of GARVEE bonds borrowed to fund five major projects implemented by RIDOT.

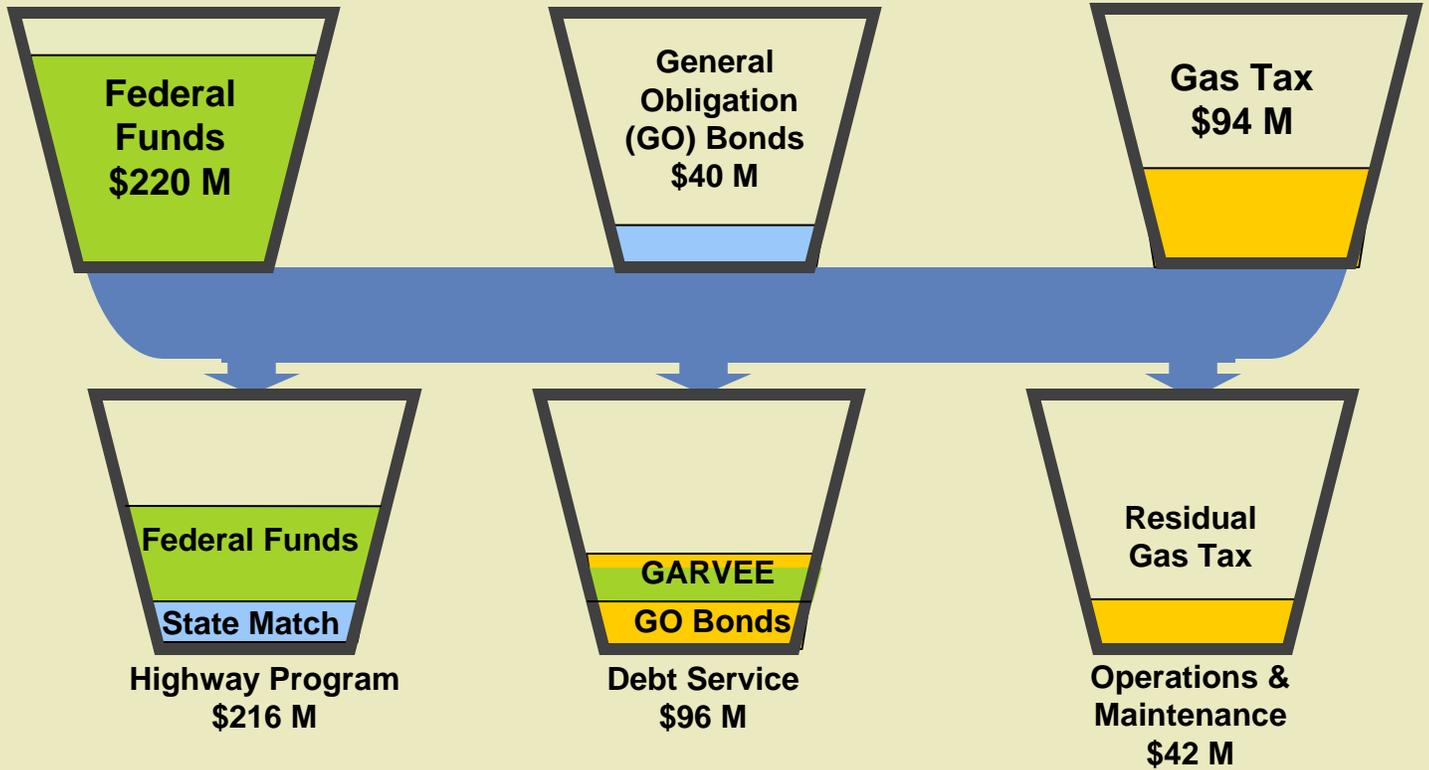
Presently, GO Bonds are used to leverage Federal funds. Rhode Island is currently issuing \$40 million in GO Bonds that have historically been approved by the voters every two years during the November election. Debt service on these bonds is paid by RIDOT from its allocation of the State gas tax.

Rhode Island currently has a gas tax of 30 cents per gallon which currently generates approximately \$137 million. Out of this \$137 million, RIDOT receives \$94 million or 20.75 cents, the Rhode Island Public Transit Authority (RIPTA) receives \$33 million or 7.25 cents, the Rhode Island Department of Elderly Affairs receives \$5 million or 1 cent, and the General Fund receives \$5 million or 1 cent. The revenue received from the gas tax varies with the consumption of gas within the state which varies with the retail price of gas.

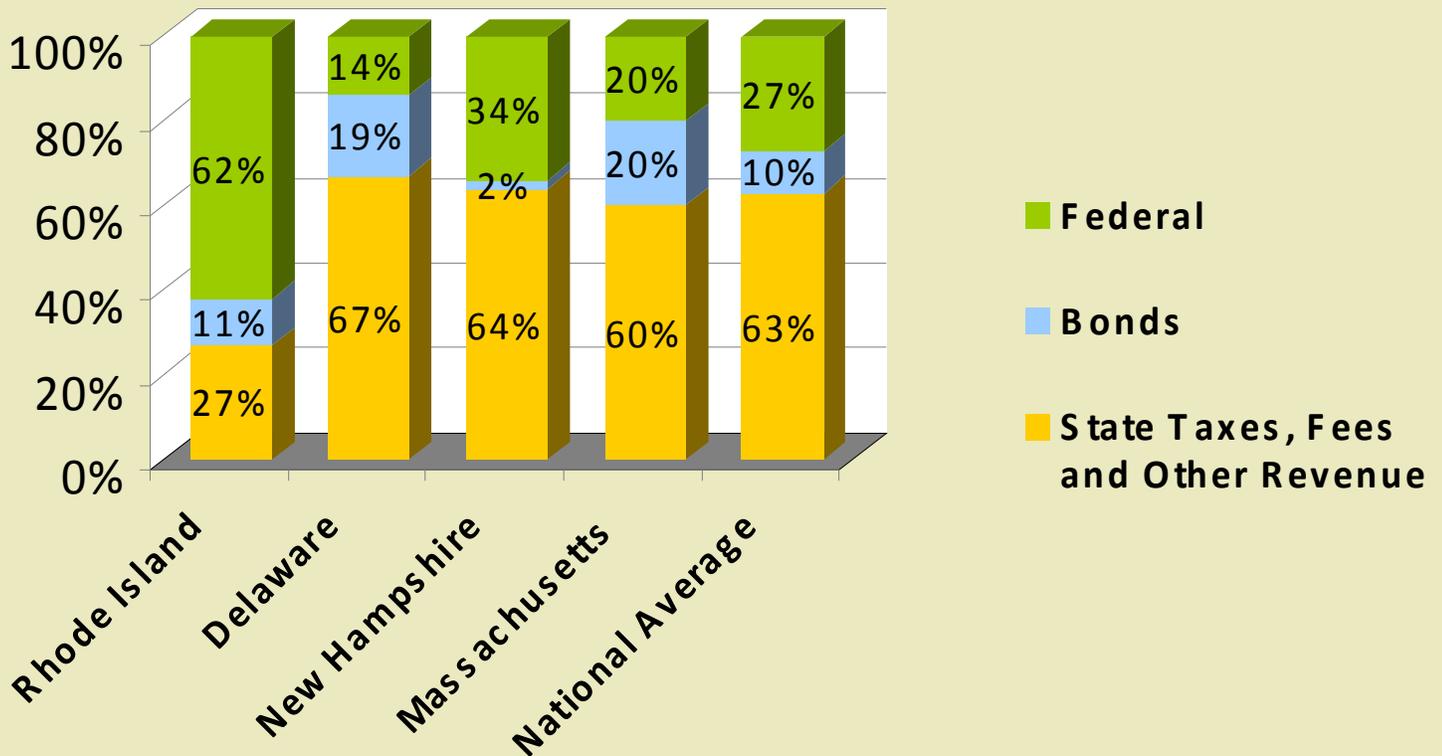
With these three primary funding sources, the current financing system is inadequate as the level of funding provided for transportation is based on available revenues and not on need. There is also an over-reliance on Federal funds, and there are increasing program costs with declining revenues. To further add to the problem, the State has to deal with an aging infrastructure, since the average age of bridges in our state is 50 years, with only four other states having older bridges than Rhode Island. In addition, the cost of highway and bridge construction has increased by 76 percent since January 2001 – much higher than the general inflation rate which was 25 percent, further exacerbating the issue.

State Gas Tax Distribution		
Recipient	Pennies	Yield in millions
RIDOT	20.75¢	\$94
RIPTA	7.25¢	\$33
Elderly Affairs	1¢	\$5
General Fund	1¢	\$5
TOTAL	30¢	\$137

How RI Funds Its Highway Program



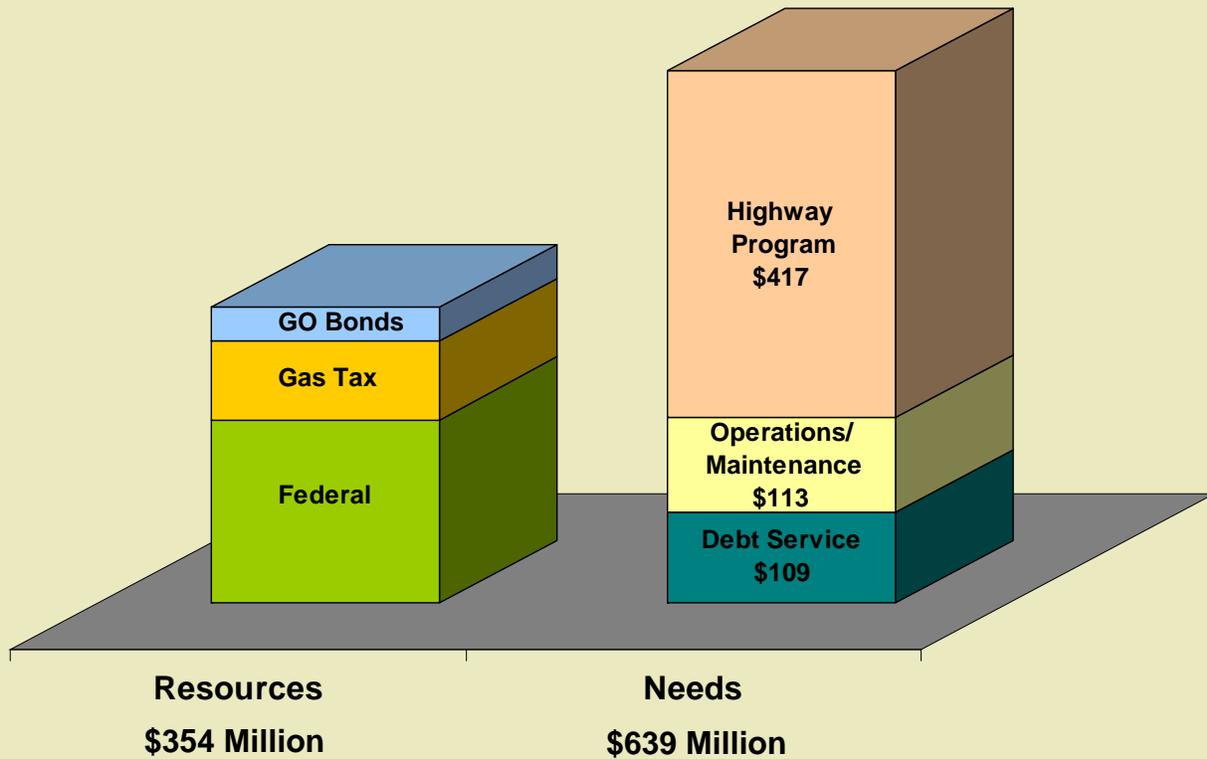
How Other States Fund Highways



Transportation System Funding Gap

To restore Rhode Island's transportation system to a condition of good operation and repair, RIDOT would need approximately \$639 million (2008 dollars) per year in funding for a period of ten years. The annual funding gap between the anticipated funding resources and the estimated funding needs is \$285 million. A detailed needs assessment is provided in Appendix B. RIPTA would receive an additional \$8 million in 2008 and an increasing amount in future years over the current funding level in order to effectively operate and maintain the State's transit system.

RIDOT Annual Funding Need
\$639 Million - For the Next Ten Years
(Millions)



Annual Funding Gap: \$285 Million

Transportation System Funding Needs

Providing sufficient revenue over a period of ten years will restore the State's transportation system to a state of good repair and operation by accomplishing the following:

1. Repair and maintain roads and bridges

To restore and retain the highway system bridges and roads in good condition the State needs to:

- Repair or replace all structurally deficient local and state-owned bridges at the rate of about 26 bridges per year.
- Complete more than 20 major bridge and highway projects, each having a cost greater than \$10 million.
- Totally reconstruct 20 lane-miles of roadway per year.
- Resurface 120 lane-miles of roadway, including replacement of approximately 34 miles of sidewalk associated with these projects.
- Fully fund preventive maintenance activities essential to the cost-effective management of the State's roads and bridges including: bridge painting and washing, deck joint repair, overlay and crack sealing of roadways.
- Fully fund essential operations and maintenance activities including: bridge inspection, drainage improvements, pavement striping, traffic signal repair and replacement, signing and lighting improvements and repair, replacement of damaged hardware, landscaping maintenance and improvements.
- Fully fund essential roadway maintenance activities such as snow removal, grass cutting, minor highway and bridge repairs, and drainage structure repair and cleaning.

Timber shoring on
I-195 bridge in
Providence



Transportation System Funding Needs

2. Provide alternate modes and protect the environment

While the highway infrastructure is being improved, let us not forget the importance of providing travel options to our citizens and of preserving and enhancing the environment. The following steps would be implemented and help to achieve this goal:

- Funding to support the State's transit program and prevent service cuts.
- Full funding for the development and operations of commuter rail.
- Expansion of the State's Bicycle/Pedestrian Program facilities, including the retrofit of roadways with new sidewalks.
- Attainment of air quality conformity and clean air goals through increased funding to the Congestion Mitigation/Air Quality Program which supports rail, transit, ferry, traffic signal coordination, and vehicle emission inspection and maintenance projects.



Washington Secondary Bike Path

3. Complete projects important to cities and towns

While the state agencies have the primary responsibility for developing and maintaining transportation facilities, local communities have an important role as well. Local communities receive little help from the State for maintenance of their transportation infrastructure. Therefore, funding to provide help to the local communities has been included in the State's transportation needs assessment. With the Enhancement program the State does provide some assistance to local communities to improve the environment proximate to transportation facilities. However, the program is oversubscribed and communities have to wait years for the projects to be funded. The State can provide more assistance to local communities by:

- Allocating additional funding to eliminate the backlog in the Enhancement Program so that projects important to local communities can be completed sooner.
- Provide funding for the maintenance and improvement of local roads.

Funding Strategy

Introduction

The Panel was charged by the Governor to present a strategy for obtaining the funding necessary to address the transportation needs of the State for the next ten years. However, after identifying the magnitude of the funding that would be required, and being aware of the fragile condition of the State's economy, the Panel felt it was appropriate to present two scenarios that would provide target funding levels of \$150 million (Scenario 1) and \$300 million (Scenario 2) each state fiscal year.

The funding options included in the two funding scenarios are presented as follows: a general summary of the scenario is given, followed by a schematic graph displaying the funding options included in the scenario over the next ten years. Below the graph is a bar chart showing the total funding anticipated each year for the scenario which builds from each suggested option. Then a table is presented showing the funding expected to be received each year for each funding option along with representative expenditures to be made. Following the scenario descriptions, there is a narrative discussion of each funding action included in the scenarios.

Further study and delineation of many of the funding options will be required prior to implementation. Legislation will be required for nearly all of the options. It should be noted that neither Scenario 1 nor 2 provides funding for major highway system expansions or the development of major new modes.

The options presented in Scenarios 1 and 2 are not mutually-exclusive; funding options from both could be combined or mixed to produce the needed revenue. Whatever options are pursued, it is strongly recommended that all new funding be placed in a transportation trust fund and dedicated to transportation purposes only. The Panel endorses appropriate measures to ensure that the new funding obtained from this initiative will not be redirected to other programs.

It is recognized that a plan to create sufficient organizational capacity must be developed and put into effect prior to implementation of the expanded transportation program that is proposed. Innovative and efficient techniques for bidding, design, construction, and operation must be researched and included as part of the program.

Funding Strategy

Scenario 1 – Target \$150 million

The funding options included in Scenario 1 generally employ methods that have been used previously in Rhode Island or in other states with success, are capable of developing revenue in the short-term, and are easier to implement. Scenario 1 relies on increases in the State's gas tax and vehicle registration fees, and the imposition of a new petroleum products gross receipts tax similar to the one which has been implemented in Connecticut as the primary sources of revenue. Tolling is also proposed for the Rhode Island border with Connecticut on Interstate 95. In addition, Scenario 1 includes the transfer of the Sakonnet River Bridge to the Rhode Island Turnpike and Bridge Authority (RITBA) with the RITBA refunding RIDOT the amount being expended for bridge replacement.

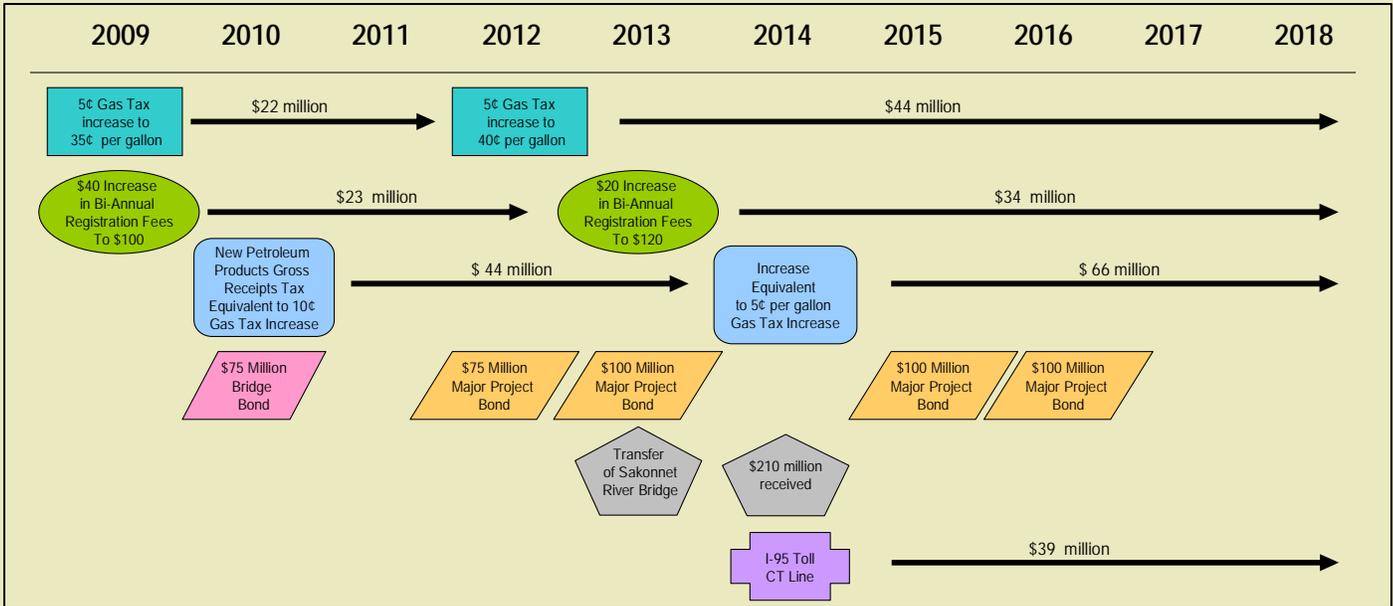
In addition to highway and bridge improvements on the state highway system and on local roads, the new funding from Scenario 1 would be used to address RIPTA's funding shortfall, to replace the loss of RIDOT maintenance funding from increasing bond debt service and decreasing gas tax revenues, as well as to fill the gap in funding for commuter rail expansion in the State. The funding would also be used to match federal highway funds, phasing out the practice of using General Obligation (GO) bonds to provide the match. New revenue bonds are used to implement a program of projects directed at reducing the number of structurally deficient bridges throughout the State.

From 2010 to 2018, Scenario 1 would provide an average of \$143 million in new funding for highway projects and \$23 million in new funding for transit projects each state fiscal year. While not supplying all the revenue necessary to meet the identified transportation needs, Scenario 1 would provide sufficient funds to address RIPTA's shortfall and significantly improve the condition of the highway infrastructure. Assuming no increase in federal funding, the state contribution to the highway program from Scenario 1 would be approximately 53 percent of all funding utilized.

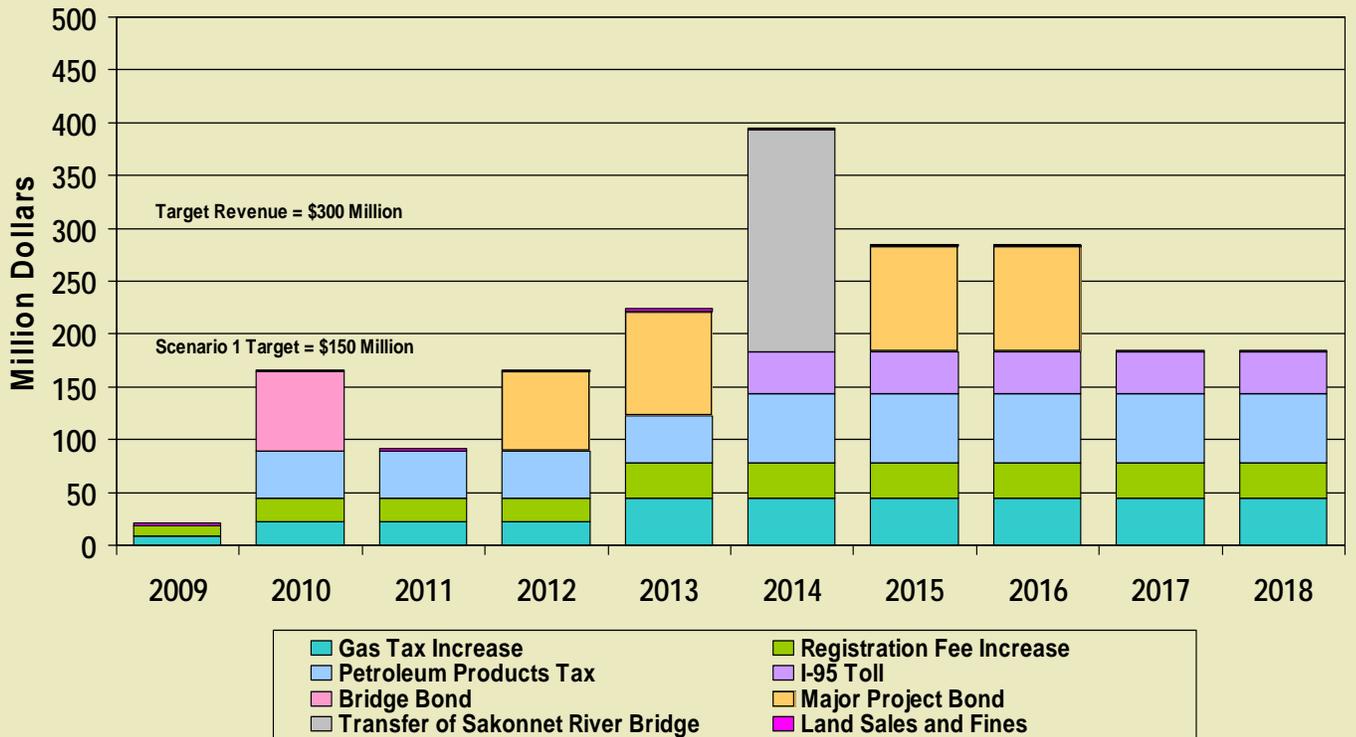
The next three pages display the revenues and expenditures comprising Scenario 1.

Funding Strategy

Scenario 1



Scenario 1 New Revenues & Bond Proceeds
In addition to gas tax and federal funds currently provided



Funding Strategy

Scenario 1 Years 1-5

New Revenues Scenario 1 Amounts in Millions of Dollars	Year 1 2009		Year 2 2010		Year 3 2011		Year 4 2012		Year 5 2013		
	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	
Gas Tax Increase	5¢ Increase Implemented 2/1/09 to 35¢ per gallon	9	Gas Tax Remains at 35¢ per gallon	22		22	Gas tax increased by 5¢ to 40¢ per gallon	44		44	
Vehicle Registration Fee Increase	\$40 increase on bi-annual registration implemented 2/1/09 Rate for passenger car = \$100 every two years. Over vehicles receive a similar increase.	10	Vehicle Registration Increases Remain the Same	23		23		23	Passenger Car registration increases to \$120 every two years. Other vehicles receive similar increase.	34	
Land Sales & Traffic Violation/Overweight Truck Fine Increase	Structure of fine increase to be determined	2		2		2		2		2	
Petroleum Products Gross Receipts Tax			Rate set to equate to the revenue approximating a 10¢ increase in the gasoline tax	44		44		44		44	
Toll on I-95 at the Connecticut Border	Approval obtained from legislature to move forward with design										
Bridge Program Bond Backed by Gas Tax			20-Year Bond	75							
Transfer of Sakonnet River Bridge to RITBA							Completion of Bridge Construction		Transfer of Bridge to RITBA		
Major Project Bond							20 Year Bond	75	20 year bond	100	
TOTAL New Revenues		21		166		91		188		224	
Representative Expenditures Scenario 1											
		Year 1 2009		Year 2 2010		Year 3 2011		Year 4 2012		Year 5 2013	
RIPTA	To eliminate operating deficit	8	To Maintain Existing Service	10		12		13		14	
RIDOT	To replace lost gas tax revenue from yield loss	3	RIDOT maintenance operations	8		10		12		14	
	Resurfacing Projects	9	Resurfacing & Reconstruction	33		40		24		21	
	Study of Tolling I-95	1	Bridge Projects	85		15		18		17	
							Local Roads Program	20		20	
							Bridge Bond Debt Service	7		7	
							Reduction in GO bonding	5		10	
							Toll Plaza Construction	7		8	
				Commuter Rail Warwick Intermodal	30	Commuter Rail Operations	2		2		3
							Major Projects	75		90	
									Major Project Debt Service	15	
Highway Projects		13		126		65		156		170	
Transit - Bus and Rail		8		40		14		15		17	
Debt Service & Reduction in Bonding		0		0		12		17		37	

Funding Strategy

Scenario 1 Years 6-10

New Revenues Scenario 1 (cont.) Amounts in Millions of Dollars	Year 6 2014		Year 7 2015		Year 8 2016		Year 9 2017		Year 10 2018	
	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount
Gas Tax Increase		44		44		44		44		44
Vehicle Registration Fee Increase		34		34		34		34		34
Land Sales & Traffic Violation/Overweight Truck Fine Increase		2		2		2		2		2
Petroleum Products Gross Receipts Tax	Rate set to equate to the revenue approximating a 15¢ increase in the gasoline tax	66		66		66		66		66
Toll on I-95 at the Connecticut Border	Tolls: Passenger Cars \$3 & Trucks \$6 each way	39		39		39		39		39
Bridge Program Bond Backed by Gas Tax										
Transfer of Sakonnet River Bridge to RITBA	Revenue Received from RITBA	210								
Major Project Bond			20 year bond	100	20 year bond	100				
TOTAL New Revenues		394		284		284		184		184
Representative Expenditures Scenario 1 (cont.)	Year 6 2014		Year 7 2015		Year 8 2016		Year 9 2017		Year 10 2018	
RIPTA	To Maintain Existing Service	15		16		17		18		18
RIDOT	RIDOT maintenance operations	16		18		20		22		24
	Resurfacing & Reconstruction	42		40		26		20		16
	Bridge Projects	29		21		22		22		19
	Local Roads Program	20		20		20		20		20
	Bridge Bond Debt Service	7		7		7		7		7
	Reduction in GO bonding	20		25		30		35		40
	Commuter Rail Operations	5		7		8		8		8
	Payback of GARVEE Bonds	135								
	Major Projects	90		115		110				
	Major Project Debt Service	15		15		24		33		33
Highway Projects		197		214		198		84		79
Transit - Bus and Rail		20		23		25		26		26
Debt Service & Reduction in Bonding		177		47		61		75		80

Funding Strategy

Scenario 2 – Target \$300 million

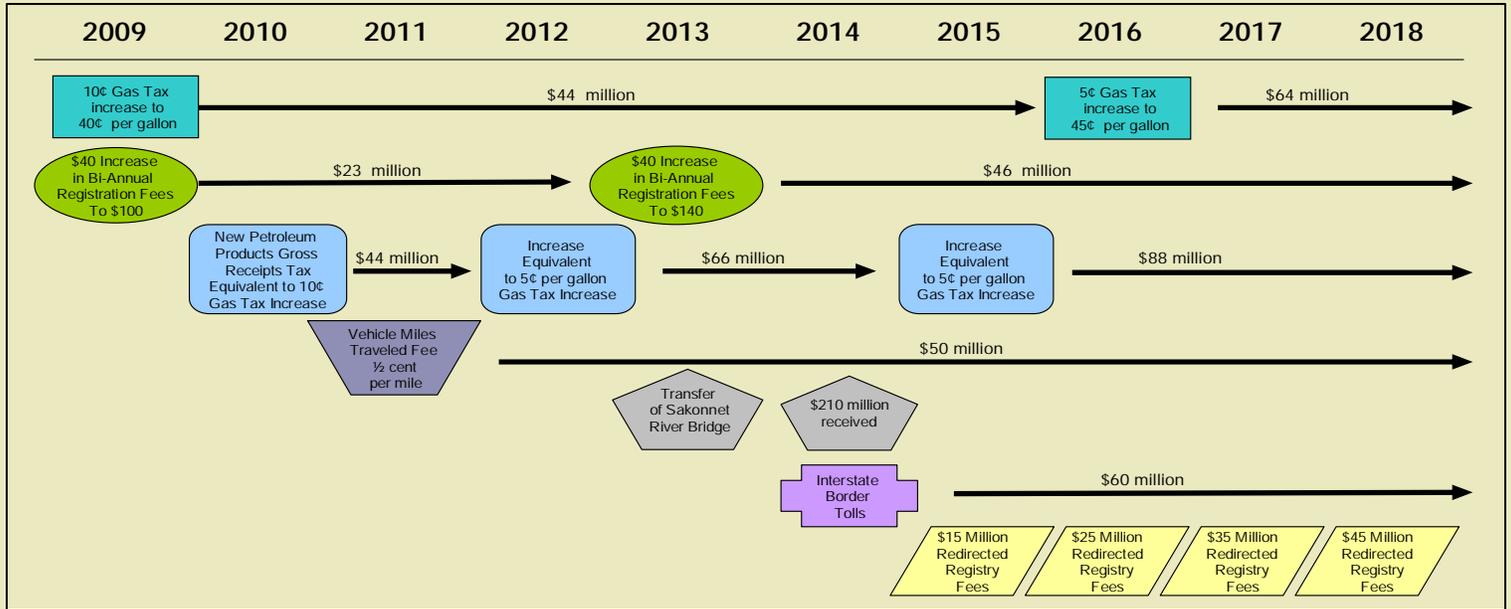
Scenario 2 derives revenue from most of the same sources as Scenario 1 with additional funding shown from the gas tax, petroleum products gross receipts tax and from tolling. The increase in revenue from tolling comes by tolling at all Interstate highway borders of Rhode Island, not just at the Connecticut border as in Scenario 1. Even with the funding increases from these sources, in order to obtain the higher revenue target of Scenario 2, two new funding mechanisms are presented. The first new option is the implementation of an annual vehicle mileage fee on all Rhode Island registered vehicles. The other option proposed is the redirection of existing vehicle registry fees from the State's General Fund to the transportation trust fund for transportation purposes. Both options present serious challenges to implementation. Detailed planning would be required prior to implementation of the vehicle mileage fee program as Rhode Island would be the first state in the nation to implement such a program. The identification of alternate revenue sources would have to occur prior to the removal of existing registry fees from the General Fund for deposit in a transportation trust fund.

From 2010 to 2018, Scenario 2 would provide an average of \$206 million in new funding for highway projects and \$35 million in new funding for transit projects each state fiscal year. Not only is RIPTA's budget shortfall addressed in Scenario 2, but additional funding is provided for the enhancement of RIPTA service. By 2018, Scenario 2 would provide sufficient revenue to meet the identified funding needs if continued over a ten year period. As in Scenario 1, Scenario 2 includes the phase out of the use of GO bonds to provide state match for federal transportation program funding. Unlike Scenario 1, no revenue bonding is proposed for Scenario 2.

The next three pages display the revenues and expenditures comprising Scenario 2.

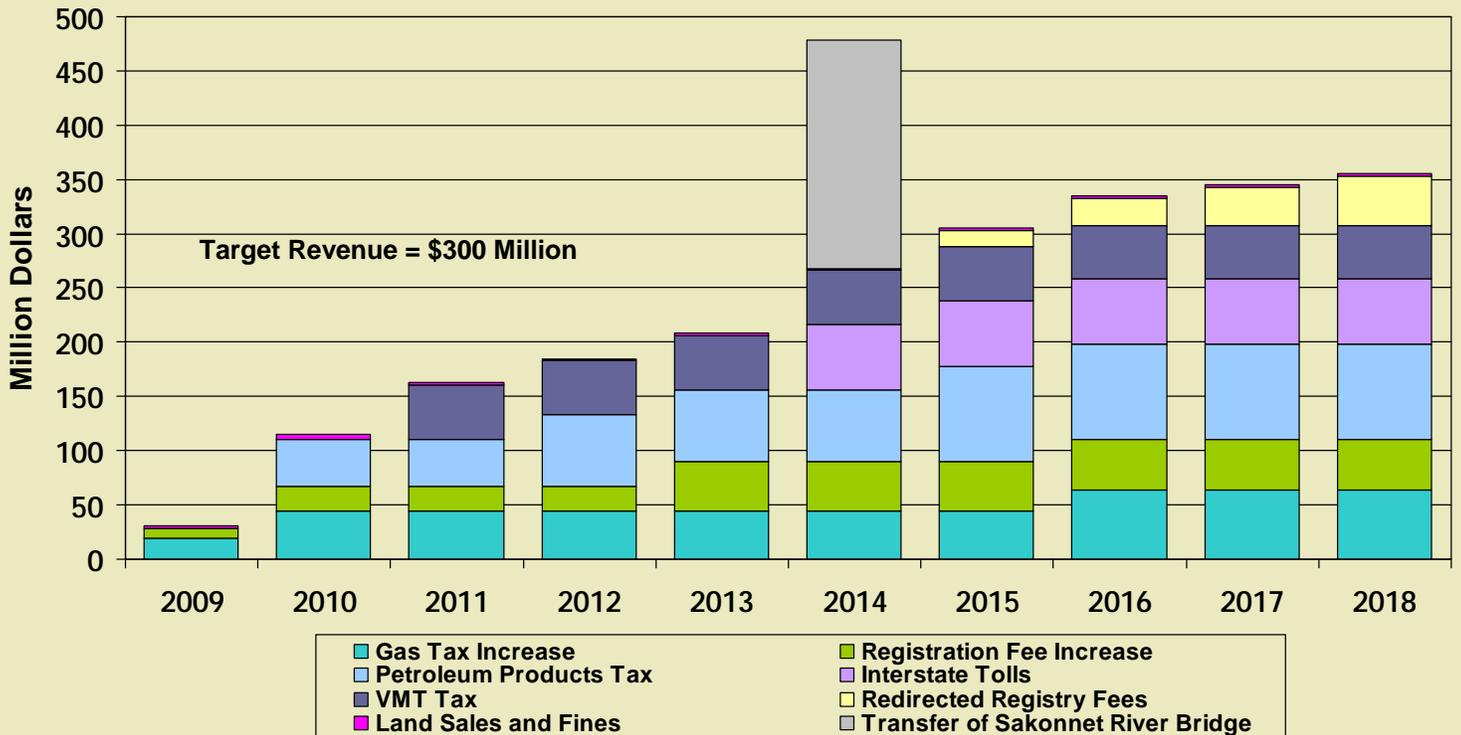
Funding Strategy

Scenario 2



Scenario 2 New Revenues

In addition to the gas tax and federal funds currently provided



Funding Strategy

Scenario 2 Years 1-5

New Revenues Scenario 2 Amounts in Millions of Dollars	Year 1 2009		Year 2 2010		Year 3 2011		Year 4 2012		Year 5 2013		
	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	
Gas Tax Increase	10¢ Increase Implemented 2/1/09 to 40¢ per gallon	19		44		44		44		44	
Vehicle Registration Fee Increase	\$40 increase on bi-annual registration implemented 2/1/09 Rate for passenger car = \$100 every two years. Over vehicles receive a similar increase.	10	Vehicle Registration Increases Remain the Same	23		23		23	Passenger Car registration increases to \$140 every two years. Other vehicles receive similar increase.	46	
Land Sales & Traffic Violation/Overweight Truck Fine Increase	Structure of fine increase to be determined	2		2		2		2		2	
Petroleum Products Gross Receipts Tax			Rate set to equate to the revenue approximating a 10¢ increase in the gasoline tax	44		44	Rate set to equate to the revenue approximating a 15¢ increase in the gasoline tax	66		66	
Toll on the Interstate MA and CT borders - Toll Revenue Split w/ MA & CT	Agreement with MA and CT on Tolling and Cost Sharing		Approvals Obtained from FHWA and Legislature/ Design of Facilities								
Transfer of Sakonnet River Bridge to RITBA							Completion of Bridge Construction		Transfer of Bridge to RITBA		
Vehicle Miles Traveled Fee	Planning Committee Established		Administrative Structure Established for Implementation		VMT Tax set at 1/2¢ per mile	50		50		50	
Redirected Registry Fees											
TOTAL New Revenues		30		113		163		184		207	
Representative Expenditures Scenario 2 Amounts in Millions of Dollars	Year 1 2009		Year 2 2010		Year 3 2011		Year 4 2012		Year 5 2013		
	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	
RIPTA	To eliminate operating deficit	8	To improve existing service	15		18		21		24	
RIDOT	To replace lost gas tax revenue from yield loss Resurfacing & Reconstruction	3	RIDOT maintenance operations	10		12		14		16	
		17		36		37		42		40	
	Study of Tolling	2	Bridge Projects	20		90	Other Highway Projects/Programs	21		25	
							Local Roads Program	20		20	
							Reduction in GO bonding	10		15	
							Toll Plaza Construction	15		15	
							Commuter Rail Warwick Intermodal	1		2	
							VMT Tax Start Up Costs				
								Major Projects	50		50
	Highway Projects		22		66		139		152		166
Transit - Bus and Rail		8		45		19		22		26	
Debt Service & Reduction in Bonding		0		2		5		10		15	

Funding Strategy

Scenario 2 Years 6-10

New Revenues Scenario 2 (cont.) Amounts in Millions of Dollars	Year 6 2014		Year 7 2015		Year 8 2016		Year 9 2017		Year 10 2018	
	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount
Gas Tax Increase		44		44	Gas Tax Increases by 5¢ to 45¢ per gallon	64		64		64
Vehicle Registration Fee Increase		46		46		46		46		46
Land Sales & Traffic Violation/Overweight Truck Fine Increase		2		2		2		2		2
Petroleum Products Gross Receipts Tax		66	Rate set to equate to the revenue approximating a 20¢ increase in the gasoline tax	88		88		88		88
Toll on the Interstate MA and CT borders - Toll Revenue Split w/ MA & CT	Toll Revenue Received	60		60		60		60		60
Transfer of Sakonnet River Bridge to RITBA	Revenue Received from RITBA	210								
Vehicle Miles Traveled Tax		50		50		50		50		50
Redirected Registry Fees			Redirected Registry fees	15		25		35		45
TOTAL New Revenues		477		304		335		345		355
Representative Expenditures Scenario 2 (cont.) Amounts in Millions of Dollars	Year 6 2014		Year 7 2015		Year 8 2016		Year 9 2017		Year 10 2018	
	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount	Notes	Amount
RIPTA	To improve existing service	27		30		33		36		39
RIDOT	RIDOT maintenance	18		20		22		24		26
	Resurfacing & Reconstruction	45		47		47		47		47
	Other Highway Projects/Progra	45		45		45		45		45
	Bridge Projects	47		50		50		50		50
	Local Roads Program	20		30		30		30		30
	Reduction in GO bonding	20		25		30		35		40
	Commuter Rail Operations	5		7		8		8		8
	Payback of GARVEE Bonds	135								
Highway Projects		290		242		264		266		268
Transit - Bus and Rail		32		37		41		44		47
Debt Service & Reduction in Bonding		155		25		30		35		40

Funding Strategy

1. Gas tax increase

The gas tax is considered a user fee. With the volatility of gas prices and the price per gallon now below \$2.00, an immediate tax increase of 5 to 10 cents per gallon is well within the current price range. It has been demonstrated in recent months that drivers will pay upwards of \$3.50, even \$4.00, per gallon. We expect that the price of fuel in Rhode Island will remain competitive with Massachusetts and Connecticut. According to census data the average household in Rhode Island has access to just over two vehicles. For two vehicles each traveling approximately 10,000 miles per year, assuming each vehicle gets 20 miles per gallon, the impact of a 5 cent gas tax increase would be \$50 per year per household.

Scenario 1			Scenario 2		
Start Date	Option	Annual Amount (millions)	Start Date	Option	Annual Amount (millions)
Feb 2009	5¢ increase to 35¢ per gallon	\$22	Feb 2009	10¢ increase to 40¢ per gallon	\$44
2012	5¢ increase to 40¢ per gallon	\$44	2016	5¢ increase to 45¢ per gallon	\$64

2. Vehicle registration fee increase

The registration fee on vehicles in Rhode Island varies by the type of vehicle. For a passenger car, the registration is \$60 every two years. The revenues derived from these registration fees goes to the State's General Fund and is not reserved for transportation purposes as in many other states. The Panel recommends that registration fees be increased to generate revenue for transportation. For the average Rhode Island household with two vehicles, the impact of this fee increase would be \$40 dollars per vehicle every two years, for a total of \$80 per bi-annual vehicle registration period.

Scenario 1			Scenario 2		
Start Date	Option	Annual Amount (millions)	Start Date	Option	Annual Amount (millions)
2009	\$40 increase in bi-annual registration fee	\$23	2009	\$40 increase in bi-annual registration fee	\$23
2013	\$20 increase in bi-annual registration fee	\$34	2013	\$40 increase in bi-annual registration fee	\$46

Funding Strategy

3. Petroleum products gross receipts tax

A petroleum products gross receipts tax would be a new tax to Rhode Island. The tax is levied on the gross receipts from the first sale of petroleum products in Rhode Island by petroleum products distributors. Taxed products include gasoline, aviation fuel, kerosene, diesel fuel, benzol, distillate fuels, residual fuels, and crude oil. The tax also applies to products made from petroleum or petroleum derivatives, such as paint, detergents, antiseptics, fertilizers, nylon, asphalt, and plastics. This tax would be considered a user fee as it would affect the price for users of petroleum products. Connecticut has a similar tax which, together with the gas tax, adds approximately 50¢ per gallon to the price of gas.

The use of both the gas tax and the petroleum gross receipts tax would have a stabilizing affect on the revenues from gasoline consumption in the State. When the price of gas rises and consumption decreases, the revenue from the gross receipts tax would rise just as the revenue from the gas tax decreases. Just the opposite would occur when the price of gas decreases. The impact to an average Rhode Island household would be the same as for the gas tax, or about \$100 for a gross receipts tax equivalent to a 10 cent increase in the gas tax.

Scenario 1			Scenario 2		
Start Date	Option	Annual Amount (millions)	Start Date	Option	Annual Amount (millions)
2010	Tax equivalent to 10¢ increase in gas tax	\$44	2010	Tax equivalent to 10¢ increase in gas tax	\$44
2014	Increase equivalent to 5¢ increase in gas tax	\$66	2012	Increase equivalent to 5¢ increase in gas tax	\$66
			2015	Increase equivalent to 5¢ increase in gas tax	\$88

Funding Strategy

4. Tolling the Interstate

RIDOT traffic flow data shows that at the Connecticut border on I-95 near Exit 1, 66 percent of the traffic is from out-of-state vehicles. These vehicles use Rhode Island's highways free of charge, unless they stop to buy gas. This location is considered to be the most feasible for tolling. Most Rhode Islanders will not be impacted significantly because less than 1 percent of Rhode Island residents commute to Connecticut. These commuters, however, would be affected by the imposition of tolls. The impact of a \$3 toll could be lessened by providing discounts for frequent users of the facility or by providing an income tax credit for tolls paid.

To obtain additional funding, tolling the Interstate at all Rhode Island borders could be pursued. While there would be more difficulty in locating toll lanes and structures, there would be the potential for higher revenues on I-95 and I-195 near the Massachusetts border with their very high volumes of traffic. To implement such a comprehensive scheme of tolling, an agreement would need to be reached with the bordering states which would require a sharing of the revenue. A long range comprehensive corridor plan would also need to be developed. This option is shown in Scenario 2 to help achieve the target funding, but would present numerous difficulties in implementation. The 2014 start date is ambitious.

Scenario 1			Scenario 2		
Start Date	Option	Annual Amount (millions)	Start Date	Option	Annual Amount (millions)
2014	Toll established at the Connecticut border in each direction on I-95 at \$3 per passenger car and \$6 for trucks (or equivalent rate)	\$39	2014 or later	Toll established at all Interstate borders	\$60

Funding Strategy

5. Revenue bonds for bridge improvements and major projects

There is a need to make immediate improvements to the structural condition of bridges within the State as Rhode Island ranks poorly in the percentage of structurally deficient bridges in the nation. For years, bridge work by the State has focused on major roads with high traffic volumes, while smaller bridges have been given a lower priority. When additional revenues are generated for transportation, a revenue bond should be issued to address structurally deficient bridges of local significance using innovative project delivery techniques and possibly including long-term maintenance. Groups of bridges that could be done quickly would be targeted for this option.

While this would increase indebtedness, it is necessary to jump start the bridge improvement program. It also uses bonds for capital projects, rather than continued borrowing to match federal funds, which is the current practice. Bond debt will be repaid from new revenues deposited into the dedicated transportation fund.

There is also a need to address the major bridge and highway projects which have been continually postponed due to lack of funding. Of particular importance are major bridge projects, such as the Route 6/10 Bridges and the I-95 Providence Viaduct, which must be addressed before serious structural deficiencies lead to traffic rerouting impacts that would have major consequences for the entire region. To address these projects as early as possible, revenue bonds should be issued by year 2012 where other funding is not provided.

Scenario 1			Scenario 2		
Issue Date	Option	Annual Amount (millions)	Issue Date	Option	Annual Amount (millions)
2010	Revenue bond issued for bridge improvements	\$75			
2012	Revenue bond issued for major projects	\$75			
2013	Revenue bond issued for major projects	\$100			
2015	Revenue bond issued for major projects	\$100			
2016	Revenue bond issued for major projects	\$100			

Funding Strategy

6. Transfer of the Sakonnet River Bridge to RITBA

RIDOT will be spending approximately \$210 million to replace the Sakonnet River Bridge. Approximately \$135 million of the cost is being borrowed through the Grant Anticipation Revenue Vehicle bonds (GARVEEs) with payback from future federal funds. The State is using revenue bonds backed by a portion of the State's gas tax to provide the 20 percent match to the GARVEE bonds. The remainder of the funding comes from the State's Transportation Improvement Program (TIP) using federal highway funds matched with general obligation bonds. This bridge, along with other major projects, greatly reduces the funding available for other needed transportation improvement projects for the next 12 years.

Due to the volume of traffic, the Sakonnet River Bridge has the potential to generate significant revenue as a toll facility with reasonable toll rates. Each year, it is estimated that about \$23 million could be generated by charging passenger cars \$2.50 and trucks \$5 for each trip.

A major immediate source of revenue for infrastructure improvements could be obtained through the transfer of the Sakonnet River Bridge to the Rhode Island Turnpike and Bridge Authority (RITBA). The amount included here for the revenue is \$210 million, the current estimate of the cost to RIDOT for the Sakonnet Bridge replacement project. The proceeds from the transfer (\$135 million) would be used to pay back the GARVEE and motor fuel revenue bonds used for the project. The remainder of the funds would be used for other highway infrastructure projects.

RITBA would be charged with establishing a toll structure on all the Aquidneck Island bridges sufficient to pay back the bonds used to acquire the Sakonnet Bridge and to provide for the long term maintenance of the three bridges serving Aquidneck Island.

Scenario 1			Scenario 2		
Transfer Date	Option	Annual Amount (millions)	Transfer Date	Option	Annual Amount (millions)
2013	Transfer of Sakonnet River Bridge		2013	Transfer of Sakonnet River Bridge	
2014	Revenues Received from RITBA	\$210	2014	Revenues Received from RITBA	\$210

Funding Strategy

7. Vehicle miles traveled fee

To obtain the levels of funding required by Scenario 2, a new fee is proposed, a vehicle miles traveled fee. This is known in the industry as a VMT tax or mileage fee. The state would impose a flat rate mileage fee on every car registered in Rhode Island. Logistically, drivers report odometer reading biannually when they renew their automobile registrations. Such self-reported odometer readings could be verified in a variety of ways, including as part of already-mandatory auto inspections. A mileage fee is fundamentally fair because it charges drivers according to how much they use the roads.

One notable benefit to a mileage fee would be that of reducing the aggregate number of miles traveled in Rhode Island, thereby reducing greenhouse gas emissions and the emission of other tailpipe pollutants. It could be based on vehicle class or the weight of the vehicle. The fee would be borne entirely by Rhode Islanders, but the burden could be somewhat offset by a toll rate structure which favors frequent users, or rebates Rhode Islanders for the tolls paid on their income tax. It is widely believed among transportation professionals that the gas tax will eventually become obsolete and be replaced by a mileage fee. The impact on the average Rhode Island household with two vehicles would be \$50 per vehicle per year, or a total of \$100 per year, if both vehicles are driven an average of 10,000 miles per year.

Scenario 1			Scenario 2		
Date	Option	Annual Amount (millions)	Start Date	Option	Annual Amount (millions)
			2011	Mileage fee set at ½ ¢ per mile	\$50

Funding Strategy

8. Redirected registration fees

Registration fees in many State's are used for transportation purposes. In Rhode Island, \$46 million is placed annually in the General Fund of the State for non-transportation purposes. In order to obtain the revenue to achieve the funding goal of Scenario 2, registration fees are redirected for transportation purposes beginning in 2015. Because this process would result in a loss to the General Fund which would have to be replenished from other sources, this option is expected to go into effect only if the State's fiscal status has improved so that replacement funding can be provided. This program would be consistent with the desired policy of using transportation revenues for transportation projects.

Scenario 1			Scenario 2		
Date	Option	Annual Amount (millions)	Effective Date	Option	Annual Amount (millions)
			2015-2018	Redirected registration fees	\$15 - \$45

9. Other revenues

Relatively minor amounts of funding can be received by selling excess State land and increasing the fines for traffic violations.

Scenario 1			Scenario 2		
Effective Date	Option	Annual Amount (millions)	Effective Date	Option	Annual Amount (millions)
2010 - 2018	Land Sales – Increase in fines	\$2	2010 - 2018	Land Sales – Increase in fines	\$2

Scenario Outcomes

	Scenario 1	Scenario 2
RIPTA	Eliminate operating deficit and maintain existing service.	Eliminate operating deficit and improve/expand existing service.
RIDOT maintenance and operations	Replace lost gas tax revenue from yield loss and restore maintenance and operations activities to an adequate level.	Replace lost gas tax revenue from yield loss and expand maintenance and operations activities.
Resurfacing and reconstruction projects	Improve pavement over current conditions and provide funding to complete a number of reconstruction projects per year. Pavement conditions will improve throughout the State, but not all pavement will be rated in good condition.	Funding at this level continuing for a ten year period will bring all pavement to a good state of repair. Overall cost of pavement maintenance will be reduced. Fewer reconstruction programs will be required.
Bridge projects	Most structurally deficient bridges will be repaired. No bridges will be posted with weight limits. Cost-effective bridge management will be undertaken with preventive maintenance.	All structurally deficient bridges will be repaired. Functionally obsolete bridges will begin to be addressed. No bridges will be posted. Cost-effective bridge management will be undertaken with preventive maintenance performed in a timely fashion.
Commuter rail operations	The Warwick Intermodal Station project will be fully-funded and operating cost will be provided for commuter operations to Wickford. Studies for expanded commuter rail service will continue.	
Local roads program	\$20 million will be provided annually for a local roads program beginning in 2012.	\$20 million from 2012 - 2014 will be provided annually for a local roads program. From 2015 on, \$30 million annually is provided for a local roads program.
Reduction in debt	The GARVEE debt would be reduced by \$135 million through the transfer of the Sakonnet River Bridge to the Rhode Island Turnpike and Bridge Authority. By 2018, no more transportation debt will be required to match anticipated federal transportation funds. For each year bonds are not utilized, the State saves approximately \$3.5 million per year in debt service over a twenty year period.	
	Debt would only be utilized as revenue bonds to support specific capital projects.	Sufficient revenue is provided so that no new debt would be issued.
Other highway programs	Funding for Bicycle, Enhancement, Congestion Mitigation and Air Quality programs remain unchanged as the State addresses the condition of the existing infrastructure.	Funding for Bicycle, Enhancement, Congestion Mitigation and Air Quality programs is significantly increased.

Benefits from Funding Increase

- Ability to complete projects already committed to
- Reduced overall reliance on federal funding
- Greater ability to match federal funds should increases occur at the federal level
- Phasing out of biennial general obligation bonds
- Diverse and sustainable portfolio of revenue sources
- Equitable contributions among system users
- Responsible asset management
- Job creation in design and construction fields
- Economic impact of a \$2 return for every \$1 spent on transportation improvements
- Greater overall economic competitiveness
- Reliable and functional transportation system vital to our quality of life

Consequences of Inaction

What Happens If the Method of Funding the Transportation System Does Not Change?

- The number of structurally deficient state and locally-owned and maintained bridges will continue to increase, resulting in more posted and closed bridges around the State. Detour routes for posted and closed bridges will increase the costs of driving and impact congestion on the affected roadways.
- Pavement condition will continue to deteriorate, with additional roadway miles falling to the fair or poor category each year. Worsening pavement conditions increase the operating costs to drivers due to higher wear and tear on vehicles.
- Only the most critically needed projects will be able to be completed, and a majority of projects programmed in the TIP will continue to be deferred to some time in the future. Deferred projects will cost more to construct in the future, which will further decrease the amount of funding that will be available for transportation purposes.
- Only the most essential maintenance and preventive maintenance operations will be able to be performed. The rate of deterioration of those items for which maintenance has been deferred will increase, resulting in higher costs for system maintenance in the future. Higher future maintenance costs will negatively impact the program by further restricting the type and amount of work that can be performed in those years.
- Reductions in transit service will have to be made.
- Debt service payments will continue to increase and divert funds from the transportation program.

Call to Action

The world is a different place than it was 10 months ago when the Blue Ribbon Panel was appointed. The economy has been dealt a severe blow, the effects of which are being felt more intensely here in Rhode Island. An economic stimulus may be provided by the federal government, or it may not. The new transportation funding bill may be authorized at a higher level for Rhode Island, or it may not. It is time to take charge of our own destiny. The economy and the quality of life of the people of Rhode Island depend on safe and reliable transportation. Continued deterioration of our infrastructure will only serve to perpetuate the downward spiral we are in. Studies have shown that investment in transportation will yield great economic benefits for the State.

There is no silver bullet to solve our transportation funding crisis. Every strategy recommended by the Blue Ribbon Panel will have its challenges. The Panel is mindful of the impacts that the proposed funding options will have on families in Rhode Island. Some may think that we can not afford to invest in our infrastructure at this time, but we really have no other choice. We must act now, for if we do not, the future costs to rebuild our infrastructure, as well as the cost to the economy, will only be higher.

It is time to do what is right and invest in the future of our State. These are our bridges, our roads, and our buses. Reason and wisdom must prevail, and provide the courage for us to make the investment necessary to preserve our transportation system for future generations.

Next Steps

- Legislation must be drafted and introduced to enact most of the funding strategies, which will lead to full public debate of the issues.
- Several strategies must be studied in more detail (tolling, petroleum products gross receipts tax, vehicle miles traveled fee, transfer of the Sakonnet River Bridge). These studies will provide more opportunities for public input.
- State officials must continue discussions with our federal agency partners and our congressional delegation as the next reauthorization bill is drafted. It is essential that the next federal transportation act be authorized in a timely manner, and at a much higher level than 2009.



State of Rhode Island
Office of the Governor
Department of Transportation
Department of Administration
<http://www.dot.ri.gov/blueribbon/index.html>

Appendix A

Panel Member Personal Statements

Personal Statement of William Sequino, Jr., Town of East Greenwich

The current report on Rhode Island's Transportation future is a prescription for the health of our transportation system that has been unfilled. In 2004, RIPEC issued a report, Rhode Island at the Crossroads, which identified earmarking of user fees, examining the feasibility of tolls and developing a fiscal plan for RIPTA to name a few of the recommendations to improve the State's transportation system. Governor Almond's 1996 Blue Ribbon Panel on Transportation identified less reliance on federal funds and bonds, reallocation of transportation user fees to transportation, develop new sources of revenue and live up to our responsibility for highway and bridge maintenance.

The current Blue Ribbon panel has reconfirmed past recommendations and identified some new revenue sources to address the needs of the State. While the recommendations have been constant, the infrastructure has been deteriorating, especially the bridge infrastructure. There is an urgency to face our transportation needs and funding shortfalls that can no longer be ignored. The time, however, is right for RIDOT, RIPTA and the Bridge and Turnpike Authority to work collectively to address the problem. There are no other alternatives. This report provides funding options for the health of the transportation system from which the process of rebuilding the State's transportation system can begin.

Personal Statement of Keith W. Stokes, Newport County Chamber of Commerce

I support the Governor's Blue Ribbon Panel on RI's Transportation Future Final Report as a planning document that is intended to help guide the Rhode Island Executive and Legislative Branches in making the most equitable and sustainable infrastructure investment decisions for Rhode Island. I endorse the overriding concept that Rhode Island must establish a new funding paradigm that shifts transportation funding from sole reliance on borrowing and gas tax to a more equitable user fee system. I raise the caution that additional cost/benefits analysis must be conducted to measure the unintended economic, social and environmental consequences of increasing tolls, user, and service fees to underwrite Rhode Island's transportation system, particularly recognizing Rhode Island's economic well-being is directly tied to business, customer, and consumer movement and access to the larger New England market.

Appendix A

Panel Member Personal Statements

Personal Statement of Susanne Greschner representing John C. Simmons, Rhode Island Public Expenditure Council

RIPEC appreciates all the work the staff of the Department of Transportation and the Department of Administration have put into this report. We also recognize that resources are currently insufficient to meet the infrastructure needs of the State's Transportation System. However, at this point, RIPEC cannot endorse the report.

As we have stated before, we believe it is important for the State's transportation agencies to provide for a plan that addresses the organizational and institutional capacity to manage the projects. This plan should address, for example, operational and program coordination, as well as effective performance evaluation. In addition, cost-control procedures need to be in place to ensure that the funds are being utilized in a cost efficient manner.

Furthermore, it appears that a federal stimulus package will be forthcoming. Since it seems likely that the federal government will approve these resources fairly soon, combined with the State's current fiscal situation, we believe it is important to await the federal approval. After the impact of the federal stimulus package is fully understood the State's financial needs for its infrastructure should be reassessed.

RIPEC also believes that additional analysis is needed before a petroleum product gross receipts tax can be recommended. For example, some of the questions to be considered include:

- Will all products that contain petroleum be taxed?
- How would such a tax impact the economic competitiveness of businesses in Rhode Island?
- What impact would this tax have on cross-border competition?
- What kind of products or businesses would be exempted from this tax?
- What is the administrative burden to administer this tax?
- Who is ultimately paying the tax?

RIPEC recognizes the need for adequately funding the State's infrastructure needs. However, RIPEC is also committed to its mission as an independent public policy research organization that promotes fiscal responsibility and sound management practices. Therefore, we believe, additional analysis and discussion is needed before these recommendations can be put forward. Furthermore, a plan should be presented that addresses the organizational and institutional capacity of the State's transportation agencies to manage the projects. RIPEC is willing to continue to work with the State Departments to find a solution to the financial and organizational needs of the State's transportation system.

Appendix A

Panel Member Personal Statements

Personal Statement of Lloyd P. Albert, AAA Southern New England

It has been my pleasure to serve on Governor Carcieri's Blue Ribbon Panel for Transportation Funding as a representative from AAA Southern New England. Given Rhode Island's aging transportation infrastructure and an anachronistic transportation funding model, the panel has been challenged with finding innovative and sustainable ways to fund transportation into the next decade and beyond. No matter how one chooses to look at the problem, a new paradigm is required to meet the significant challenges ahead.

The recommendations contained in the final report represent difficult choices that place significant burdens on Rhode Island taxpayers. But because they are generally fair and equitable, and because tough choices must be made to generate the additional funding required to bring our aging infrastructure into good condition, AAA can support the recommendations as written, with one important caveat: namely tolling on existing capacity.

As a general rule, AAA believes that all roads should be toll-free, and that tolls should not be imposed on existing capacity. It is our preference to avoid, as part of the Panel's recommendations, the levying of tolls on the 1-95 Corridor as well as on Route 195 at the RI / MA border. More than anything, our position is influenced by traffic safety concerns arising from the implementation of tolling on high-speed highways.

Eliminating tolling from the funding equation obviously creates a shortfall in Scenarios 1 & 2 detailed in the Panel's report. Some of the shortfall may be made up by the new administration's national stimulus package focusing on public works / infrastructure that appears likely to be implemented in 2009. Other alternative sources could include indexing the motor fuels tax as well as the proposed Vehicle Miles Traveled (VMT) tax.

Indisputably, Rhode Islanders are facing unprecedented transportation funding challenges that must be addressed immediately to avert larger problems in the future. Hopefully, the public education campaign arising from the formation of the Blue Ribbon Panel has had at least some positive impact in terms of making the state's highway users aware of the funding shortfall and the need for all users to pay slightly more in support of our highway system. As a stakeholder in this process, AAA looks forward to the ongoing debate that will move us forward on this issue of critical economic importance.

Appendix B

Highway Program Funding Needs Analysis

▪ *Overview*

Until 2007, no comprehensive determination of highway system funding needs was developed for the preparation of State's Transportation Improvement Program (TIP). For each update of the TIP, RIDOT presented, as required by federal law, a fiscally constrained, not a need based, list of projects. Over the past two years, RIDOT completed a comprehensive review of system needs which drove the need for the establishment of RIDOT's Blue Ribbon Panel on Transportation Funding. This assessment was used by the Statewide Planning Program as input into the development of State's Long Range transportation plan, Transportation 2030, approved by the State Planning Council in August. The needs analysis was presented to the Blue Ribbon Commission by RIDOT and Statewide Planning at the May meeting.

▪ *Needs Summarized*

Based on the presentations from Statewide Planning and RIDOT, the Blue Ribbon Panel finds the Rhode Island Highway Program financial need in 2008 dollars during each of the next ten years to be \$639.5 million. The table below itemizes the annual funding need by expenditure category:

Category	Annual Expenditure Needed in 2008 Dollars
System Restoration	\$ 171,400,000
Pavement Rehabilitation (\$93,400,000)	
Bridge Rehabilitation (\$78,000,000)	
Preventive Maintenance/Operations	\$ 55,000,000
Preventative Maintenance (\$18,500,000)	
Operations (\$32,500,000)	
Major Projects	\$ 125,000,000
GARVEE Debt Service	\$ 57,500,000
Federal (\$50,000,000)	
Gas Tax (\$ 7,500,000)	
FHWA Directed Programs	\$ 38,600,000
Design/Right of Way	\$ 45,000,000
Traffic Projects	\$ 17,500,000
Bicycle Pedestrian Program	\$ 10,000,000
Central Management	\$ 9,400,000
Maintenance Activities/Equipment	\$ 36,000,000
Winter Maintenance	\$ 12,900,000
GO Bond Debt Service	\$ 51,200,000
Local Roads Program	\$ 10,000,000
Total Annual Expenditure Required	\$ 639,500,000

Appendix B

Highway Program Funding Needs Analysis

When inflation of 3% is added each year from 2009 to 2018, the funding needed per year ranges from \$ 659 million in 2009 to \$ 859 million in 2018, averaging \$ 755 million per year.

▪ *System Restoration*

This category includes projects needed to restore the State's highways and bridges and to preserve these assets in good condition. For Bridges, the projects involve rehabilitation and, where necessary, replacement of the 130 structurally deficient bridges. Major bridge replacement projects (costs exceeding \$10 million) are not included in this category but included in the following category for the funding of major projects. For roads, this category includes simple resurfacings and full roadway reconstructions.

The curve below shows in general the deterioration of a transportation asset over time. The goal of asset management is to address the deterioration at the most cost effective point, which is before a road requires reconstruction and a bridge requires major rehabilitation or replacement.

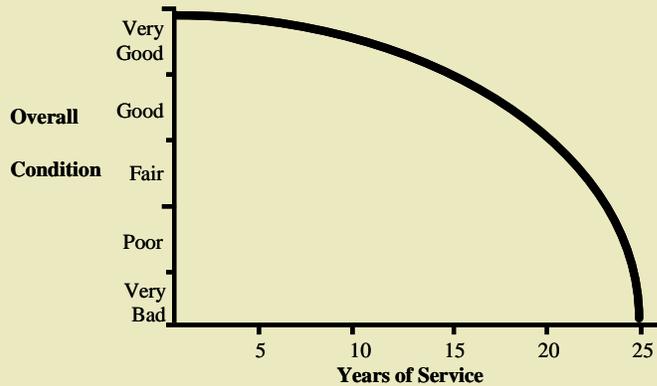
The appropriate preventive maintenance treatment for a road in the early years would be crack sealing and thin surface coating. As the road ages, it will over time require a resurfacing. For a bridge, preventive maintenance actions such as bridge washing, painting and deck joint repair are the early treatments which can prolong the time before major rehabilitation or replacement is necessary. The preventive maintenance treatments described above should be considered operating expenses and belong in the Department's operating budget, not the capital budget.

Unfortunately, the lack of funding has deferred preventive maintenance and timely rehabilitation of many roads and bridges such that the action now required to bring the asset to acceptable condition is to the far right on the deterioration curve where the treatment required will be major and expensive.

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Highway Program Funding Needs Analysis

Generic Asset Deterioration Curve



Pavement Rehabilitation Funding Needs

RIDOT maintains approximately 3,000 lane-miles of roadways. RIDOT's estimate of pavement condition for State road in percent for 1998, 2001, 2004 and the estimated condition for 2007 is shown below:

Condition of State Roadways (Percent)				
Condition	1998	2001	2004	2007 (Estimate)
Excellent:	35.7	38.0	16.8	12
Good:	21.5	34.6	34.2	30
Fair:	21.2	11.7	28.1	32
Poor:	18.8	12.2	12.7	16
Failed:	2.8	3.5	8.3	10

Based on pavement life-cycle, the State would be resurfacing approximately 100 lane-miles per year to maintain the system in its current condition. To improve the condition of the system, 120 lane-miles should be resurfaced. It should be noted that resurfacing projects also include the replacement of the sidewalks along the roadway.

Because many of the State roadways are at the point where full reconstruction is necessary, a minimum of 20 lane-miles of road reconstruction needs to be undertaken each year. The recommendation is a minimum goal given the current condition of the highway system and the demands from the communities for reconstruction work. In making this finding, consideration was given to

Appendix B

Highway Program Funding Needs Analysis

the high cost of highway reconstruction work which not only addresses pavement condition but brings roadways to current design safety standards. This generally involves roadway widening, full depth pavement replacement, major drainage upgrading, utility relocations and additional right-of-way acquisition. The extent of the reconstruction program is also based on the understanding that some roadway reconstruction work would be undertaken in the Major Project funding category discussed below.

The table below lists the annual costs necessary for pavement treatments to bring the pavement condition to good condition within a ten-year period.

Treatment	Length	Annual Cost
Resurfacing	120 lane miles	\$ 26,500,000
Sidewalk Replacement Along with Resurfacing	34 miles	\$ 17,000,000
Full Reconstruction	20 lane miles	\$ 50,000,000
		\$ 93,500,000

Bridge System Rehabilitation Funding Needs

There are 772 bridges in Rhode Island included in the National Bridge Inventory System (NBIS). The State owns and is responsible for maintaining 623 bridges and 149 bridges are owned by others including cities and towns. Rhode Island has one of the oldest inventories of the bridges in the NBIS. Only the District of Columbia, Hawaii, Pennsylvania, Massachusetts and Vermont have older bridges.

The age of the bridges and the deferral of preventative maintenance has resulted in Rhode Island having the worst record for bridge deficiencies of any state in the nation. The table below shows a summary of the current condition of Rhode Island bridges:

	<u>State</u>	<u>Local</u>	<u>Total</u>	<u>Percentage</u>
Structurally deficient bridges	130	34	164	21%
Functionally obsolete bridges	185	37	222	29%
Posted bridges	40	21	61	
Closed bridges	6	5	11	

A **Structurally Deficient Bridge** is a bridge where a significant load-carrying element is found to be in poor or worse condition due to

Appendix B

Highway Program Funding Needs Analysis

deterioration and/or damage. RIDOT has assured that structurally deficient bridges within the State are currently safe.

A **Functionally Obsolete Bridge**, is one where its current geometric characteristics — deck geometry (such as the number and width of lanes), roadway approach alignment, and under-clearances — are deficient compared with current design standards and traffic demands.

RIDOT estimates that approximately 10 bridges become structurally deficient each year. This appropriate goal is for the State to eliminate all structurally deficient bridges within a ten year period, and once that is accomplished, to begin addressing the functionally obsolete bridges.

Funding in the amount of **\$78,000,000** is necessary for each of the next ten years to bring the 164 structurally deficient bridges to good condition. This would include addressing local as well as state owned bridges. This calculation is shown below:

164 bridges / 10 years = 16 bridges currently deficient must be addressed each year
10 additional bridges becoming deficient each year must also be addressed

26 bridges/year x \$ 3 million per bridge project = **\$78 million**

This amount does not include funding for bridge painting or washing which is part of the Preventative Maintenance Program category addressed below. In addition, the amount shown here does not include funds for major bridge replacement projects (over \$10 million) which are included in the major project category below.

▪ ***Preventative Maintenance/Operations***

Over the years, the shortage of State funds and staff for RIDOT operations and maintenance has led to the transfer of the funding of preventative maintenance and certain system operational activities to the Transportation Improvement (capital) Program funded primarily by Federal funds and General Obligation Bonds. These important activities compete for limited funding with Capital Improvement Projects and have traditionally been under funded.

The sufficient funding of **preventative maintenance** activities is essential to cost effective asset management of the State's roads and bridges. The annual amount needed for these activities is \$18,500,00 as listed in the table below:

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Highway Program Funding Needs Analysis

Preventative Maintenance Funding Needs		
Activity	Number Per Year	Annual Cost
Bridge Painting 15-year cycle	20 Bridges	\$ 8,000,000
Bridge Deck Joint Repair 7 year cycle	100	\$ 2,500,000
Bridge Washing		\$ 1,000,000
Crack Sealing	200 lane miles	\$ 1,500,000
Thin Overlays - Surface Sealing		\$ 5,500,000
	Total	\$ 18,500,000

The following table lists the expenses for activities which would normally be undertaken by a fully funded operating budget of a State DOT but due to lack of funding, have been transferred to the Transportation Improvement Program. While funding these activities is absolutely essential, the funding should come from the operating budget, not the federal funded capital program.

System Operations and Maintenance Funding Needs Currently In Capital Program	
Activity	Annual Cost
Bridge Inspection	\$ 3,000,000
Drainage Improvements	\$ 5,000,000
Traffic Monitoring/Traffic Lighting Repair	\$ 3,000,000
Landscaping Improvements - Maintenance	\$ 6,000,000
Pavement Striping	\$ 7,500,000
Repair Damaged Hardware	\$ 2,000,000
Signing Improvements/Repair	\$ 3,000,000
Access Management	\$ 3,000,000
	\$ 32,500,000

- **Major Projects**

Because of the lack of timely preventative maintenance and transportation asset rehabilitation, RIDOT is facing a need to undertake a large number of major highway and bridge rehabilitation and replacement projects within the next 10 years. Below are listed some of the known Bridge projects expected to exceed \$10 million in cost with the costs shown in million dollars.

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Bridge Project	Location	Low Estimate (Millions)	High Estimate (Millions)
Sakonnet River Bridge (Partially GARVEE Funded)	Portsmouth, Tiverton	\$180	\$220
Pawtucket River Bridge	Pawtucket	\$80	\$120
Providence Viaduct	Providence	\$40	\$70
Goat Island Bridge	Newport	\$10	\$20
Central Bridge	Barrington	\$10	\$20
Henderson Bridge	E. Providence, Providence	\$40	\$70
Route 6/10 Bridges	Cranston	\$300	\$500
Cove Bridge # 492	Portsmouth	\$10	\$20
	Total	\$670	\$1,040

In addition to the Bridge projects, the State's Transportation Improvement Program has included a number of major (over \$10 million) Highway and Intermodal projects, some programmed for TIP funding and some which have not been programmed due to the lack of funding. These projects are listed below with estimated costs (in million dollars):

Project	Location	Low Estimate (Millions)	High Estimate (Millions)
I-95/Rt. 4 Interchange Improvements	E. Greenwich, W. Warwick	\$30	\$100
Route 146 Interchange	N. Smithfield	\$15	\$25
Waterfront Drive	E. Providence	\$40	\$75
I-195 Taunton Avenue Interchange	E. Providence	\$40	\$60
Warwick Train Station (RIDOTs Remaining Share)	Warwick	\$130	\$150
Rt. 4/US 1 - Includes New Interchanges	N. Kingstown	\$30	\$50
Route 116/146 Interchange Reconstruction	Lincoln	\$20	\$30
Thurbers Avenue & I-95 Interchange Improvements	Providence	\$15	\$25
Portsmouth Town Center	Portsmouth	\$10	\$20
Route 44 Improvements	Smithfield	\$10	\$20
Post Road Reconstruction	N. Kingstown	\$20	\$30
Pell Bridge Ramps	Newport	\$15	\$20
	Total	\$375	\$605

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The low estimate for the major projects listed above totals \$1.09 billion and the high estimate totals \$1.53 billion. In order to implement these projects in approximately ten years, a budget of **\$125 million** per year is deemed appropriate.

In addition to the projects listed, the TIP includes the following projects in the Study & Development category which communities have requested but for which no work has been undertaken and no cost estimate exists:

Roger Williams Avenue	E. Providence
Atwood Ave.	Johnston
Moshassuck Valley Ind. Access Rd.	Pawtucket
Westminster St.	Providence
Route 138	Richmond
High Street	S. Kingstown
Main Street - Route 115	Scituate
Cedar Swamp Road - Rt. 5	Smithfield
Church Street	W. Warwick
Airport Road Reconstruction	Warwick
Post Road/RI 37 Ramp Improvements	Warwick
Canal Street/White Rock Road	Westerly

▪ ***GARVEE Debt Service***

Since November 2003, the State has issued \$497.4 million of Motor Fuel Revenue bonds and Grant Anticipation Revenue Vehicle bonds (GARVEEs) to advance implementation of the following five major transportation projects:

1. I-195 Relocation
2. Washington Bridge
3. Sakonnet River Bridge
4. Phase II of the Quonset Access Road
5. Freight Rail Improvement Program

GARVEE bonds are not backed by the full faith and credit of the State, but rather by future federal transportation funds to be apportioned to Rhode Island. The annual federal highway apportionments provided to Rhode Island are to be used to cover GARVEE bond debt service. GARVEE bond debt service payments are programmed in the TIP as part of the Highway Improvement Program. The Motor Fuel Tax

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Revenue bond debt service payments are made by a dedication of 2 cents of the gas tax that is apportioned to RIDOT.

Without the issuance of the GARVEE, construction of Phase II of the Quonset Access Road, replacement of the Sakonnet River Bridge and completion of the FRIP would not have been accomplished until 2010 or much later. Completion of both the Quonset Access Road and the FRIP should yield great economic benefits to the State by making the Quonset/Davisville Port and Commerce Park more attractive to businesses. Until it is replaced, the Sakonnet River Bridge will continue to demand the needless expenditure of funds for capital maintenance. In fact, a recent inspection of the existing bridge has forced RIDOT to initiate a project expected to cost over \$3 million over the next two years in order to maintain the current condition of the bridge while the new bridge is under construction.

With historically low interest rates, the State was able to secure very favorable financing. The GARVEE and Motor Fuel Tax Revenue bonds yielded a low 3.52% and 4.04% interest rate respectively for the first issue and 4.12% and 4.48% respectively for the second issue, all significantly lower than the 5.10% anticipated in the legislation authorizing use of GARVEE and Motor Fuel Tax Revenue Bonds. The final issue is scheduled for 2009.

The GARVEE funding does come at a cost. The debt service for the GARVEE bonds must be paid first each federal fiscal year. The GARVEE debt service varies from year to year, but will average about **\$50 million** in federal funds each year. The debt service for the motor fuel revenue bonds must be paid with **\$7.5 million** in gas tax proceeds each year.

▪ *FHWA Directed Programs*

Congress, in enacting federal transportation authorization legislation, establishes certain priority funding categories which it expects States to utilize under the direction of the Federal Highway Administration. Many of the categories, such as those related to bridge, the interstate and National Highway System fund projects directly related to the mission of State Departments of Transportation to develop and maintain highway infrastructure. Other categories have been established to achieve environmental benefits and other specific goals. While State's have some discretion over when to spend the funding provided in these categories, if a minimum level is not expended each year, the funding provided will lapse. Each of these programs is described below with a table following that lists the level of funding required to be spent each

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year to avoid lapse and the amount needed to fulfill the program mission within the State:

Enhancement Program: In the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), Congress established the Enhancement Program. Funds set aside from the Surface Transportation Program (STP) would be committed to projects that would address the environmental impacts on local communities from transportation and highway construction. TEA-21 SAFETEA-LU continued the Program, requiring that 10 percent of STP funds be set-aside and used exclusively for enhancement activities and projects that will increase mobility, protect the human and natural environment, and preserve and increase the livability of communities.

Enhancement Projects must have a relationship to transportation and fall within at least one of the following Transportation Enhancement categories:

- 1) Bicycle & pedestrian facilities;
- 2) Safety & educational activities for pedestrian & bicyclists;
- 3) Acquisition of scenic easements & scenic or historic sites;
- 4) Scenic or historic highway programs, including tourist and welcome center activities;
- 5) Landscape and scenic beautification;
- 6) Historic preservation;
- 7) Rehabilitation and operation of historic transportation buildings, structures, or facilities;
- 8) Preservation of abandoned railway corridors;
- 9) Control & removal of outdoor advertising;
- 10) Archaeological planning & research;
- 11) Environmental mitigation to address water pollution due to highway runoff or to reduce vehicle wildlife mortality while maintaining habitat connectivity; and
- 12) Establish surface transportation museums.

The projects included in the Enhancement Program for the TIP were selected and recommended by RIDOT's Transportation Enhancement Advisory Committee (TEAC), which conducted a thorough solicitation, outreach, and proposal evaluation.

The Enhancement Program is very popular with local communities as the funds tend to be provided to cities and towns to undertake projects of local interest. During the last project solicitation, there were 112 new project funding requests. There is approximately \$40 million worth of projects included in the TIP with only about \$3 million provided each

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year from FHWA. With the State match, a program of **\$4 million** each year can be sustained. Because of the backlog of projects and the local interest in the program, the Statewide Planning tread water scenario included **\$12.75 million** each year for Enhancements to eliminate the backlog and to allow for the funding of new projects.

Congestion Mitigation and Air Quality (CMAQ) Program: The Congestion Mitigation and Air Quality (CMAQ) Program was established by ISTEA, and continued under TEA 21 and SAFETEA-LU. Funds are allocated to states having areas classified under the Clean Air Act as being in non-attainment of National Ambient Air Quality Standards (NAAQS). States may use funding for transportation control measures (TCMs) and programs designed to help implement State Transportation air quality plans and attain the national standards for carbon monoxide, ozone and, in some cases, small particulate matter. CMAQ funding is focused on investment in air quality improvements; it provides funds for projects that expand or initiate transportation services with air quality benefits.

This program was designed with flexible guidelines that allow the CMAQ Program to cut across traditional boundaries and encompass projects and programs dealing with highways, transit, and non-traditional areas, such as vehicle emission inspection and maintenance, traffic operations, and transit operations, to name just a few. Projects include: Transportation Management Center Operations, South County Commuter Rail, RIPTA Operational Initiatives and Passenger Initiatives, Providence Traffic Signal Coordination, Islander Shuttle Train (track improvements) and RI Fast Ferry Facility Improvements at Quonset Point. These projects can be instrumental in helping the State show that the TIP meets the conformity requirements of the Clean Air Act.

The funding provided by FHWA along with the State match required is approximately **\$11 million** per year. Because of the importance of the program to achieve clean air goals, Statewide Planning included **\$16 million** per year in an earlier funding needs analysis.

Recreational Trails/Safe Routes to School Programs: Under the Safe Routes to School program, Rhode Island receives approximately **\$1 million** per year to increase the number of children in grades K-8 who walk or bike to school. Under the Recreational Trails Program, Rhode Island receives approximately **\$800,000** per year to develop trails within the State.

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Planning: Transportation planning occurs through the efforts of the Statewide Planning Program (statewide MPO), RIDOT, and RIPTA. Planning is performed in accordance with a Unified Planning Work Program for Transportation Planning, which must be approved each year by the State Planning Council, and the federal agencies that fund transportation planning. Planning involves long range planning, the development of the TIP, environmental justice analysis and data collection efforts to support the highway program, among other activities.

The funding provided by FHWA along with the required State match is approximately **\$5 million** annually. Because of the need to expand planning for increased program size, Statewide Planning included **\$8 million** per year in an earlier funding analysis.

The table below summarizes the funding needs in the FHWA Directed Programs category:

<i>Program</i>	<i>Funded Needed to Avoid Lapse (millions)</i>	<i>Funding Presented in the Tread Water Scenario (millions)</i>
<i>Enhancement</i>	\$4.0	\$12.8
<i>CMAQ</i>	\$11.0	\$16.0
<i>Recreational Trails/Safe Routes to School</i>	\$1.8	\$1.8
<i>Planning</i>	\$5.00	\$8.00
	\$21.8	\$38.6

- ***Design/Right of Way***

As with any construction program, there is a need to fund the design of the plans and specifications as well as the acquisition of any property needed to implement the project. If the construction program size increases, the costs of design and right-of-way acquisition will also have to increase. These costs, which are not included in other estimates presented in this paper, currently are estimated to be \$26 million on an annual basis. With a fully funded Highway Program, the costs will increase in proportion to the program size. For purposes of this needs analysis, **\$45 million** is chosen as the design/right of way annual need.

- ***Traffic Projects***

While the State addresses the structural integrity of its infrastructure, there still remains a need to address the safety and congestion of the

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Highway System. This category includes projects to eliminate hazardous road conditions primarily at intersections, as well as projects to improve traffic flow by coordinating the signals along arterials. The funding needed for these projects on an annual basis is estimated to be **\$17.5 million**.

▪ *Bicycle/Pedestrian Program*

Rhode Island's Bicycle/Pedestrian Program includes the planning, design and construction of independent bicycle paths (shared use paths) and walking trails, on road bicycle lanes, on-road bicycle routes (signing and striping), and bicycling/pedestrian promotional programs and materials production (i.e. statewide bike map, safety programs).

Rhode Island has become a leader in providing bike paths, bike lanes and bike routes to its residents and visitors. Today there are nearly 50 miles of paved bike paths in Rhode Island and more than 40 miles of paths under design. In addition, there is a growing need to improve pedestrian access within cities and towns statewide.

Over the years much of the funding for the Bicycle Pedestrian Program came from federal earmarks which are not likely to be available in the future. To continue developing our Bicycle and Pedestrian facilities including the retrofit of roadways with new sidewalks, approximately **\$10 million** is believed necessary annually.

▪ *Central Administration*

This category captures the expenditures necessary to administer the State Department of Transportation. The primary use of these funds is for the salaries of Department employees who are not assigned to work on specific capital projects and who are not eligible for salary reimbursement from federal funds. The 2008 expenditure for Central Administration was **\$9.4 million** which is taken to be the continuing annual need.

▪ *Maintenance Activities/Equipment*

This category captures the funding necessary for RIDOT's maintenance of the State's highway system performed by its Maintenance Division. These activities include grass cutting, roadway sweeping, drainage structure cleaning and repair, minor highway and bridge repair, traffic management and fleet management. Snow removal operations are also a responsibility of the Maintenance Division, but a separate category is utilized to report those costs.

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For 2008, a total of \$30.2 million was expended for Maintenance by the Maintenance Division. \$17.6 million was expended on personnel costs, while the other expenses amounted to \$12.5 million. Included in these non-personnel expenses were \$4.1 million for highway lighting electricity, \$2.5 million for vehicle repair and fuel, and \$2.2 million for the lease purchase of the maintenance rolling stock.

For years the budget for Maintenance has not reflected the true need, but has been established as the remainder of RIDOT's gas tax proceeds after debt service, Winter Maintenance, and Central Administration costs have been removed. The Maintenance Division has recently reviewed its budget to determine the funding required to fully achieve its mission and has determined that **\$36 million** is required. The increase funds would go towards an increase in employees (24), additional vehicle maintenance and for materials.

▪ *Winter Maintenance*

Winter Maintenance costs include all expenses incurred by RIDOT for clearing road surfaces during winter operations. These costs include personnel costs, and payments for contractors, equipment and materials. The table below shows these expenses from 2001 to 2007 in million dollars including a 5 year average of expenditures. For purposes of budgetary planning, it is appropriate to utilize the highest 5 year average cost to represent the State's financial need, or **\$12.9 million**.

Fiscal Year	Cost (M)	Hours	Cost/Hour	5 Yr Avg (M)
2001	13.5	430	31,395	8.6
2002	7.3	176	14,477	8.5
2003	14.2	377	37,666	10.0
2004	14.4	340	42,333	11.3
2005	15.0	474	31,646	12.9
2006	8.2	233	35,133	11.8
2007	6.2	196	31,838	11.6

▪ *General Obligation Bond Debt Service*

For many years, the State has used General Obligation (GO) bonds to match federal transportation funds. Currently the State is matching Federal Highway Administration Funds with \$40 million of GO bonds annually. This borrowing has come at a high cost to the State in the form of the debt service that must be paid on these bonds. The table below shows the anticipated debt service required to be paid during

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the next ten years to service the GO bonds as currently scheduled in the State's Capital Budget. The table also shows the debt service which would have to be paid on bonds already issued if the State were to stop bonding to match federal funds.

Year	GO Bond Debt Service Capital Budget Schedule of Issuance	GO Bond Debt Service No Further Issuance
2009	\$41,454,977	\$41,454,977
2010	\$44,394,267	\$40,084,467
2011	\$44,674,369	\$37,054,768
2012	\$52,027,392	\$41,097,990
2013	\$53,634,136	\$39,394,935
2014	\$54,240,868	\$36,691,866
2015	\$55,063,109	\$34,204,307
2016	\$55,703,982	\$31,535,379
2017	\$57,525,767	\$30,047,363
2018	\$53,712,737	\$22,924,533
	\$512,431,604	\$354,490,585

While it is preferable to stop bonding to match federal funds, without a replacement revenue source yet to be determined, the funding needed to pay GO bond debt service will average **\$51.2 million** annually for the next ten years.

- ***Local Road Program***

Municipalities are responsible for the maintenance of approximately 10,000 lane miles of roadways in the State. Where these roads have statewide significance, improvements to these roads can be funded through the State's TIP. However, outside of the Providence urban area, for the most part, improvements to local roads are the communities' financial responsibility as the State has no local road financing program. Municipalities need help in funding improvements to local roads leading RIDOT to recommend that **\$10 million** per year, at a minimum, be allocated that that end.

Appendix C

Alternative Transportation Financing Strategies

Financing Strategy	Pros	Cons	Source	
REVENUE SOURCES				
1. Federal and State Gas Tax Increases	The program and collection mechanism is in place.	Inflation erodes the purchasing power of the revenues.	Ankner, 2003	
	The concept as a "user fee" is well established.	Better vehicle fuel efficiency will seriously undermine the revenue source.	Ankner, 2003	
	Among the attributes that make fuel taxes particularly attractive sources of surface transportation revenues are their (1) low administrative and compliance costs, (2) ability to generate substantial amounts of revenue, (3) relative stability and predictability, and (4) ease of implementation.			NSTP & Revenue Study Commission, 2007
		High gas prices may curtail driving.		Univ. of Maine, 2006
		Gasoline taxes are regressive (shift tax burden to the poor and middle class)		Univ. of Maine, 2006
	The largest source of revenue for highways at the federal and the state levels. Of today's 18.4 cents-per-gallon federal gas tax, 15.44 cents is directed to the Highway Account and 2.86 cents is directed to the Mass Transit Account.			Upchurch, 2006.
		The continued reliance on gas tax is inconsistent with other federal policies such as the energy and clean air policies of the U.S.		Ankner, 2003
		Congress has only raised the motor fuel tax four times since its inception in 1932. The Federal Gas tax has not been increased since 1993. High fuel prices make it even more difficult to raise fuel taxes, even though the tax represents a smaller share of the total price of fuel when prices are high.		Ankner, 2003 NSTP & Revenue Study Commission, 2007
		Increasing public resistance to increases in the gas tax at both federal and state levels		McMullen and Zhang, 2007
		All states have a per-gallon excise tax. They range from 8 cents per gallon in Alaska to 36 cents per gallon in Washington.	About 20 states have increased their fuel tax rates since 2000, but legislative or voter approval for such rate increases is difficult to obtain.	NSTP & Revenue Study Commission, 2007
		Motor fuel taxes may be higher per gallon than in some neighboring states. Opponents of fuel taxes generally raise the issue of diversion of purchases to neighboring states.	NCHRP #102, 2006	
		Motor fuel taxes by themselves are not equitable among vehicle classes, since the largest vehicles may pay less in fuel taxes relative to the costs imposed on highways.	NCHRP #102, 2006	
Users Perspectives	Two-thirds of Washington residents would support a tax increase only if a higher priority was given to transit and other transport choices.	Stark opposition to raising fuel taxes as a way to fund roadway improvements exists in Atlanta, Georgia, Oklahoma, and Wyoming.	Zrud and Arice, 2008	
2. Inflation Responsive Gas Tax	Currently about 5 states index their fuel tax to some measure of inflation.		NSTP & Revenue Study Commission, 2007	
	Combats erosion in purchasing power.		Univ. of Maine, 2006	
	Avoids the politically charged situations that often accompany legislated increases in tax rates.		Univ. of Maine, 2006	
		Many see indexing as just a backdoor way of increasing the fuel tax.	NSTP & Revenue Study Commission, 2007	
3. Sales Tax on Fuel	Several states impose a tax on the sales price of fuel.	Motor fuel taxes are mildly regressive among income groups. Basing the rate on the sales price of fuel would make them more regressive.	NSTP & Revenue Study Commission, 2007	
		The volatility of fuel prices would adversely affect the public acceptability, especially when fuel prices are rising.	NSTP & Revenue Study Commission, 2007	
4. International Fuel Tax Agreement (IFTA)	IFTA is an agreement among states to report fuel taxes by interstate motor carriers.			
5. Encumber RR Diesel Fuel Taxes for Transportation Purposes	It is already being collected	Railroad advocates argue the money is already needed for rail improvements and should be dedicated for rail.	Ankner, 2003	
6. Distance-Based Registration Fees	Variable registration fee based on vehicle miles traveled.	Evasion.	Univ. of Maine, 2006	
	Consistent with other policy objectives (reduction of pollution, road wear, etc.)		Univ. of Maine, 2006	
	Motorists able to control own savings/costs by adjusting driving habits.		Univ. of Maine, 2006	
7. Value-Based Registration Fees	A registration fee based on value can be structured as a personal property tax and be deductible from Federal income.			
8. Emission Fees	Levy variable user fees dependent upon vehicle energy efficiency and environmental emissions.	Availability of information on emissions of all vehicles makes/ models.	Univ. of Maine, 2006	
	Consistent with other policy objectives (reduction of pollution).	May face substantial resistance from consumers as well as auto manufacturers.	Univ. of Maine, 2006	
	Promote citizen awareness of vehicle emissions.		Univ. of Maine, 2006	
9. International Registration Program (IRP)	Under IRP carriers pay registration fees through their base jurisdiction (home state) to jurisdictions in which they travel according to the percent of fleet miles traveled and the fee schedule operative in each jurisdiction.		Purdue Univ., 2005	
	IRP distributes the registration revenue among the member jurisdictions. Each member jurisdiction receives its proportional share of registration fees for each vehicle registered under the IRP fleet.		Wisconsin Dept. of Transportation, 2008.	
10. Container Fees	Container fees to help pay for transportation infrastructure improvements.		NCHRP #102, 2006	

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Alternative Transportation Financing Strategies

Financing Strategy	Pros	Cons	Source
11. Traditional Tolls	This directly correlates to the user and the services they want from the transportation system.	Local travel and deliveries would need to be addressed before placing tolls on the Interstates.	Ankner, 2003
	In the past 10 years, 30-40 percent of new limited access highway mileage has been financed at least in part through tolls.		NSTP & Revenue Study Commission, 2007
	Allowing federal funds to be used to place tolls on the Interstate System, with revenues share by the states and the federal government, would allow more "user fees" to be generated. The federal share could be dedicated to intermodal connections on and off the Interstate.	Key question is where to place the tolls and how often to charge drivers.	Ankner, 2003
	Tolls can vary according to the level of capacity and service on the roadway in real time.		Ankner, 2003
		Tolls are regressive (shift payment burden to the poor and middle class).	Univ. of Maine, 2006
		Effects safety of surrounding roads and increases their utilization.	Ortiz, 2007 and Swan, 2007
		Fees may be used to finance projects not related to the tolled facility.	Univ. of Maine, 2006
	It potentially can leverage existing revenue sources by increasing private-sector participation and investment through such arrangements as public-private partnerships.	Challenges to tolling include obtaining sufficient statutory authority to toll, adequately addressing the traffic diversion that might result when motorists seek to avoid toll facilities, limitations on the types of roads that can be tolled, and coordinating with other states or jurisdictions on a tolling project.	GAO, May 2008
Users Perspectives	Most users support traditional tolling to complete construction (North Carolina, Orange County California, Chicago, IL, and Tyler, TX).	66% of Chicago residents believed that stopping at the toll booth was a bigger hassle than paying toll itself.	Zmud and Arice, 2008
	Chicago residents did not want to pay higher gas taxes that would result from elimination of tolls.	Very few users believe peak pricing is not an effective way to deter congestion (New York Metro and Miami).	Zmud and Arice, 2008
	A fair amount of users believe that tolls are adequate ways to handle increasing traffic (San Clemente, CA).	Austin, Texas residents believed tolls were a good method for new construction but not for existing roads.	Zmud and Arice, 2008
	New York residents believe automated toll collection device (e.g. ez-pass) users should be afforded discounts over regular tolls.	69% of Maine residents opposed using toll revenues to fund other state budget needs.	Zmud and Arice, 2008
	High support found for traditional tolling if it meant needed roads could be constructed much quicker.	53% of Wisconsin residents did not want to turn all state roads into toll roads.	Zmud and Arice, 2008
		Opposition to tolling existing lanes is greater than to tolling new lanes. The greatest opportunity for tolling existing lanes may come with tolling Interstate facilities when they must be reconstructed.	NSTP & Revenue Study Commission, 2007
		A public objection is that tolls require users to pay twice, through a gas tax and through a toll, for the opportunity to travel on a roadway.	Upchurch, 2006.
12. Weight-Distance Tolls	Heavy goods vehicles, commercial trucks, must pay facility toll or per mile rate based on weight (or some variation such as axle configuration).	Possible jeopardy to trucking reliant industries.	Univ. of Maine, 2006
13. Toll Facility Leases	Major sales of the operating rights for toll road facilities have provided huge infusions of cash to state and local governments. The Chicago Skyway was leased for 99 years for \$1.82 billion. The Indiana Toll Road has been leased for 75 years for a lump sum of 3.8 billion.	This form of financing is available only to states and jurisdictions with toll facilities that generate revenues high enough to be an attractive investment for a private operator.	Upchurch, 2006.
	A few existing toll facilities have been leased to international companies, substituting, short-term revenue gains by public agencies for lesser longer-term revenues.		NCHRP #102, 2006
14. Vehicle Miles Traveled (VMT) Tax	A VMT tax would supplement motor fuel taxes. It is fair in that those who use the system the most pay for the system.	There is difficulty in collection.	Ankner, 2003
	The tax could also be adjusted to the weight of the vehicle, in addition to the VMT, since there is a correlation between weight and road condition.	There could be strong arguments about the use of technology and privacy.	Ankner, 2003
	The tax could also be tied to fuel efficiency so that automobiles consuming or polluting the most pay the most.		Ankner, 2003
	If a VMT tax completely replaced a gas tax, a tax of 1 cent per vehicle-mile for light vehicles would generate as much revenue as a state gas tax of 20 cents per gallon.		Upchurch, 2006.
	A vehicle mile tax for road users may well have the additional social benefit of reducing emissions. Also, greater economic efficiency can be achieved by turning fixed costs, such as vehicle insurance, into variable costs.	There are public concerns regarding social equity and distributional effects of a vehicle mile tax. For example, in Oregon, there are several concerns expressed regularly to policy makers. First, it has been suggested that the change in tax structure would shift the burden of the tax to lower income groups. Second, there is a concern that the change in the tax structure will shift the burden of the tax to rural areas from urban areas, creating regional or geographic inequities. Third, such a shift in tax structure will discourage people from purchasing and driving alternative fuel vehicles, hybrids in particular.	McMullen and Zhang, 2007
	Gradual implementation possible; lower public resistance.	Difficulty in capturing revenues from out of state travelers.	Univ. of Maine, 2006
	It may rely on technology that tracks miles traveled or may be based on odometer readings garnered at state-mandated inspections or registrations.	Possibility of high levels of evasion if charges are based on odometer readings.	Univ. of Maine, 2006
		Implementing a VMT tax or fee has a number of institutional issues. Receiving frequent payments from operators of every registered vehicle would be a large increase in the tax burden for Federal and State tax collection agencies.	NSTP & Revenue Study Commission, 2007

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Alternative Transportation Financing Strategies

Financing Strategy	Pros	Cons	Source
15. Transportation Sales Taxes	Implementation of a sales tax at local or state level. Earmark revenue for transportation.	Possible revenue instability during recessions.	Univ. of Maine, 2006
		State legislation must be in place that allows local option taxes. Commonly, local option taxes require voters' approval.	NSTP & Revenue Study Commission, 2007
	It ensures that all users pay.	No incentives for decreasing use of the transportation infrastructure.	Univ. of Maine, 2006
	Revenue obtained from non-residents.	May drive consumers to seek fuel outside the taxed area.	Univ. of Maine, 2006
	Sales taxes have a broad base and because they apply to the purchase of many goods, the rate of increase can be relatively low. This tends to make sales taxes more popular than increases in user fees, which are more concentrated because they fall on fewer people.	Sales taxes do nothing to encourage more efficient or socially responsible use of the transportation system. Furthermore, cities and towns need local sales and property taxes to provide essential services for which user charges are unavailable or undesirable, such as for schools and libraries. Local transportation taxes present challenges for public policy.	Wachs, 2003
16. Regional Transportation Impact Fees (RTIF)	RTIF are one-time charges placed on new residential and/or commercial development to finance the cost of new or improved public transportation infrastructure.	Without the proper climate and political will, it would be next to impossible to justify levying a fee on new development unless the majority of the communities in the region are experiencing the tensions of growth.	Swearingen, 2004
	The need for development to pay its fair share.	RTIF may face difficulties when the details regarding policy, administration, and procedural issues are debated. These issues can be subjective in nature.	Swearingen, 2004
	A properly designed RTIF program can fortify the relationship of land-use policy and transportation planning. It is possible that a well-constructed RTIF program could promote different types of development. For example: projects representing revitalization and/or in-fill can be made exempt from the RTIF. Also, exempting certain size single-family homes to foster more affordable housing for first-time owners.		Swearingen, 2004
		While impact fees are directly charged to developers, they pass those charges to buyers, increasing the cost of real estate.	NSTP & Revenue Study Commission, 2007
17. Special Assessments	Special assessments are charges placed on property because the property benefits from certain public improvements. Those public improvements may include, but are not limited to, streets, sidewalks, sanitary sewers, waterlines, and traffic signals. The special assessment process begins with the establishment of a benefit district, including its boundaries and the proposed public improvement, the estimated cost of public improvement and the method of assessment of the costs of the public improvement to property within the district.		
18. Tax Increment Financing (TIF)	Bonds are issued to finance public infrastructure improvements, and repaid with dedicated revenues from the increment in property taxes as a result of such improvements.	Communities and local agencies could argue that implementation of TIF would take away revenues that otherwise would be used to meet other public needs.	NCHRP #102, 2006
		Implementation is subject to enabling legislation that allows the formation of assessment districts. They may require voters' approval from district residents and business owners.	NSTP & Revenue Study Commission, 2007
INNOVATIVE MANAGEMENT OF FEDERAL FUNDS			
1. Advance Construction/Partial Conversion of Advance Construction (AC and PCAC)	AC allows a state to begin a project even if the state does not currently have sufficient Federal-aid obligation authority to cover the Federal share of project costs. Under PCAC, a state may elect to obligate funds for an advance-constructed project in stages.		FHWA, April 2002
	AC and PCAC are cash flow management tools that allow states to begin projects with their own funds and only later convert these projects to Federal assistance.		FHWA, April 2002
2. Matching Strategies: Tapered Match	Tapered match enables the project sponsor to vary the non-Federal share of a Federal-aid project over time, as long as the Federal contribution toward the project does not exceed the Federal-aid limit.	Tapered match cannot be used on advance construction projects, STP projects for which the non-Federal match is being provided on a program-wide basis, or projects that are financed with GARVEE bonds.	FHWA, April 2002
	Under the tapered match approach, the non-Federal matching ratio is imposed on projects rather than individual payments.		FHWA, April 2002
3. Matching Strategies: Flexible Match	Flexible match allows a wide variety of public and private contributions to be counted toward the non-Federal match for Federal-aid projects. The sources of contribution may include private, local, state, or Federal and the nature of the contribution may include cash, materials, land, services, or buildings and equipment.	The value of the public or private contribution must be included in the total project cost; it cannot both reduce the cost of the project and be credited towards the required non-Federal share of the remaining project costs.	FHWA, April 2002
	Promoting public-private partnerships by providing incentives to seek private donations.		FHWA, April 2002
4. Matching Strategies: Toll Credits	States may apply toll revenue used for capital expenditures to build or improve public highway facilities as a credit toward the non-Federal matching share of certain transportation projects.		FHWA, April 2002
	The toll facility that generates the toll credits must be open to public travel. It may be operated by a public, quasi-public, or private toll authority.		FHWA, April 2002
	States may apply toll credits toward the non-Federal matching share of any Federal-aid highway project, except for emergency relief projects.		FHWA, April 2002
	The amount of credit earned is based on toll revenues that the toll authority subsequently spends on eligible expenses for public highway facilities (including bridges, tunnels, and certain ferry systems) that serve interstate commerce.	Expenditures for routine maintenance (e.g. snow removal, mowing), debt service, or costs of collecting tolls cannot be included. All such expenditures must have been made entirely from non-Federal sources.	FHWA, April 2002

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Alternative Transportation Financing Strategies

Financing Strategy	Pros	Cons	Source
DEBT FINANCING			
1. Municipal Bonds	The principal characteristic that has differentiated municipal bonds from other capital market securities is that the interest they pay to investors is exempt from Federal income tax.	Repayment of bond financing necessitates a stream of future revenues, which can come from a variety of sources such as state and local taxes, fuel taxes or vehicle-related fees and toll receipts.	FHWA, April 2002
	Although bond financing imposes interest and other debt-related costs, bringing a project to construction more quickly than otherwise possible can sometimes offset these costs.		FHWA, April 2002
		Bonding incurs interest, so that the gas taxes of future generations are paying off bonds instead of building new projects. Bonding cannot be sustained indefinitely.	Upchurch, 2006
2. Grant Anticipation Revenue Vehicles (GARVEEs)	GARVEEs permit states to pay debt service and other bond-related expenses with future Federal-aid highway apportionments.	Candidates for GARVEE financing do not have access to a revenue stream and other forms of repayment (such as state appropriations) are not feasible.	FHWA, April 2002
	Candidates for GARVEE financing are typically larger projects that merit borrowing rather than pay-as-you-go grant funding, with the costs of delay outweighing the cost of financing.	States cannot use tapered match on GARVEE-financed projects.	FHWA, April 2002
3. Private-Activity Bonds	SAFETEA-LU increased the opportunities for alternative financing. The legislation allows private-activity bonds to be issued for selected highway facilities and surface freight transfer facilities. These bonds are tax exempt and are issued by - or on behalf of - a local or state government to provide special financing for qualified projects. Up to \$15 billion in private-activity bonds may be issued.		Upchurch, 2006
4. Federal Credit Assistance: Section 129 Loans	It allows states to use regular Federal-aid highway apportionments to fund loans to any Federal-aid highway projects with dedicated revenue streams. States may make loans to public or private project sponsors. Loans can be in any amount, up to 80 percent of the project cost.		FHWA, April 2002
	Dedicated revenues may include, but are not limited to, tolls, excise taxes, sales taxes, property taxes, motor vehicle taxes and other beneficiary fees.		FHWA, April 2002
	Proceeds from Section 129 loans can fund the costs of engineering, right-of-way acquisition, and physical construction.		FHWA, April 2002
	States benefit because every loaned dollar is repaid and recycled into further investment in the transportation system.		FHWA, April 2002
	From a project sponsor's perspective, loans are useful in offsetting up-front capital requirements that might otherwise have to be borrowed in the open market at higher rates.		FHWA, April 2002
5. Federal Credit Assistance: State Infrastructure Banks (SIBs)	SIBs are revolving infrastructure investment funds for surface transportation that are established and administered by states. SIBs may be capitalized with regular Federal-aid highway apportionments and state funds and can offer a range of flexible financial assistance, including loans and various forms of credit enhancement.		FHWA, April 2002
	TEA-21 established a new SIB pilot program, but limited participation to four states - California, Florida, Missouri and Rhode Island.		FHWA, April 2002
	Federal legislation establishes basic requirements and the overall operating framework for a SIB, states have the flexibility to tailor the bank to meet state-specific transportation needs. States may need to adopt specific enabling legislation to authorize the creation of a SIB.		FHWA, April 2002
	Candidate projects for SIB assistance include any highway project eligible for Federal assistance under Title 23 of the U.S. Code and any transit capital project eligible for Federal assistance under Title 49 of the U.S. Code.		FHWA, April 2002
	SIBs can provide financial support to both public and private sponsors of eligible transportation projects, and can assist in financing any stage of the project's development. There are no Federal share restrictions on the cost of projects eligible to receive SIB assistance.		FHWA, April 2002
	It is possible for SIB loans to be repaid with existing state resources or even Federal funds.		FHWA, April 2002
6. Federal Credit Assistance: TIFIA - Direct Federal Credit	TIFIA allows U.S. DOT to provide direct credit assistance, up to 33 percent of eligible project costs, to sponsors of major transportation projects. Credit assistance can take the form of a loan, loan guarantee, or line of credit.		FHWA, April 2002
	Highway, transit, passenger rail, and certain intermodal projects are eligible to receive TIFIA assistance. These include any project eligible for regular grant funding under Chapter 1 of Title 23 of the U.S. Code (highways) or Chapter 53 of Title 49 (public transit).		FHWA, April 2002
	Both public and private entities may apply for TIFIA assistance.		FHWA, April 2002
	A TIFIA project must pledge repayment of credit assistance in whole or in part from user charges (such as tolls or user fees), special assessments (such as taxes specifically pledged to retiring project debt), or other non-Federal sources.	Federal funds cannot be pledged to repay TIFIA credit assistance.	FHWA, April 2002

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Alternative Transportation Financing Strategies

Financing Strategy	Pros	Cons	Source	
INNOVATIVE USES OF TOLLING				
1. Tolling Federal-Aid Highways	Provides states the discretion to levy tolls on most non-Interstate Federal-aid highways.		FHWA, April 2002	
	The Federal matching share for all expenditures on tolled facilities is up to 80 percent - an increase from the 50 percent share originally authorized under ISTEA.		FHWA, April 2002	
	Toll revenues are used first for debt service, reasonable return on private investment, and operation and maintenance.		FHWA, April 2002	
	States are allowed to determine whether a toll facility is to become free when debt is retired, or at some point in time or whether tolls are to continue indefinitely.		FHWA, April 2002	
2. Interstate Reconstruction and Rehabilitation Pilot Program	This pilot program allows up to three projects to convert reconstructed or rehabilitated free Interstate segments into tollways.		FHWA, April 2002	
	The state sponsoring the project must commit to using toll revenues for eligible uses, which comprise costs necessary to improve, operate, and maintain the facility; debt service; and a reasonable return on investment for any private party financing the project. Once renovation to the facility is complete, tolls must be collected for at least 10 years.		FHWA, April 2002	
3. Value Pricing	The intent of the program is to evaluate the capacity of road and parking pricing concepts to achieve significant reductions in highway congestion. Value pricing is a way of harnessing the power of the market to reduce congestion and the economic and environmental costs that congestion imposes.		FHWA, April 2002	
	Value pricing can encompass a variety of tolling strategies to manage congestion on highways. These include (1) variable tolls on existing and new toll roads, bridges and tunnels that are collected via an electronic transponder; (2) Electronically-collected tolls on lanes added to existing highways; (3) Tolls for vehicles not meeting occupancy requirements on High Occupancy Vehicle (HOV) lanes; and (4) New, electronically-collected tolls on existing toll-free general purpose lanes.		DeCorfa-Souza, 2003.	
	The key difference between a typical toll structure and a value pricing toll is variability. The key is for toll rates to vary with the level of congestion on the tolled roadway. Thus, rates tend to be higher during rush hour. FHWA has worked with partners in several states to demonstrate the feasibility and benefits of value pricing. Successfully implemented projects exist on highway facilities in California, Texas, Florida, New York, and New Jersey.		FHWA, April 2002	
		Possible public opposition to fee implementation at previously free areas. Decrease amount of infrastructure available to the general public.	Univ. of Maine, 2006 Univ. of Maine, 2006	
		In the U.S., pricing generally has been limited to individual bridges and to High-Occupancy Toll (HOT) lanes and express lanes. The HOT and express lane applications have generally been well accepted since they provide drivers the choice of whether to pay to avoid congestion or not. Acceptance of pricing entire facilities or entire areas of a city is more controversial.	NSTP & Revenue Study Commission, 2007	
		Congestion pricing encourages the use of other routes and other modes of travel, such as public transportation.	The major disadvantage of pricing is that during peak periods, tolls are higher for those who cannot change their destination or time of travel. For some travelers this could impose a hardship.	NSTP & Revenue Study Commission, 2007
4. High-Occupancy Vehicle (HOV) Facilities	Authorized in SAFETEA-LU in 2005, this program permits states to charge tolls to vehicles that do not meet occupancy requirements to use an HOV lane even if the lane is on an interstate facility.		GAO, June 2006	
5. High-Occupancy Toll (HOT) Lanes	HOT lanes are a form of value pricing. They gained expanded authorization in SAFETEA-LU. Single-occupancy vehicles can use the lane for a fee. The charge is high enough to ensure that the increase in users does not reduce the travel speed in the HOT lane. High-occupancy vehicles are allowed to use the lane free or at a discounted toll rate.		Upchurch, 2006.	
	Users Perspectives	80% of Los Angeles and Orange County residents believe in replacing toll booths with electronic toll and traffic management technology.	95% of San Diego residents believe HOT lanes should be available to solo-drivers for a fee.	Zmud and Arice, 2008
		Minnesota residents wanted option of paying a fee to use uncongested area in a hurry.	Many Denver residents believed HOT lanes were a 'band-aid' solution to the congestion problem.	Zmud and Arice, 2008
		69% of Minnesota residents would support paying for new highway lanes with tolls collected from drivers who chose to use them.	Dallas/Ft. Worth users expressed high concern over how electronic tolling could differentiate SOVs from HOVs.	Zmud and Arice, 2008
		Believe a good way to reduce congestion (Los Angeles and Orange Counties, CA and Denver).	Main opposition in Denver was use of revenue (residents believe should focus on bus services and roadway improvements, not on revenue-receiving agencies).	Zmud and Arice, 2008
One of top reasons for support in Houston/Dallas was the absence of large trucks in HOT lanes.		Zmud and Arice, 2008		
6. Truck-Only Toll (TOT) Lanes	Toll roadways or lanes for exclusive truck use in dense urban regions with heavy truck demands. Building exclusive truck hot lanes to improve trucking efficiency.		NCHRP #102, 2006 Ankner, 2003	
7. Area Charging or Cordon Tolling	Implement charge for operating vehicle in a specified area.	Possible encouragement of sprawl.	Univ. of Maine, 2006	
	Promote efficient transportation behavior (carpooling, mass transit)	Creation of boundary effects; motorists increase travel in order to avoid charge.	Univ. of Maine, 2006	
	Large revenue base if implemented in a large area.		Univ. of Maine, 2006	
	57% of Londoners believed road-user charging was necessary.		Zmud and Arice, 2008	
Users Perspectives	60% of Londoners eventually supported congestion charging despite stark disapproval before implementation in 1999 survey, as awareness increased, so did support.		Zmud and Arice, 2008	
	New Yorkers believed possible pro's to congestion charging below 60th Street included: Reduce traffic, traffic jams and congestion in the area; Increase use of public transport; Decrease unnecessary cars, trucks and people in the area; Bring increased revenue to city, and reduce pollution.	New Yorkers believed possible con's to congestion charging below 60th Street included: Too many tolls and taxes already existed; Won't solve congestion problem; and will hurt businesses and increase prices.	Zmud and Arice, 2008	
		Overwhelming amounts of those polled worldwide oppose area and/or cordon charging (Trondheim, Norway; Stockholm, Sweden; Helsinki, Finland; Shanghai, China and US National Poll).	Zmud and Arice, 2008	

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Alternative Transportation Financing Strategies

Financing Strategy	Pros	Cons	Source
PUBLIC-PRIVATE PARTNERSHIPS			
1. Project Delivery	State and local transportation agencies are using a wide range of contractual arrangements to enhance private sector participation in Project Delivery (development phase through design and construction), Asset Management (long-term operations and maintenance), and Project Finance (debt and possibly equity financing secured primarily by project revenues). These public-private partnerships can provide substantial benefits in terms of accelerating project development and construction, increasing operating efficiency, and limiting public sector exposure to certain risks, such as cost overruns or project revenue shortfalls.		NCHRP #102, 2006
	Alternative contractual arrangements include: Design-Build Contracting (D-B-B); Design-Build-Operate-Maintain (D-B-O-M); and Design-Build-Finance-Operate (D-B-F-O).		NCHRP #102, 2006
2. Asset Management	Using the average increase in highway and bridge construction costs since 1997, if the average project development time for highway projects could be reduced from 13 years to 6 years, the cost of the project could be reduced by almost 40 percent.		NSTP & Revenue Study Commission, 2007
	Finance the construction of new highways without the use of public funding.	Tolls paid by road users. Potentially higher tolls under private operation.	GAO, February 2008
3. Project Finance	Obtain up-front payments through the long-term lease of existing toll roads.	Public may give up more than it gains if tolls over time exceed the value of up-front payments. Future users might potentially pay higher tolls to support current benefits.	GAO, February 2008
	Transfer and sharing of project risks to the private sector: construction cost and schedule; sufficient traffic and revenue levels; and increased transparency of project costs.	Not all risks can or should be shared: environmental risks and political risks; potential loss of control (noncompete provisions and toll rate setting).	GAO, February 2008
	Secure private sector efficiencies in operations and life-cycle management.	Higher public sector costs (costs of advisors and costs of private finance); and potential tax losses.	GAO, February 2008
	Obtain a facility that better reflects the true costs of operating and maintaining the facility in setting tolls and better acknowledges the costs and impact to drivers of using the roadway system during times of peak demand.	Risk that the public could pay tolls that are higher than tolls based on the costs of the facilities, including a reasonable rate of return, should a private concessionaire take advantage of market power gained by control of a road for which there are few alternatives that do not require substantially more travel time.	GAO, February 2008
	Increase mobility through tolling, congestion pricing, and more efficient decision making.	Traffic diversion and user equity concerns from tolling.	GAO, February 2008
	Complete a greater number of projects at a faster rate.	Public safety concerns.	Univ. of Maine, 2006
		Highway public-private partnership arrangements are not "risk free," and concerns have been raised about how well the public interest has been evaluated and protected. Concerns have also been raised about the potential loss of public control over critical assets for up to 99 years.	GAO, February 2008
		The demand risk remains the most important risk attached to toll-road infrastructure in the U.S. From an investor's standpoint, the greatest risk with very long-term obligations is that future development patterns will not provide the traffic to sustain profitability even if toll rates are allowed to climb on a regular basis.	Checherita & Gifford, 2007.
		Public and political resistance to toll roads and privatization.	Checherita & Gifford, 2007.
		Legal risks arising from relatively insufficient experience with PPP projects.	Checherita & Gifford, 2007.
		Will turning over operational control of a toll road for a long-term (50 years or more) period interfere with transportation planning in future years?	NCHRP #102, 2006
	Decreasing the cost of new projects		Univ. of Maine, 2006
	Circumvents debt limits that restrict how much debt can be issued by state or toll authority.	Unless specified in contract, private sector can refinance debt which does not benefit public sector equally.	Ortiz, 2007
Large upfront payments can be used to address other areas where funding is needed or to start new projects.	Lump sum being used to fund non-transportation projects, leaving deficit later in project life, as well as using funds for projects that do not benefit facility users.	Ortiz, 2007	
Toll rate increases occur faster than with public management.	Negative public reaction to increased tolls; quicker rate increases will impact freight costs therefore negatively impacting the economy.	Swan and Belzer, 2007	
States still collect some revenues from tolls.	States forgo higher initial payment to receive shared revenues.	Ortiz, 2007	
	Efforts by individual states to collect rents from interstate commerce by leasing toll roads clearly interferes with interstate commerce laws.	Swan and Belzer, 2007	
	Privatized roads cannot rely on fuel taxes as part of revenue therefore raising toll costs on private highways.	Swan and Belzer, 2007	
	Submittal of unsolicited proposals for most profitable projects leaving other needed and not as profitable projects for the states.	Ortiz, 2007	
	Efforts ability to maintain and expand existing roadways.	Ortiz, 2007	
Roadway controlled by an entity that has less bureaucratic ties to emerging issues and public opinion, allows for more expedient completion of projects.		Ortiz, 2007	
Useful technique to attract private capital in public projects that would otherwise be beyond the reach of the public entity.	Private sector focused on recouping investment while at time neglecting users needs and interests because private sector liable to investors and shareholders more than public.	Ortiz, 2007 and Khasnabis, 2007	
Emerging formations of state subcommittees and panels to specifically discuss and research future PPP endeavours.	Relative newness of PPP-type projects may undermine the public sector's ability to make good decisions in the best interest of the user as well as underestimate some contract ramifications (e.g. non-compete clauses).	Ortiz, 2007	
Maine Department of Transportation has successfully completed three roadway projects using the design-build partnership arrangement.		Univ. of Maine, 2006	

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Financing Strategy	Pros	Cons	Source
PUBLIC-PRIVATE PARTNERSHIPS CONTINUED			
	The Public-Private Initiatives in Transportation Act of 1993 created the authority for the Washington State Department of Transportation to "solicit proposals from private companies to plan, design, finance, construct, and operate transportation facilities, and to impose user fees or tolls to recover all or a portion of the cost of the project and to earn a reasonable rate of return on their investment." In further modification of the act, the legislature allowed for public opposition to any project to enter into the project planning.		Univ. of Maine, 2006
	The Public-Private Transportation Act (PPTA) of 1995 allows the Virginia Department of Transportation to enter into partnership with private entities in order to design, build and maintain their infrastructure.		Univ. of Maine, 2006
	The 2003 Public-Private Initiative Legislation, revised in 2005, allows the Georgia Department of Transportation to begin entering into public-private partnerships. This legislation allows for solicited proposals and unsolicited proposals from private entities seeking to improve the transportation infrastructure in Georgia.		Univ. of Maine, 2006
Users Perspectives		Three-quarters of San Antonio residents opposed hiring private contractors to build and manage roads. 60% of Indiana respondents thought it was a bad idea to lease Indiana toll road (Most opposed lease because of foreign control). Overall, most respondents largely opposed to lease/sale of roads to private entities (San Antonio and Dallas, Texas; Indiana and New Jersey).	Zmud and Arice, 2008 Zmud and Arice, 2008 Zmud and Arice, 2008
4. Concession Fees	Potential use of commercial activities along interstate and other highways which could result in payments to the state. For example, the State could sell the right to use roadside rest areas to a company to provide food service to the public. The State would benefit in two ways: the company would provide, operate and maintain the rest areas for travelers at no cost to the State and the State would gain revenue from the sale of the concession fee. The use of highway right-of-way is desired for telecommunication companies for fiber optic cable and antennae installations. The State can obtain revenues and/or free service by entering into agreements with these companies for use of the right-of-way. States can retain variable amounts of control pertaining to maintenance and expansion. By only being responsible for one road instead of many encourages higher level of responsibility and less burden of massive maintenance and upkeep.		State of Rhode Island, 1996 State of Rhode Island, 1996 Ortiz, 2007 Ortiz, 2007
5. Sale/Leaseback	The State may sell a transportation facility to a private entity which then leases back the facility to the State. The private owner gains money from either lease payments from the State or from operating revenues from the facility. The operating revenue would most likely come from tolls.		State of Rhode Island, 1996
6. Air Rights	Allowing the sale of un-used, zoned air space above part of the road network can provide an opportunity to collect revenue. This would most likely be a one-time lump sum transaction between the owning agency and a private developer. High land prices and strong real estate markets are needed to justify the high cost of platform construction.		
7. Naming Rights	The rights to name a transportation facility can be sold for revenue towards the construction of the facility. This transaction would create a one-time, lump sum to be put towards financing.		

Appendix C

Alternative Transportation Financing Strategies

Review of Literature

The URI research team reviewed the following literature to identify the pros and cons of alternative transportation financing strategies. The strategies are divided into five groups: Revenue sources, innovative management of federal funds, debt financing, innovative uses of tolling, and public-private partnerships.

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