

**Transportation Finance in  
Massachusetts:  
Volume 2  
Building a Sustainable  
Transportation Financing System**



Recommendations of the  
Massachusetts Transportation Finance  
Commission

September 17, 2007



# **Transportation Finance in Massachusetts: Volume 2 Building a Sustainable Transportation Financing System**

## **Recommendations of the Massachusetts Transportation Finance Commission**

September 17, 2007

### **Members of the Commission:**

Chairman: Stephen J. Silveira, Vice President ML Strategies, LLC

James A. Aloisi, Jr., Goulston & Storrs

Harold Hestnes, Esq., WilmerHale

Alan G. Macdonald, Executive Director, Massachusetts Business Roundtable

Patricia McGovern, Senior Vice President, Beth Israel Deaconess Medical Center

John M. Pourbaix, Jr., Executive Director, Construction Industries of Massachusetts, Inc.

Paul Regan, Executive Director, MBTA Advisory Board

Honorable Joseph C. Sullivan, Former Chairman, Joint Legislative Committee on Transportation

Kevin J. Sullivan, Senior Vice President, Sovereign Bank

Frank A. Tramontozzi, P.E., Senior Vice President, Fay Spofford & Thorndike

Christopher P. Vincze, Chief Executive Officer, TRC Solutions

Michael J. Widmer, President, Massachusetts Taxpayers Foundation



# Table of Contents

About the Massachusetts Transportation Finance Commission .....	ii
1.0 Charting a New Course.....	1
2.0 First Principle: Reform .....	7
3.0 Second Principle: Revitalization.....	25
4.0 A Call to Action .....	37
Acknowledgments.....	39

# List of Exhibits

Exhibit 1. Expected Savings from Reform Recommendations.....	3
Exhibit 2. Expected Revenue from Revitalization Recommendations.....	5
Exhibit 3. Total of Reform and Revitalization Recommendations .....	5
Exhibit 4. MBTA Contributions to Health Care Premiums in FY 2007.....	15
Exhibit 5. Commission Proposal for MBTA Health Care Benefits for Retirees .....	16
Exhibit 6. Gas Taxes in Neighboring States.....	30
Exhibit 7. 18-Month Average Retail Price Chart.....	31
Exhibit 8. Estimated Annual Net Revenue from a 5 Cent per Mile User Fee on All Massachusetts Interstate Highways.....	35
Exhibit 9. Estimated Daily Interstate Fee for Representative Round-Trip Commuters at 5 Cents per Mile.....	35
Exhibit 10. Comparison of Daily Interstate Fee to Current MassPike Tolls.....	36

## **About the Massachusetts Transportation Finance Commission**

Chapter 196 of the Acts of 2004 established a special Transportation Finance Commission to develop a comprehensive, multimodal, long-range, transportation finance plan for the Commonwealth of Massachusetts. Specifically, the Commission was given a two-part charge:

1. To analyze the State's long-term capital and operating needs of the transportation system for the next 20 years,<sup>1</sup> the funds expected to be available, and to estimate the extent to which a gap exists; and
2. To make recommendations to close this funding gap through potential cost savings, efficiencies, and additional revenue.

In Volume 1 the Transportation Finance Commission presented its analysis of the Commonwealth's ability to fund needed surface transportation improvements. The Commission found that the current financing system was unsustainable. Following public discussion on the depth and breadth of the problem facing our transportation system, and consideration of a broad range of options to address these serious concerns, the Commission developed this second volume of recommendations aimed at moving from an unsustainable financing system to a sustainable one.

Volume 2 provides 28 recommendations to address the shortcomings of our transportation system that relate to funding and getting the most out of limited dollars. We are long past the time where easy answers will address our problems. Instead, we present viable solutions to difficult problems, and we call upon our leaders to make the tough choices necessary to preserve the investment in our transportation system that has been made over the last century.

---

<sup>1</sup> The enabling legislation called for the Commission to look out 25 years. However, after the Romney Administration issued their 20-year transportation plan, the Commission adjusted to analyze the same time frame.

# 1.0 Charting a New Course

The first report issued by the Transportation Finance Commission on March 28, 2007 described our surface transportation system as being frighteningly underfunded and ill prepared to meet the needs of the Commonwealth during the next two decades and beyond. We found that:

- A. Virtually every transportation agency in the State is running structural deficits and resorting to short-term quick fixes that hide systemic financial problems;
- B. The condition of our roads, bridges, and transit systems are all in broad decline;
- C. Revenue is being squeezed from all sides; and
- D. We have no money for transit or highway enhancements or expansions without further sacrificing our existing systems and exacerbating our problems.

We conservatively estimated a funding gap of \$15 billion to \$19 billion over the next 20 years, which only includes maintaining the present system without enhancements or expansions. Our characterization of the breadth and depth of the problems confronting our transportation system and our conclusion that the course of the past several decades is unsustainable has been widely accepted.

Our transportation system must foster, not inhibit, growth and development. Most states are facing the issue of infrastructure decay caused by decades of neglect. States that confront this issue honestly will have a safe, reliable, modern, and well-maintained transportation system to support economic growth.

In this report the Transportation Finance Commission provides specific recommendations on how to achieve a sustainable system for the next two decades and beyond. It is imperative that steps be taken to reform the way we do business and to improve the delivery of transportation services. In addition, we need to change the way we collect revenue to enable a solid framework for economic growth and prosperity into the future.

---

***It has long been accepted that there is no such thing as a free lunch; it is time for people to acknowledge that there is no such thing as a freeway either.***

---

It has long been accepted that there is no such thing as a free lunch; it is time for people to acknowledge that there is no such thing as a freeway either. The overarching theme throughout our recommendations is that a healthy, vibrant transportation system does not miraculously come for free. It must be paid for and its costs should not be deferred.

With a \$15 billion to \$19 billion problem, no real progress can be made without addressing both the cost and the revenue sides of the equation. The problems are severe, so the solutions cannot be timid. To those who say that we should solve the problem through elimination of waste and inefficiency, we agree. Unfortunately, most of the cost-saving ideas amount to million-dollar solutions in a billion-dollar world – cost-saving measures alone cannot get us where we need to go. Nor can we borrow our way out of this problem. We support a system that relies heavily on direct user fees so that there is a strong relationship between the use of the system and how much people pay. There is no choice about whether to tackle these issues – it is only a question of when. Avoiding difficult decisions now will mean at best even more daunting challenges in the future – at worst, a catastrophe.

### ***Importance of Transportation to the Economy***

*A well-maintained transportation infrastructure system is a fundamental part of a functioning economy. Local transportation projects also can affect the economic vitality of a region by expanding customer or supplier markets; expanding labor markets; reducing business operating costs through lower direct expenses or increased economies of business operation. Together, these factors contribute to overall economic productivity and competitiveness.*

*Below are some of the basic ways that transportation investments affect the economic development of a state, region, or city. Transportation investment:*

- *Boosts industry competitiveness;*
- *Enhances individual quality of life;*
- *Strengthens local, regional, and state economies;*
- *Boosts business travel and leisure travel;*
- *Reduces economic losses associated with accidents; and*
- *Reduces economic losses associated with congestion.*

The measures described below and in further detail in the remainder of this report fall into two categories: reform of the way we do business today, and revitalization of the revenue sources. Together, these actions can lead to a future that will serve both our mobility and economic growth needs. Taking these steps will require political courage, but Massachusetts cannot continue to stay on the dangerous path of underfunding and underinvestment leading to inadequate maintenance.

## ■ First Principle: Reform

Public dollars for transportation need to be spent more resourcefully because each dollar saved is a dollar we do not have to raise. Reform is essential. It is also essential that we take steps to achieve meaningful reform before we require people to pay more. Our recommendations seek to achieve fairness and balance in the way we compensate our public employees; to encourage and enhance the kind of robust competition that is essential to an effective, cost-efficient procurement system; and to eliminate practices that undermine public confidence in the delivery of transportation services.

---

***Public dollars for transportation need to be spent more resourcefully because each dollar saved is a dollar we do not have to raise.***

---

All told, the 22 reform recommendations detailed in Section 2 can save well over \$2.5 billion over 20 years (Exhibit 1).

### Exhibit 1. Expected Savings from Reform Recommendations *Millions of Dollars*

	New Savings
1 Road and bridge investments should be selected and advanced based on rational and transparent criteria	+
2 The Executive Office of Transportation and Public Works (EOTPW) should utilize alternative procurement methods and public private partnerships (P3)	+
3 The use of private flagmen should be allowed on road and bridge projects	\$100
4 Responsibility for the Department of Conservation and Recreation's (DCR) parkways and bridges should be transferred to MassHighway	+
5 Maintenance Responsibilities of I-395, I-84 and I-291 should be transferred to the Massachusetts Turnpike Authority	\$60
6 EOTPW should establish the position of Private Project Ombudsman	+
7 The Commonwealth should end the practice of using bonded funds for operating personnel and expenses	\$825
8 The Commonwealth should improve the predictability of highway funding and coordination of projects funded by multiple entities	+
9 The rate of growth of MBTA fringe benefits costs should be reduced	\$1,100
10 The unnecessary constraints on MBTA management should be removed	+
11 The MBTA needs to fully fund its state of good repair program. This goal can and should be achieved by the Commonwealth assuming the debt from Central Artery/Tunnel transit commitments	+
12 The Commonwealth should pay for all MBTA capital expansions, and before committing to a project, the MBTA should demonstrate that adequate revenues are in place to operate and maintain the expansions	+
13 Regional Transit Authorities (RTAs) should be forward-funded	+
14 The RTA's 2.5 percent per year cap in operating cost growth should be eliminated	+
15 RTAs should be allowed to borrow with the full faith and credit of the Commonwealth	\$65

**Exhibit 1. Expected Savings from Reform Recommendations (continued)**  
*Millions of Dollars*

	New Savings
16 The Secretary of Transportation should exercise a stronger coordinating role with respect to RTAs	+
17 The Secretary of Transportation should have the authority to coordinate all aspects of the Commonwealth's transportation network	+
18 The CEO of each Massachusetts transportation agency should institute a rigorous performance evaluation process	\$200
19 All Massachusetts transportation agencies should have the same \$100,000 tort liability limit as municipalities	\$100
20 The vast majority of our funds for the foreseeable future should be devoted to maintenance and rehabilitation	+
21 The Tobin Bridge should be transferred from Massport to the Metropolitan Highway System	+
22 Transportation user fees must be dedicated to transportation uses	+
<b>First Principle Subtotal</b>	<b>\$2,450+</b>

+ Recommendations with this symbol are important to the overall effort to reform and revitalize the Massachusetts transportation system, but savings arising from their implementation have not been quantified.

■ **Second Principle: Revitalization**

We need to provide reliable sources of revenue sufficient in amount to erase the existing gap and to keep pace with rising costs over time. Significant new revenues are critically needed to simply maintain our current system, let alone embark upon improvements and expansions. We have identified those approaches that we believe are fair and most likely to provide the kind of long-term stability that is required to meet our needs over time.

***We need to provide reliable sources of revenue sufficient in amount to erase the existing gap and to keep pace with rising costs over time.***

Our six revitalization recommendations are detailed in Section 3, and can generate billions in net new revenues (Exhibit 2):

**Exhibit 2. Expected Revenue from Revitalization Recommendations**  
*Millions of Dollars*

	New Revenues
23 The gas tax should be increased by 11.5 cents and indexed to inflation	\$10,500
24 The Massachusetts Turnpike should develop a balanced operating budget for the Western Turnpike that does not rely upon spending down its reserve fund	\$300
25 Fares should remain a meaningful source of revenue for the MBTA, through regular and predictable increases to keep pace with inflation	\$1,900
26 Toll increases on the Turnpike Extension and Harbor Tunnels must be carried out	\$530
27 The Commonwealth should move to a system of direct road user fees as the principal source of transportation funding using modern technology	\$5,500
28 The Commonwealth should investigate whether public private partnerships are appropriate for the development and/or funding of our transportation infrastructure	+
<b>Second Principle Subtotal</b>	<b>\$18,730</b>

+ Recommendations with this symbol are important to the overall effort to reform and revitalize the Massachusetts transportation system, but have not been quantified, or are not quantifiable.

**■ Total Gap-Closing Potential of All Recommendations**

Adding up the expected savings from the reform recommendations and revenue from revitalization recommendations yields a total of over \$21 billion (Exhibit 3):

**Exhibit 3. Total of Reform and Revitalization Recommendations**  
*Millions of Dollars*

	Savings and Revenues
First Principle: Expected Savings from Reform Recommendations	\$2,450
Second Principle: Expected Revenue from Revitalization Recommendations	\$18,730
<b>Total Savings and Revenue</b>	<b>\$21,180</b>



## 2.0 First Principle: Reform

**We must reform the way that transportation services are delivered to accomplish more and to increase the public confidence that their money is being spent effectively on needed projects.**

Reform is needed on several fronts:

- **Efficiency through asset management.** Asset management systems are a cost-effective way to spend limited resources. Commonwealth road and bridge agencies need to increase the use and sophistication of these systems.
- **Transparency and predictability in project planning and delivery.** We need to agree on a set of priorities, publish them, and measure performance to ensure accountability.
- **Reduction in costs.** The cost to deliver transportation services must be reduced. One of the most obvious issues is the benefits package provided to MBTA employees that is among the most generous in the country.
- **Elimination of bureaucratic roadblocks.** Over the years, processes have evolved that thwart the effectiveness of project delivery. Limitations on procurement methods deprive state officials of options and increase costs by reducing competition.

In some cases, improvements in productivity might be achieved by *increasing* what we spend, thereby providing transportation agency staff with the resources to do their jobs properly.

Some of the reform recommendations may seem to yield “only” a few million dollars per year. But when considered over the course of a 20-year time horizon, these small amounts add up. Every \$4 million in annual savings nets over \$100 million during 20 years when considering a 3 percent per year inflation rate.

In this section, we present a variety of actions that can reduce the costs and improve the effectiveness of delivery of necessary transportation services.

## ■ Roads and Bridges

### **Recommendation 1: Road and Bridge Investments Should Be Selected and Advanced Based on Rational and Transparent Criteria.**

*Our transportation agencies and authorities are entrusted with hundreds of millions of dollars annually to oversee our roads and bridges, yet they lack the systems to make sure that those investments are being made on the most needed projects. These agencies need to:*

- *Continue developing a comprehensive asset management system that allows them to allocate scarce resources effectively;*
- *Be forthright about the number of projects that can be built so that the lack of funds is not camouflaged; and*
- *Develop a performance measurement system so that progress towards carrying out stated goals is clear and regularly measured.*

#### ***Asset Management Systems***

The first step should be to more fully develop and implement an asset management program for the entire road and bridge system. MassHighway has not been able to identify for the Commission how much money would be needed to bring the highway system to a state of good repair<sup>2</sup> or to provide for the needs of the Commonwealth as it grows.

Asset management systems help decision-makers analyze how to make the difficult tradeoffs between different types of investment: maintenance, preservation, reconstruction, and new capacity. These systems evaluate the benefit derived from a given level of investment, considering the desired policy objectives. Asset management systems are a basic foundation for making the right decisions to meet agreed-upon priorities.

In the time that the Commission has been doing its work, MassHighway has begun to move toward developing an asset management system for various components of its transportation network. However, much more needs to be done to accomplish the ultimate goal of systemwide asset management. In addition, there are no agreed-upon standards for how much money should be spent on local roads that are eligible for state funding through the Chapter 90 program, giving decision-makers no basis for formulating the proper amount of funding.

---

<sup>2</sup> The term “state of good repair” is used in the transit industry to denote a condition whereby all capital assets are functioning at their intended capacity within their design life.

In short, while MassHighway has made a good start, the agency should be given the resources to fully develop and manage its asset management program. MassHighway also needs the resources to develop performance measures and to track them. Although these management systems do not carry as high a profile as a construction project, the benefits these systems can bring in terms of leveraging the Commonwealth's limited dollars are significant.

### ***Realistic Project Selection***

The Executive Office of Transportation and Public Works (EOTPW), MassHighway, and the Metropolitan Planning Organizations (MPOs) need to be realistic about the number of projects that can be planned, designed, and built, and candid with the public about resource limitations. Recently, the Federal Highway Administration notified MassHighway that it will lose a portion of its Federal funding unless it can strengthen its project selection and delivery processes. At the beginning of each year, there should be a clear list of what projects are expected to be planned, designed and built, and at the end of the year there should be an accounting of the progress made. We also should not carry projects in our three- to five-year plans unless we believe that we can actually advance them.

### ***Performance Measurement***

The use of performance measurements helps staff and elected officials understand how well an agency is carrying out its mission. MassHighway does not use such systems, and it should. When looking at the practices of other states, one of the most impressive examples the Commission found of a transparent, comprehensible, and measurable planning document was something called the "Gray Notebook" prepared by the Washington State Department of Transportation (WSDOT). This report provides quarterly, in-depth reports on agency and transportation system performance. The purpose of the Gray Notebook is to keep WSDOT accountable to the Governor, Washington State citizens, legislators, and transportation organizations. It is also an important internal management tool. The rigor and quality control involved in developing each performance report requires a hands on approach by staff and managers at all levels and across all programs.

## **Recommendation 2: The Executive Office of Transportation and Public Works (EOTPW) Should Utilize Alternative Procurement Methods and Public-Private Partnerships (P3s).**

Recent legislation to reform state public bidding laws has not gone far enough toward establishing a modern public procurement system. Procurement systems have evolved to enable the private sector to have a larger role and stake in long-term sustainability of transportation infrastructure. Massachusetts is behind the curve nationally in the area of alternative procurement methods such as design/build/operate/maintain and design/build/finance/operate. The current procurement system in

---

***The current procurement system in Massachusetts leaves the design and construction community completely out of the picture when it comes to maintenance of the public works they have built – they have no stake in the long-term performance of the system.***

---

Massachusetts leaves the design and construction community completely out of the picture when it comes to maintenance of the public works they have built – they have no stake in the long-term performance of the system. Alternative approaches to public works procurement can provide the Commonwealth with the assurance that public works, once properly designed and built, are also properly maintained in a way that serves the public interest by protecting our investments.

Our system is stifling the kind of robust competition and flexibility in procurement that will save precious dollars while ensuring an honest delivery of services. The constraints placed on state agencies seeking to implement procurement methods that have become commonplace throughout the country should be lifted if Massachusetts is to emerge from its costly and inefficient status quo. Providing the Secretary of EOTPW with the authority to implement the full range of procurement options available will streamline project delivery and lower costs.

### **Recommendation 3: The Use of Private Flagmen Should Be Allowed on Road and Bridge Projects.**

Massachusetts is bleeding scarce financial resources as a result of a long-standing and unnecessary system that dictates that police officers be hired to work as flagmen at road construction sites. This is a practice that should come to an end. Over ten years ago the then Chairman of the Senate Public Safety Committee issued a study proposing changes that would allow for the increased use of flagmen instead of police officers on road and bridge projects. Since then, the problem has spiraled out of control. Costs for police details on MassHighway projects alone have increased from \$15.5 million in 2003 to \$22.6 in 2006, a 48 percent increase over the three years. Currently, 4.5 percent of the total cost of MassHighway's construction projects goes to pay for police details. If we conservatively estimate that 20 percent of the cost of flagmen can be reduced through this measure, it would save the Commonwealth \$100 million over 20 years just for MassHighway projects.

The Secretary of Transportation, in consultation with the Secretary of Public Safety, should establish and publish by regulation a set of criteria for the appropriate use of police or flagmen on road construction projects. Forty-nine other states have found a way to manage road projects utilizing flagmen; Massachusetts should join them.

### **Recommendation 4: Responsibility for the Department of Conservation and Recreation's Parkways and Bridges Should Be Transferred to MassHighway.**

In many other states, park roads are under the jurisdiction of the state DOT. The responsibility for the Department of Conservation and Recreation's (DCR) 500 lane-miles of roads and 187 bridges, including all Charles River crossings between Boston, Watertown, Cambridge, and Somerville, should be transferred, along with appropriate personnel and funding, to MassHighway. MassHighway should be given the resources and the direction to manage and maintain the DCR parkways as true parkways, with all that this implies. These vital transportation assets would thus be placed within a planning and programming process

that would allow the projects to better compete for funding and be subject to more consistent standards. At the same time, DCR can then focus on its primary mission of conservation.

### **Recommendation 5: Maintenance Responsibilities of I-395, I-84, and I-291 Should Be Transferred to the Massachusetts Turnpike Authority.**

Maintenance and snow plowing in the vicinity of the Massachusetts Turnpike are fragmented – the Turnpike Authority handles the Turnpike itself, while MassHighway is responsible for other related highways. In exploring synergies, MassHighway and the Turnpike should take advantage of the existing resources of the Turnpike to perform routine operations and maintenance on the 27 miles of I-395, I-84 (each a feeder road located south of I-90), and I-291 (the highway servicing Springfield).

It would be more efficient to have the crews that are plowing the snow on the Turnpike continue onto the feeder roads. The same applies for simple maintenance tasks such as filling potholes and maintaining the roads. This proposal does not include funding for or construction of capital projects. But, according to the Turnpike’s estimates, the annual personnel, equipment, and material cost savings for routine maintenance would amount to approximately \$2.2 million annually or almost \$60 million over 20 years.

Note that this recommendation relates strictly to cost efficiencies. The problem of insufficient resources at both MassHighway and the Turnpike Authority still needs to be addressed.

### **Recommendation 6: EOTPW Should Establish the Position of Private Project Ombudsman.**

In addition to managing its own projects, MassHighway oversees the work of private contractors working on behalf of private clients whose projects connect to the state highway system. These private projects are critical to the economic development of the Commonwealth. Yet time and again the curb cuts or intersection and signal improvements necessary to advance these development projects are slowed down through bureaucratic inefficiencies.

EOTPW should create the position of “Private Project Ombudsman” in the same way that the Commonwealth has established a single point of contact for the permitting process. This should be a senior-level person reporting to the Secretary or Commissioner who is given the responsibility and the authority to oversee and expedite private development projects.

For private sector-initiated projects, MassHighway should also dedicate personnel, sufficient in numbers and training, to foster growth and development, not to impede it. MassHighway should impose reasonable fees to cover the cost of timely review and approval, and provide more dependable service with reliable timeframes. For municipal

projects, MassHighway should also develop the staff resources to design local road projects for those municipalities that do not have the resources to do so.

Finally, there is a longstanding problem of delays associated with utility relocation in public rights-of-way. The Private Project Ombudsman should develop recommendations for the Secretaries of EOTPW and Housing and Economic Development to address this problem.

### **Recommendation 7: The Commonwealth Should End the Practice of Using Bonded Funds for Operating Personnel and Expenses.**

Massachusetts should stop incurring debt service for operating expenses at MassHighway. This is the equivalent of paying interest charges on your groceries. In 2006, the Commonwealth spent \$162 million of capital funds to pay for MassHighway operations – this includes personnel costs and highway operation costs such as grass cutting, maintenance, engineering, and administration. Currently, MassHighway has over 1,400 employees paid through bond funds – at least 1,000 of these people properly belong on the operating budget. The practice of using capital funds to pay for operations reduces the amount of money MassHighway has to spend on capital projects. Also, there are real and significant costs involved in borrowing long-term for short-term costs.

If this practice of borrowing capital funds to pay short-term expenses is stopped, the Commission estimates that over 20 years we can save approximately \$825 million. In addition, we will avoid passing along an additional \$500 million dollars in debt to those responsible for managing the system for the following 20 years. So, the cumulative impact of this action is in excess of \$1.3 billion.<sup>3</sup>

Debt makes sense for long-term capital investments, because the value of those investments lasts for years, and there is value to the extra money spent on interest payments. When debt is used for day-to-day operations, it simply costs more, without any long-term benefit. Sacrificing capital investment through this fiscal shell game is a practice that must quickly come to an end. The solution here is straightforward. The Commonwealth needs to increase MassHighway's operating budget to pay for these operating costs.

### **Recommendation 8: The Commonwealth Should Improve the Predictability of Highway Funding and Coordination of Projects Funded by Multiple Entities.**

State transportation bond bills have not been filed or enacted on a predictable schedule. In addition, the amount of capital funds allocated to transportation changes from year to year. These factors make it difficult and costly for MassHighway to accomplish larger projects that stretch over a year because they do not know that they will have the funding to complete

---

<sup>3</sup> Assuming current bond interest rates of 4.33 percent and an annual inflation rate of 3.0 percent.

them. The result is that projects get started and stopped, which raises the price of the projects. It also frustrates the public because they see no progress on projects that have been delayed, and discourages contractors from bidding on MassHighway work. An unpredictable flow of funds also results in the Commonwealth being late on contractor payments, which further discourages contractors from bidding. A two-year capital spending plan, along with the other recommendations, would help address these issues.

Oftentimes there are multiple parties and hence multiple funding sources for specific projects. The Secretary of EOTPW should develop a protocol for the coordination of all multiple-funded projects ensuring that projects do not start prior to identification and commitment of 100 percent funding availability.

## ■ Transit – MBTA

In Volume 1 we demonstrated that the MBTA has a critical and growing structural funding gap. The causes of that gap are an inability to control costs, plus a revenue stream that has not been as reliable as forecast or as robust as needed. This section addresses the cost-reform recommendations for the MBTA.

### **Recommendation 9: The Rate of Growth of MBTA Fringe Benefits Costs Should Be Reduced.**

***MBTA health and retirement benefits are among the most generous in the United States and will sink the Authority if they are not brought under control.***

In 2006, fringe benefits cost the MBTA \$147 million, which is 44 percent of the MBTA's fare revenue. By 2026, fringe benefits are forecast to cost \$695 million – 94 percent of estimated fare revenue. The combination of overly generous health care packages, early retirement, and 100 percent employer-paid health care premiums for retirees puts enormous unsustainable pressure on the MBTA's budget.

---

***The combination of overly generous health care packages, early retirement, and 100 percent employer-paid health care premiums for retirees puts enormous unsustainable pressure on the MBTA's budget.***

---

The MBTA's health care costs are 34 percent higher than the median surveyed transit agency in the United States for single premiums and 44 percent higher for family premiums.<sup>4</sup> For example, the Metropolitan Transit Authority in New York City pays less than half in health care premiums per employee than the MBTA. MBTA health care benefits are expected to grow from 10 percent of operating expenses today to 13 percent

---

<sup>4</sup> Source: John Dash survey of health care benefits for large transit agencies, July 2005.

within five years. One of the major reasons that the MBTA's health care costs are so high is because the agency contributes the same percentage of premium costs for expensive PPO plans as they do for less expensive HMO plans.<sup>5</sup> Employers all over the U.S. are facing runaway health care costs, but the MBTA's generous benefits magnify the severity of the problem.

The MBTA's liability increases substantially once employees retire. Not only are retirees provided with health care plans that have expensive premiums, but MBTA employees contribute nothing toward the premium. Further, MBTA employees may retire and immediately collect full benefits after 23 years of service, regardless of their age, unlike most retirement plans that have zero or reduced benefits until at least age 55. The result is that the MBTA will carry retirees, with full pensions, for three or four decades – in many cases longer than the employee actually paid into the system.

We recommend:

- Moving MBTA employees and early retirees from expensive PPO plans to the HMO plans;
- Phasing in a program whereby MBTA retirees contribute to the premium costs of their health insurance; and
- Establishing a minimum retirement age of 55 after 23 years of service before being able to collect pension and health care benefits.

We estimate that the overall cost savings of these three changes will total at least \$1.1 billion in the first 20 years of their implementation. Since the current cost structure is largely the product of past collective bargaining agreements, MBTA management and labor should address this issue keeping in mind the perspective of the long-term viability of the organization. If they cannot come to terms that bring MBTA benefits in line with benefits in other organizations, the Legislature should take the necessary action to accomplish this.

### ***Move MBTA Employees to an HMO System***

The MBTA's health care benefits are structured so that employees are encouraged to choose plans that have high premium costs paid by the MBTA. Rather than paying a certain dollar amount towards health care premiums, the MBTA pays a certain percentage of that premium (15 percent to 25 percent, depending on the employee category) regardless of the cost of the plan. For PPO plans that percentage amounts to \$18,600 per family in 2007, which is at least \$4,800 per family more expensive than the HMO plan (see Exhibit 4). Among current employees, 41 percent choose these more expensive PPO plans.

---

<sup>5</sup> There are a numerous types of health care plans available today. PPO (Preferred Provider Option) plans allow people more flexibility in their choice of doctors but cost considerably more than HMO (Health Maintenance Organization) plans which are more aggressively managed by primary care physicians and have a more limited network of health care professionals.

#### Exhibit 4. MBTA Contributions to Health Care Premiums in FY 2007

Plan Type	Family	Individual
PPO	\$18,600	\$7,800
HMO	\$11,500 to \$13,800	\$4,600 to \$5,100
Difference	At least \$4,800	At least \$2,700

Many employers offer several plans of various benefits and cost, but they pay the same dollar amount for each, with the employee picking up the difference for more expensive plans. The result is that these employers are better able to control excessive costs.

The MBTA should change its health insurance policy so that it either eliminates the more expensive PPO plan or contributes the same dollar amount as for the less expensive HMO plan. This would be consistent with other public and private sector practices. MBTA employees would still have the same quality of health care coverage as anyone else participating in HMOs. But, if they still desire to use a PPO, employees can have the choice of paying for that additional benefit themselves.

#### ***Phase in Cost-Saving Changes to Retiree Health Benefits***

MBTA retirees get a particularly good deal with regards to health insurance, since they make no contribution to the premium. Not surprisingly, 86 percent of retirees under age 65 choose the more expensive PPO plan. This incentive, combined with the generous pension benefits described below, makes it more attractive to retire than to stay employed. In addition to moving away from the heavy subsidies for PPO plans described above, the MBTA should introduce a system where retirees make some contribution for their own health insurance.

To avoid creating an unexpected burden on current retirees or those nearing retirement, the Commission recommends a phased approach to having MBTA retirees start to contribute to their health care plans (Exhibit 5):

- Those already retired for 10 years or longer and/or those 65 years of age or older would have no change made to their plans or payment status.
- Those under 65 who have been retired less than 10 years should be given the opportunity to have a plan with no premium contribution if they use an HMO. If they choose to stay with the more expensive PPO plan, they would pay the difference in the premium.
- Current employees with 10 years or more of service should still enjoy free HMO coverage when they retire. They could keep the PPO plan if they pay the difference in the employer's premium from that of the HMO plan.
- New hires and current employees with less than 10 years of service should have a 15 percent premium contribution for their HMO when they retire, and an option to have a PPO plan if they pay the 15 percent premium and the difference in the employer's premium from that of the HMO plan.

## Exhibit 5. Commission Proposal for MBTA Health Care Benefits for Retirees

Retirement/ Employment Status	Age	Years of Service	HMO Plan	PPO Plan
Retired 10 years or more	N/A	N/A	Free	Free
Retired 0 to 10 years	Under 65	N/A	Free	Retiree pays difference from HMO
Employed	N/A	10 or more	Free	Employee pays difference from HMO
Employed	N/A	Less than 10	15% contribution	Employee pays difference from HMO

### ***Establish a Minimum Retirement Age of 55, after 23 Years of Service, in Order to Obtain Pension Benefits***

Pension plans that allow employees to retire early usually have a reduced benefit associated with those years that are below some reasonable threshold. However, MBTA employees may retire after 23 years of service and immediately collect full benefits, regardless of their age. The result is that the MBTA will carry retirees, with full pensions, for three or four decades – in many cases longer than the employee actually paid into the system.

We recommend that benefits should not be collected until these employees have reached age 55. If they reach 23 years of qualified service prior to age 55, they could either continue to work in the system or retire – but they should not be eligible for pension benefits until age 55. This change should be phased in and thus not apply to any employee who currently has 10 years of service or who has already retired.

## **Recommendation 10: The Unnecessary Constraints on MBTA Management Should Be Removed**

***MBTA managers cannot be expected to manage their operations efficiently without the tools available to managers at companies all over the world. Enabling the MBTA management to better control work assignments and reduce overtime will save money.***

In 1980, the Legislature passed the Management Rights Act to give the MBTA greater authority to manage its work force in order to control costs and improve services. However, in 1995 the Legislature undid these reforms and thereby restricted the MBTA's freedom to control employee work assignments. These restrictions add costs every year to the MBTA's budget in which labor costs make up 60 percent of total operating expenses. The Massachusetts Legislature should pass legislation restoring management rights to the MBTA.

Another example of the Legislature placing constraints on the MBTA's ability to manage its costs is the so-called Pacheco law. This act's most egregious provision requires that actual private sector costs be measured against theoretical (but not actual) in-house costs in determining whether the service is most cost-effectively performed by public employees or private contractors. We need to amend the law so that real costs are compared against real costs. Since the MBTA has many existing private contracts not subject to this law, this change is not likely to produce major savings. Nonetheless, the act is an unnecessary burden that inhibits management.

### **Recommendation 11: The MBTA Needs to Fully Fund Its State of Good Repair Program. This Goal Can and Should Be Achieved by the Commonwealth Assuming the Debt from Central Artery/Tunnel Transit Commitments.**

*The MBTA finds itself in a downward spiral in which it cannot generate the revenue necessary to achieve a state of good repair (SGR), meaning that the MBTA cannot improve service quality, retain and attract riders, and increase revenue over time. Fully funding the SGR program can be achieved if the MBTA is relieved of the obligation of paying back debt imposed by Central Artery/Tunnel (CA/T) commitments.*

The MBTA has a capital backlog of \$2.7 billion to achieve a state of good repair (excluding expansions). In order to eliminate this capital backlog within the next 20 years and to reap the service quality improvements that go along with these repairs, the MBTA needs to spend \$570 million per year (plus inflation adjustments). However, the MBTA has been spending only \$470 million per year, an amount that keeps the system in its current state but does not allow a reduction in the \$2.7 billion backlog, meaning that the system would never achieve a state of good repair.

The MBTA has over \$5.2 billion in outstanding principal debt and paid \$351 million or 27 percent of its operating budget on debt service in FY 2006 – more than the total of all fare revenue collected. About 35 percent of the principal amount of the outstanding debt (\$1.8 billion) is directly attributable to carrying out CA/T commitments. That debt is rightly the responsibility of the Commonwealth, not the MBTA. Level-funded over a 20-year period, this would shift about \$117 million in debt payments from the MBTA to the Commonwealth. It should be emphasized that this debt must still be paid. The substance of this recommendation would transfer this obligation from the MBTA to the state budget.

The Legislature should require that this debt relief be used for capital needs and not to subsidize day-to-day operations. This would allow the MBTA to spend an additional \$100 million per year on capital improvements to move towards achieving a state of good repair.

## **Recommendation 12: The Commonwealth Should Pay for All MBTA Capital Expansions, and Before Committing to a Project, the MBTA Should Demonstrate that Adequate Revenues Are in Place to Operate and Maintain the Expansions.**

The MBTA has no excess dollars to put toward transit expansions, so it is clear that any such projects should be paid for by sources other than the MBTA. Therefore, the Commonwealth's share of any transit expansion will have to compete with the Commonwealth's other transportation and nontransportation capital needs within the Commonwealth's annual bond cap.

In addition, transit expansions increase operating costs. To avoid further erosion of the state of good repair of the existing system, the MBTA should analyze the cost to operate and maintain any expansion projects on a 20-year time horizon to determine whether or not it has the financial capacity to operate and maintain any new service, even if the capital funds to build the project are provided from other sources. In addition, the MBTA should maximize Federal and private participation in any new ventures.

The MBTA is under constant pressure to expand so that it can serve new markets. This is an admirable goal, but as we demonstrated in Volume 1, the agency does not have the financial capacity to operate and maintain the current system in the state of good repair. Before embarking on expansion projects, the MBTA should demonstrate that any new service will not divert funds from other needed maintenance and operations.

## **■ Transit – Regional Transit Authorities**

While the budgets of the Regional Transit Authorities (RTAs) are small – \$214 million in total for all 15 RTA's operating costs versus \$937 million for the MBTA alone – the Commonwealth's RTAs provide critical public transit services in some of the most economically challenged urban and rural areas of the Commonwealth.

Of the RTAs combined \$214 million in operating costs in fiscal 2007, \$112 million is covered by fares and other system revenue, \$27 million by Federal operating assistance, \$23 million in local assessments, and \$52 million in state contract assistance. In recent years, fare revenue has stagnated; the 2.5 percent cap on spending growth has hindered the ability of RTAs to generate new services to generate revenues. While Federal aid is increasing, local assessments are capped by Proposition 2½ to growth of no more than 2.5 percent annually and state contract assistance has increased minimally since FY 2002. As a result, RTAs have had to cut services significantly in recent years.

The current approach to funding the RTAs has several basic problems:

- RTAs are funded in arrears by legislative appropriation in the same way that the MBTA was funded prior to Forward Funding;
- RTAs are limited in their ability to initiate new services (even when they might generate substantial revenue) because of a statutory 2.5 percent cap on the growth of operating expenditures; and
- RTA debt is not currently supported by the full faith and credit of the Commonwealth, resulting in higher interest payments.

### **Recommendation 13: Regional Transit Authorities Should Be Forward-Funded.**

***Forward Funding would bring greater certainty to the RTAs in planning their operations and reduce the cost of borrowing necessary to bridge its funding needs.***

Moving to Forward Funding would require the Commonwealth to double-fund the RTAs one time. However, Forward Funding would reduce the RTAs' need to borrow against future state contract assistance. In general, Forward Funding would put the RTAs on a more solid financial footing and make them less dependent on the uncertainties associated with retroactive legislative appropriations. Once Forward Funding is in place, the cap on RTA expenditures would no longer be necessary. The level of state support would be determined before the start of the fiscal year and proposed amounts for state contract assistance would be reviewed and potentially amended by the EOTPW, Executive Office for Administration and Finance (A&F), the Governor's Office, and the Legislature before being adopted as part of the budget.

### **Recommendation 14: The RTAs' 2.5 Percent per Year Cap on Operating Cost Growth Should Be Eliminated.**

***The current state law that limits RTAs' operating growth rate to 2.5 percent per year has proved to be a disincentive to expanding services; other mechanisms adequately keep costs under control.***

Language in the state budget line item for RTA contract assistance limits RTA operating cost growth to 2.5 percent annually, with certain exceptions. A report prepared by KPMG for the Executive Office of Transportation in January 2000 recommended eliminating the 2.5 percent cap as part of a proposal for forward funding of the RTAs. The Blue Ribbon Commission on Regional Transit Authority Financing also recommended eliminating the cap as part of its Forward Funding proposal.

Lifting the cap will encourage RTAs to generate additional system revenues, such as fares, parking and advertising, and to utilize these revenues to expand services. The 2.5 percent expenditure cap has hindered the RTAs' ability to meet service demands. While the cap was clearly intended to control growth in state costs – and has produced that result – it also

has had the unintended consequence of acting as a structural disincentive for RTAs to expand services and generate additional revenues. Because the cap is applied to growth in RTA operating costs, adding services can put an RTA over the cap even if the cost of the new services is totally or partially covered by additional revenues. While costs covered by Federal, municipal and private payments, as well as the costs of complying with the Americans With Disabilities Act, have been excluded from the cap, costs covered by fares, parking, advertising and other revenues have not.

Since spending additional revenues could put a RTA over the cap, the authorities have little reason to maximize system-generated revenues. As a result, growth in RTA services has been stunted and revenue recovery ratios are lower than they could be. In addition, differing interpretations of the exclusions lead to inconsistent calculations of the cap for individual RTAs.

As with other agencies, RTA budgets can be controlled through the state budget process. Also, local officials sit on the RTA advisory boards that approve all service and spending changes. Since local governments cover at least 25 percent and as much as 50 percent of the net cost of service, the advisory boards have ample incentive to control costs.

### **Recommendation 15: RTAs Should Be Allowed to Borrow with the Full Faith and Credit of the Commonwealth.**

*The RTAs are state entities that should be allowed to borrow under the full faith and credit of the Commonwealth. This would reduce borrowing costs without having any impact on the Commonwealth.*

The RTAs borrow roughly \$50 million per year that would still be needed even with Forward Funding. This is a negligible portion of the debt for which the Commonwealth provides full-faith-and-credit backing. Commonwealth backing would save interest costs of about \$2.5 million per year or \$65 million over the next 20 years.

### **Recommendation 16: The Secretary of Transportation Should Exercise a Stronger Coordinating Role With Respect to RTAs.**

*In addition to providing essential transit services to those areas in the Commonwealth not served by the MBTA, RTAs can become important generators of local and regional development through creative approaches to transit-oriented development. The Secretary of Transportation should provide the coordination and leadership to ensure that the RTAs have the support and resources necessary to fill this important role.*

The Secretary is already responsible for developing a statewide transportation plan, and coordinating the development of RTA plans to leverage other sources of money, such as those from the Federal Transit Administration (FTA). However, this responsibility has not been a priority in the past.

The Secretary should make this coordination role a priority and should establish an internal process that facilitates creative projects regionally. This will leverage existing and future FTA funds and potential private sector investment capital resulting in improved regional mobility and transit-oriented development in areas not served by the MBTA.

## ■ **Recommendations That Apply Across Agencies**

### **Recommendation 17: The Secretary of Transportation Should Have the Authority to Coordinate all Aspects of Commonwealth Transportation.**

The enactment of reform legislation in 2004 began a long-overdue process of vesting the Secretary of Transportation with new powers and an expanded role as Chair of the Turnpike Authority Board and a member of the Massport Board (effective July 2007). We recommend that the Secretary be designated as the Chair of the Massport Board, consistent with his other roles as Chair of the MBTA and MassPike Boards. Chairing all three Boards will enable the Secretary to set a coordinated transportation agenda, and ensure that spending policies reflect urgent needs. He will also be in a position to make sure that the trust agreements of the transportation authorities do not interfere with the larger mission of creating a cohesive transportation system for the Commonwealth. The Legislature should build upon its 2004 reforms and empower the Secretary to establish an overall transportation finance plan for the Commonwealth including the MBTA, Massport, and Massachusetts Turnpike Authority.

### **Recommendation 18: The CEO of Each Massachusetts Transportation Agency Should Institute a Rigorous Performance Evaluation Process.**

Most of those employed in the transportation agencies and authorities make valuable contributions, but others are not effective in their jobs. These nonperforming employees lower staff morale, force good employees to carry a greater work load, waste vital resources, and give taxpayers a bad impression of the whole operation.

All Massachusetts transportation agencies need to take measures to remove unproductive or unnecessary employees. We recommend a rigorous performance evaluation of all existing employees. Employees who do not meet established performance goals should be terminated. Each and every department should be looked at to determine if they have the appropriate number of employees to achieve their objectives. We cannot afford to carry unnecessary employees because small increments add up to big costs.

There are approximately 10,000 people employed in the various transportation agencies and authorities. It would be surprising if, at a minimum, just 1 percent (100 people) are not needed or are not suited to achieve their agency's mission. Such a reduction in unnecessary or unproductive personnel could save approximately \$7.5 million per year (at a

conservatively estimated cost of wages and benefits of \$75,000 per year). Thus, each 1 percent saves almost \$200 million (accounting for anticipated inflation) from the gap in our 20-year analysis.

Of course, there may be other areas in which more personnel and/or more properly suited personnel would help to achieve our transportation goals in a more timely and cost-effective manner. We have not conducted a management study of the vast bureaucracy to make these determinations. But, we strongly believe that senior management needs to review their organizations, staffing levels and individual employees to determine what savings can be achieved and how performance can be improved.

### **Recommendation 19: All Massachusetts Transportation Agencies Should Have the Same \$100,000 Tort Liability Limit as Municipalities.**

***The Legislature should include the MBTA, Massport, the Massachusetts Turnpike Authority, and all 15 RTAs among the agencies that are protected by a \$100,000 limit on their tort liability***

This proposal would bring these agencies' legal liability limit in line with other state agencies and would result in substantial cost savings for transit authorities. For example, as a self-insured agency, the MBTA is directly responsible for legal settlements up to \$7.5 million (at which point excess liability insurance takes over) and the MBTA recognizes the losses in its operating budget. Between 2002 and 2006, the MBTA paid a total \$17.5 million in legal settlements for cases above \$100,000. Assuming that all cases had fallen under the \$100,000 cap, the MBTA could have saved up to \$14.3 million during that period, more than \$3.5 million annually. Over 20 years, this could save almost \$100 million at the MBTA alone, with additional savings at other agencies.

### **Recommendation 20: The Vast Majority of Our Funds for the Foreseeable Future Should Be Devoted to Maintenance and Rehabilitation.**

There is tremendous pressure on elected officials to highlight the building of new projects rather than taking care of old ones. New projects generate headlines and ribbon cutting ceremonies, while maintenance rarely finds the spotlight. And yet, paying attention to routine and programmed maintenance is critical. A recent report by the Pioneer Institute recommended setting up a Commonwealth Facilities Maintenance Reserve Fund.

The Commission agrees with the sentiment behind the Pioneer Institute's recommendation, but we do not have the luxury of reserving funds for future maintenance. The reality is that the vast majority of transportation funds should be devoted to maintenance and rehabilitation for the foreseeable future. The asset management systems recommended earlier will provide the framework for deciding how best to spend these maintenance funds. Meanwhile, any new large-scale transportation projects should include at the outset a reserve fund for maintenance.

## **Recommendation 21: Transfer the Tobin Bridge from Massport to the Metropolitan Highway System (MHS).**

The Tobin Bridge operates as an essential link in the urban roadway network in the Boston area. In 1997, the Legislature created a single cost center – the Metropolitan Highway System (MHS) – to operate and maintain all of the major roadways, bridges, and tunnels providing mobility in and out of Boston. The Tobin Bridge was left out of the MHS, even though it is in every respect a logical component of that system. In Volume 1, the Commission estimated that this transportation asset has a positive cash flow. The tolls paid by users of the Tobin Bridge should be included in the MHS cost center and dedicated to our surface transportation system.

## **Recommendation 22: Transportation User Fees Must Be Dedicated to Transportation.**

Transportation in the Commonwealth is paid for by a variety of revenue sources. There is a perception that there is less of a formal connection between transportation revenues and expenses than there should be. This diminishes the public's confidence that their transportation expenditures are being spent on transportation projects.

For example, in 2003 the motor fuel tax was increased by 2.5 cents (raising approximately \$75 million per year) to fund an underground storage tank program. This program is operated by the Department of Revenue and the revenue is not necessarily used for underground storage tank remediation. It also does not appear to have a sunset clause. There is a reasonable connection between motor fuel taxes and underground storage tank remediation, but if the revenue connected with this program is not being used for that purpose, it should either be eliminated or folded into transportation. We recommend that a thorough accounting of the underground storage tank program be conducted to determine how much of this 2.5 cent increase can be spent on the transportation system.

Other transportation-related revenues that are used for non transportation purposes include a portion of the highway fund that pays for the state police and district attorneys and moving violation fines that pay for the witness protection program. We are not commenting on the worthiness of these programs or the amount of the expenditures. We also appreciate that many nontransportation generated revenues are dedicated to support the transportation system. But, we think the system would benefit if transportation dollars stayed in the transportation system and general fund revenues were dedicated to general expenditures to the maximum extent possible.

This reform does not produce savings. Rather, it addresses the public perception that their transportation dollars – whether paid at the gas pump or the toll booth or the fare box – are not paying for transportation needs. This perception serves as an impediment to achieving acceptance of the actions required to sustain our system.

The Commonwealth should move to a system whereby the motor fuel tax, registration fees, and other transportation revenues are directed to the needs of the transportation system. This will make it clear to the public that user fees are being spent for their intended uses.



## 3.0 Second Principle: Revitalization

***In addition to the long list of important reforms that are necessary, we need to provide significant additional resources to address the State's large transportation funding shortfall.***

### **National Perspective**

*Massachusetts is not alone in struggling with a transportation funding gap. In 2007, Federal, state, and local governments will be collecting an estimated \$188 billion in revenue for transportation, which is \$55.1 billion short of the level of spending needed to "maintain" the nation's highways and transit systems and \$108.2 billion short of the level needed to "improve" them. By 2017, the gap between revenue and needs nationally will have widened to \$71.5 billion needed to "maintain" and \$137.5 billion needed to "improve" highways and transit systems.*

*A major reason for the shortfall in revenue is that Federal and most state gas tax rates have not been indexed to inflation and have not been increased frequently enough in the past decades to either offset inflation or to meet the increasing needs.<sup>6</sup> The last increase in the Federal gas tax of 4.3 cents per gallon was in 1993. Since then, Federal gas taxes have lost about one-third of their purchasing power to inflation. SAFETEA-LU, the most recent congressional reauthorization of the Federal surface transportation legislation, did not provide for an increase in gas taxes.<sup>7</sup> Instead, it masked our true needs by spending down the accrued balances in the Highway Trust Fund accounts. We are now eating into the principal of our Federal accounts. Obviously, this type of fiscal behavior can only go on for so long before we find ourselves with no money in reserve and insufficient revenues coming in to meet our needs.*

*The gap between needs and revenues will become much clearer to state transportation agencies and the public over the next five years as key transportation funding programs run out of money, while our systems continue to deteriorate. At current levels of income and expenditure, the Highway Account of the Federal Highway Trust Fund could be in deficit as early as next year (before the end of the SAFETEA-LU authorization period) and the Transit Account could be in deficit starting around 2013.<sup>8</sup>*

*State and local governments have been feeling the pinch of revenue shortfalls for some years. To maintain highway and transit systems, and in part to compensate for the lack*

<sup>6</sup> The exceptions are Florida, Maine, and Wisconsin, which index their motor fuel taxes to the consumer price index; several other states index to fuel prices.

<sup>7</sup> U.S. Chamber of Commerce, National Chamber Foundation. *Future Highway and Public Transportation Financing*. Washington, D.C., 2005.

<sup>8</sup> In July 2006, the U.S. DOT and Treasury officials reported to the National Surface Transportation Commission that tax receipts over the last several quarters were higher than anticipated, which may keep the Accounts from falling into deficit for another year.

of adjustment to gas tax rates, state and local governments have made increasing use of general taxes, specialized taxes, and direct user fees. Revenues from general and specialized taxes have grown at annual rates of about 7 percent, and revenues from direct user fees have grown at about 5 percent, while revenues from motor fuel and vehicle taxes have grown at around 3 percent annually albeit from a large base.<sup>9</sup>

For the short term, the options to raise immediate revenues are predominantly through increases in existing taxes and fees. Some states, such as Washington, have increased their fuel tax. This has involved a concerted effort by the state DOT to restore trust and confidence in the ability of the DOT to deliver projects at a reasonable cost and on schedule. Other taxes and fees that some states use include:

- Sales tax on gasoline (rather than, or in addition to, a flat per-gallon tax);
- Annual inspection fees;
- Motor oil disposal fees;
- Rental car surcharges;
- Traffic violation surcharges;
- Emission surcharges on new vehicles;
- Fees for heavy trucks;
- Fees for first time car registrations;
- Tire and battery fees;
- Surcharges on commercial parking spaces;
- Increased auto excise taxes; and
- Surcharges on deed transactions.

Some ideas that go beyond simply raising existing taxes and fees are:

- **Increasing Borrowing.** Massachusetts is already heavily in debt. Some states make creative use of debt, such as using revolving loans with state infrastructure banks, but these create no new revenue.
- **Regional Initiatives.** Some states give individual regions the ability to raise their own revenue, such as local option gas and sales taxes. Given the relatively small geographical size of the Commonwealth, the Commission has not considered the use of regional initiatives as a viable component of an overall revenue revitalization program.
- **Tolling.** Tolling has been looked at primarily for new highway capacity, which is not particularly relevant to Massachusetts. However the idea of tolling existing highways has been discussed seriously in other states, and is allowed through various Federal programs. Electronic toll collection that can be done without vehicles slowing down or stopping has increased the potential for tolling to contribute to both revenue and congestion concerns as discussed further below. Another tolling strategy involves creating so-called "HOT lanes" - these can either be for High-Occupancy vehicles and or they can be utilized to charge willing drivers a premium price.
- **Long-Term Asset Leases.** Chicago leased its Skyway for 99 years and Indiana leased its Turnpike for 75 years. Other states are considering similar proposals. These long-term asset leases bring a lot of quick cash to solve short-term funding needs, but have long-term consequences as well that should be seriously considered.

---

<sup>9</sup> Future Financing Options to Meet Highway and Transit Needs, NCHRP Project 20-24(49), Interim Report, May 2006.

## ■ Transportation Revenue Issues in Massachusetts

There are some harsh realities that we must deal with to address the \$15 billion to \$19 billion funding gap described in the Commission’s first report:

- The first principle – reform – will only take us so far toward closing the gap. We estimate almost \$2.5 billion of the gap can be met through reform, leaving a shortfall of \$13 billion to \$17 billion without achieving any system enhancements or expansions.
- Over time the gas tax<sup>10</sup> will continue to lose value because it does not rise with inflation and because motor vehicles will become more fuel efficient.
- Advanced technology provides new options for raising revenue.

There are no magic solutions to fill our transportation revenue gap. All solutions require revenue from some source that ultimately comes out of the pockets of users or the general taxpayer. Long-term asset leases, which were heralded as windfall paydays in Chicago and Indiana, are ultimately paid for by the users over the course of many decades. Debt puts off the day of reckoning, but also comes out of our pocket, with added interest charges.

Transportation should be paid for primarily by users. Unlike other public goods such as police and fire protection, transportation is a utility, and it is reasonable for users to pay for the use and benefit they derive from the system.

---

***Transportation should be paid for primarily by users. Unlike other public goods such as police and fire protection, transportation is a utility, and it is reasonable for users to pay for the use and benefit they derive from the system.***

---

The gas tax is a blunt instrument because it varies from vehicle to vehicle according to fuel efficiency, and does not reflect the value of roadways being traveled (e.g., local streets versus interstate highways.). The gas tax also cannot reflect the difference in value of driving on congested roadways at peak periods versus using those same roadways when there is plenty of capacity. When a driver uses a road during congested periods, that driver imposes congestion costs on other drivers – direct user charges could allow for this congestion cost to be captured.

The great advantage of the gas tax is that it is easy and inexpensive to collect, with the cost of collection less than 1 percent of revenue because it is actually paid to the Commonwealth by a small number of wholesale suppliers. More direct user fees such as tolls are comparatively more expensive to collect, because they require detecting, calculating and billing each individual trip. The cost of collecting tolls today varies from

---

<sup>10</sup> The gas tax is more properly known as the motor fuel tax, since diesel is taxed in a similar way to gasoline. Since “gas tax” is the more common phrase, we relent to using it here. In reality, the gas tax is a user fee, paid in proportion to the fuel used, a proxy for how many miles driven.

about 10 percent to 30 percent of revenue (and sometimes even more), thereby eroding the net revenue available to the State.

However, the old paradigm of toll booths stopping traffic to collect revenue is quickly becoming a thing of the past. Today's technology makes a mileage-based user fee a reality without the impediment of toll booths. More and more places are using nonstop means of collecting fees from drivers. There are roads in Toronto, Melbourne, Israel, California, and Texas where everyone pays electronically without even slowing down. Over time, the cost of collection will drop so that charging direct user fees will become more feasible and desirable.

There are two main reasons to think about moving to a revenue system that does not rely so heavily on the gas tax. One relates to shifts to alternative fuels and propulsion systems. The other is the opportunity to charge users more precisely for what they use.

A 2005 report of the Transportation Research Board Committee for the Study of the Long-Term Viability of Fuel Taxes for Transportation Finance<sup>11</sup> concluded that such erosion of fuel tax revenues will become a real concern in another 10 to 15 years. On the other hand, Massachusetts is among many states that have already experienced declines in receipts from their gas tax. So, given recent trends this assessment may well be optimistic. In any event, the time to start planning for this change is now.

Our recommendations are directed toward establishing revenue mechanisms that keep up with our real transportation needs, keep pace with inflation, and keep faith with the citizens of the Commonwealth. While most existing revenue sources have not kept up with either inflation or demand, the Commission recognizes that certain user fees – particularly MBTA fares and tolls on the urban Metropolitan Highway System – are increasing to the point where they can no longer be considered inexpensive systems for the users.

---

***Our recommendations are directed toward establishing revenue mechanisms that keep up with our real transportation needs, keep pace with inflation, and keep faith with the citizens of the Commonwealth.***

---

We also must address the equity and fairness of revenue collection. For example, the funding concept developed in the mid-1990s to pay for the Big Dig imposes an inordinate burden on motorists using the Boston Extension of the Turnpike and the harbor tunnels (east-west drivers), with no charges for north-south drivers. A new way of fairly apportioning the cost of this vital transportation system should be put into place.

In addition, with the gas tax, fuel efficient vehicles pay far less per mile than those that burn more fuel. This may be good environmental policy, but from the perspective of a highway user charge, this is unfair. A mileage-based user charge could be calibrated to take these and other factors into consideration, thereby aligning the policy objectives of paying for the highway system, managing congestion, and being responsible stewards of the environment.

---

<sup>11</sup> TRB Special Report 285, *The Fuel Tax and Alternatives for Transportation Funding*, 2005.

## ■ Revitalization Recommendations

### **Recommendation 23: The Gas Tax Should Be Increased by 11.5 Cents and Indexed to Inflation.**

***The 21 cent portion of the gas tax that goes to transportation was last raised in 1991, meaning that its buying power is now only 14 cents. We need a reliable, predictable, and sizeable revenue source to take care of that system. In the short term, the gas tax is the most effective way to finance our transportation system.***

The Massachusetts gas tax is 23.5 cents per gallon. Of that, 2.5 cents goes to an underground storage tank fund. The remaining 21 cents available for transportation uses has not gone up since 1991.

This year's 16-year-old first-time drivers were born in the same year that the gas tax was last raised.

These kids have grown and the costs to operate and maintain our system have grown. Inflation has

eroded those 21 cents such that its buying power is

only 14 cents – meaning it has lost almost one-third of its value since 1991. The state gas tax once equaled 18 percent of the cost of a gallon of gas. Now, it represents about 7 percent. The state gas tax is a fixed amount, not a percentage of the price of a gallon. Currently, there is no component of the gas tax that increases with inflation, unlike most other taxes.

---

***This year's 16-year-old first-time drivers were born in the same year that the gas tax was last raised. These kids have grown and the costs to operate and maintain our system have grown.***

---

After accounting for the \$2.5 billion in reform savings described in Section 3, there is still a funding gap of \$13 billion to \$17 billion remaining to be solved, just to address current and future needs of our existing transportation system. There are numerous ways to fill that gap, and as we indicated before, they all require money that has to come either from users of the system or more general taxes. There is simply no other way. The state gas tax provides the most viable approach in the short term to meeting our need for additional revenue.

The Commission recommends an immediate 11.5 cent per gallon increase in 2008. This would restore the value of that fee to what it was in 1991, meaning the gas tax would increase to 35 cents. This increase will produce an additional \$345 million per year.

Over the 20-year period, given today's level of fuel efficiency and travel patterns, this proposed increase will close about \$7.0 billion of the funding gap. After this increase, the fee should be adjusted annually to match the change in the consumer price index (CPI), (which has averaged 3 percent per year over the past two decades). This series of annual increases over the 20 years would produce an additional \$5.5 billion, for a total of \$12.5 billion in new revenues raised from the gas tax. Any portion of the UST program that is no longer needed for that effort should be dedicated to meet our transportation needs.

However, improvements in fuel efficiency are inevitable, and this will negatively impact gas tax revenues. If the average vehicle is able to achieve a 15 percent increase in fuel efficiency by 2026, Massachusetts will see a \$2 billion reduction in gas tax collections over

the 20-year period, reducing the total collected from \$12.5 billion to \$10.5 billion. By this time, we expect that the value produced from the gas tax will have eroded to such a point that alternative solutions, such as the mileage-based user fee described in Recommendation 27 will be instituted, providing additional revenue capacity.

If the concept of moving to a mileage-based user fee is unattractive, it would be possible to generate sufficient revenue from the gas tax by increasing it at a higher rate than proposed above. An additional one-time increase in the tax of 20 cents in 2017 would raise \$6 billion between 2017 and 2026, assuming current fleet fuel efficiency.

To put these increases in perspective, Massachusetts is currently among the lowest of its neighboring states (New England, plus New York), and over 5 cents per gallon below the average of these states (Exhibit 6). The 35 cents proposed for 2008 would still be below the rates in New York and Connecticut. These comparisons assume that other states take no action to raise their own gas taxes, which is unlikely because they are all facing deteriorating road and bridge systems in need of additional resources.

### Exhibit 6. Gas Taxes in Neighboring States *Cents per Gallon*

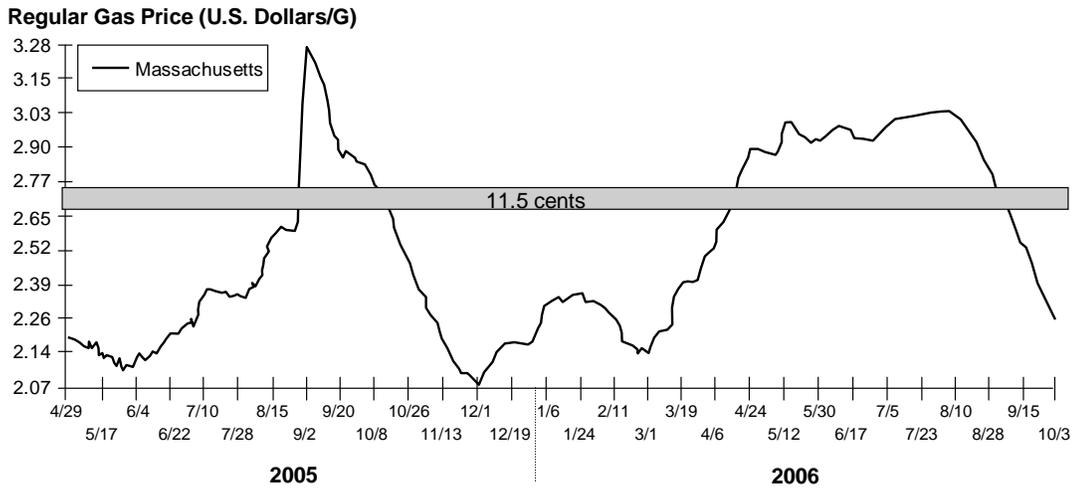
State	Gas Tax Rate
Vermont	20.0
New Hampshire	20.6
Massachusetts (today)	23.5
Maine	28.3
Rhode Island	31.0
Massachusetts (by 2008 after 11.5 cent increase)	35.0
Connecticut	37.0
New York	42.4
<i>Neighboring States Average</i>	<i>28.8</i>

The average vehicle in Massachusetts consumed 576 gallons of fuel in 2005, representing \$135 per year in gas tax payments. The proposed 11.5 cent increase would cost an average of \$66 per year per vehicle. This equals \$1.25 a week, less than 18 cents a day.

***The proposed 11.5 cent increase would cost an average of \$66 per year per vehicle.***

Another way to put a 11.5 cent adjustment in the gas tax in perspective would be to consider what has happened to the price of fuel recently (see Exhibit 7). Gas prices rose over one dollar per gallon between June and September 2005, and dropped almost 75 cents between August and October 2006. While a real cost to Massachusetts drivers, the proposed increase is relatively small when compared to the other factors affecting fuel price.

**Exhibit 7. 18-Month Average Retail Price Chart  
2005-2006**

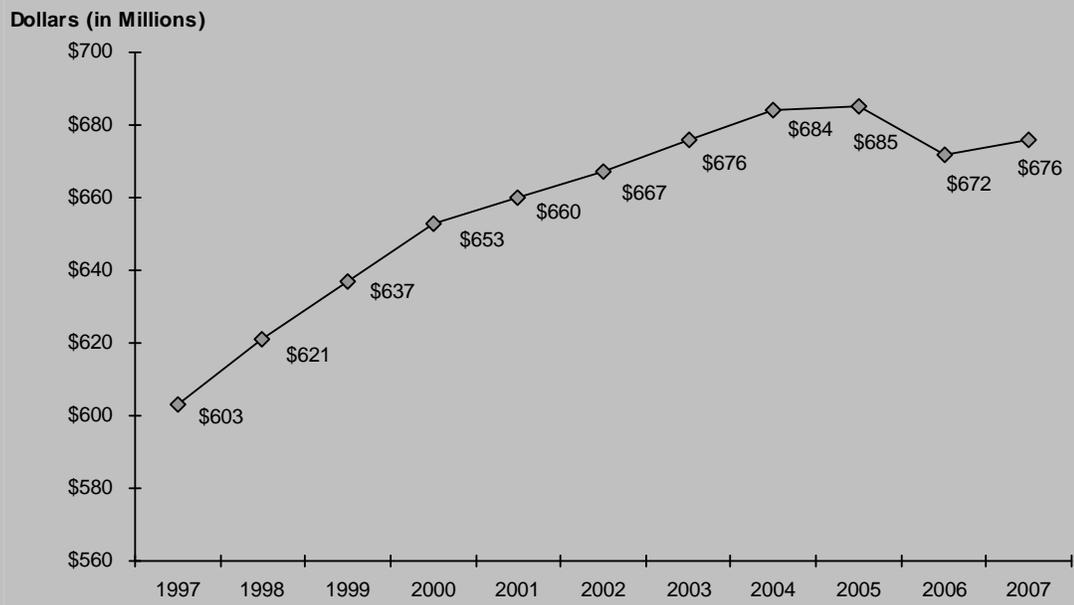


**The Declining Value of the Gas Tax**

*If the state gas tax rate of 21 cents per gallon holds steady, the Commonwealth should expect to collect about \$13.9 billion in revenues over the next 20 years. But, the introduction of more fuel-efficient vehicles and vehicles that do not use gasoline means that these expectations are not likely to be realized.*

*The estimates of future gas tax revenues in Recommendation 23 assume a 5 percent reduction in fuel use in each of the four 5-year periods of our 20-year forecast. The result is a \$2.0 billion reduction in expected gas tax receipts.*

**Total Fuel Tax Collections in Massachusetts (in Millions)**



## **Recommendation 24: The Massachusetts Turnpike Should Develop a Balanced Operating Budget for the Western Turnpike that Does Not Rely upon Spending Down Its Reserve Fund.**

***The Massachusetts Turnpike Authority needs to ensure that the Western Turnpike operating deficits will not be masked by spending down reserve funds, and that the long-term health of the Turnpike is considered in all management decisions.***

If tolls are not increased, the Western Turnpike will face a cumulative \$1.2 billion deficit over the next 20 years to pay for the operations and capital reinvestment needed to maintain the roads in a state of good repair. The Western Turnpike, that portion of the system between the New York border and Route 95/128, can only continue to run with an operating deficit because the Turnpike Authority is spending down its reserve funds, with the intent of having zero reserves by the time it plans to hand the road over to MassHighway. By statute, when the Western Turnpike bonds are paid in full in 2017, MassHighway is to make a determination whether it will accept the 123 miles of the Western Turnpike into the state highway system. The problem with this strategy is that the Commonwealth has no plans in place – or financial resources available – to assume responsibility for the Western Turnpike. Without action, neither the Turnpike nor MassHighway will have the resources available to operate, maintain, and rehabilitate this vital transportation link after 2017, and the MTA will have no reserve account to rely upon.

The Western Turnpike tolls were removed for passenger car travel between Exits 1 and 6 in 1996, but revenues needed to operate and maintain this part of the road system were never replaced. We need to make the income stream of the Western Turnpike meet its current and long-term maintenance and reconstruction needs.

There are three potential ways to close the resource gap on the Western Turnpike, which are not mutually exclusive:

1. Reinstate the tolls between Exits 1 through 6;
2. Raise the tolls on the rest of the Western Turnpike to make up for the lost revenue; or
3. Increase the gas tax to subsidize the Western Turnpike (in addition to the gas tax increase described in Recommendation 23).

## **Recommendation 25: Fares Should Remain a Meaningful Source of Revenue for the MBTA Through Regular and Predictable Increases to Keep Pace with Inflation.**

Virtually no transit property covers all of its operating costs with fares. Subsidies for transit are appropriate because transit provides value that goes well beyond its riders. It provides businesses with access to employees, congestion relief for clogged roads, and environmentally friendly means of moving large numbers of people. Since a robust transit system is vital to the economic well being of a major urban area, public subsidies are fair and appropriate. However, it is also reasonable for MBTA passengers to pay a meaningful share of the cost of using transit service, and a revenue recovery ratio of 50 percent is a fair target.

Compared to its peer transit properties in dense, transit-friendly areas, the MBTA's farebox recovery has been historically low – between 23 and 25 percent of operating revenue. Since Forward Funding, however, the MBTA has had three fare increases. With the recent fare increase in January 2007 and the implementation of a new fare collection system, this ratio has increased to almost 50 percent, but constant fiscal pressures have the agency looking at an almost \$50 million deficit for 2008. We cannot afford to lose ground on this important revenue source.

The MBTA should adopt a policy of maintaining a 50 percent revenue recovery ratio. It should review its operations annually, and adjust fares (or expenses) accordingly to achieve the 50 percent value. This policy should result in fares rising approximately 10 percent every three years and thereby keeping up with inflation. If MBTA raises fares on a regular basis, at the rate of inflation, almost \$2 billion is saved from the \$15 to \$19 billion funding gap we've identified.

### **Recommendation 26: Toll Increases on the Turnpike Extension and Harbor Tunnels Must Be Carried Out.**

*The Metropolitan Highway System (MHS) bonds are structured so that there are large increases in debt service in 2008, 2014, and 2020. In order to pay for these increases, the Turnpike has a legal commitment to raise tolls in those years. The Turnpike should fulfill that legal obligation, and also account for increases in maintenance expenses.*

Tolls are planned to increase on the Turnpike Extension and harbor tunnels in 2008 to pay increasing debt service on MHS bonds. This is an unalterable obligation under the existing contracts with bondholders. Additional toll increases are also planned in 2014 and 2020 as debt service goes up in those years. These toll increases were already assumed when we calculated the \$530 million funding gap for the MHS. The true maintenance needs for the MHS will remain unknown until completion of the stem to stern review, but these are likely to show the need for additional revenues. Sufficient toll increases should be carried out to maintain the financial integrity of the MHS, and to make sure that our investment in this project is not wasted through neglect.

### **Recommendation 27: The Commonwealth Should Move to a System of Direct Road User Fees as the Principal Source of Transportation Funding Using Modern Technology.**

*The gas tax has been a convenient means of charging road users for decades in Massachusetts and across the U.S., but all of our otherwise desirable efforts to reduce fuel consumption will result in less revenue from this source. Now, modern technology already allows user fees to be collected without drivers needing to slow down or stop. With such technology, [our roads and bridges can be treated like other utilities – gas, electricity, water – where everyone pays in small increments based upon their actual usage.*

The gas tax has one major advantage – it is easy and cheap to collect. But over time, the gas tax will become obsolete. National energy policy has already started to move in the direction of finding alternatives to fossil fuels, and the result of this is likely to be higher fuel economy and alternative propulsion systems that do not rely on motor fuel. The national 2007 energy bill set a goal for increasing fuel efficiency by 67 percent, and automakers have countered with a goal of 31 percent. A 31 percent drop in the fuel tax revenues in 2017 would equal a reduction in state gas tax receipts of about \$200 million per year (adding at least \$2 billion to our already identified \$15 to 19 billion funding gap).

---

***Our roads and bridges can be treated like other utilities – gas, electricity, water – where everyone pays in small increments based upon their actual usage.***

---

The Commission recommends that motorists using all major state highways should be charged a user fee because these highways provide a level of convenience above and beyond that of local roads. The cost of collecting revenue this way will be more expensive than collecting the gas tax. But moving to this new system has the benefits noted above. In addition, expanding direct road user fees can address the often noted inequity issues of our existing toll system, where I-90 drivers are paying 100 percent of tolls to fund the nontolled portion of the Metropolitan Highway System.

Although the technology exists today to create such a user-fee-based system, the details of this concept are complicated and need to be considered carefully. Issues of concern include the choice of technology, whether or not this method of collection should replace or supplement the gas tax, potential diversion of traffic to nonpriced roads, and equity related to which roads are priced. The status quo of the current gas tax system is firmly entrenched, and while it may not be embraced enthusiastically by the public, it is a known quantity. Building the consensus around changing that system may take time, but we should begin now.

Oregon and Washington have already taken the lead at researching the technology and behavior changes of similar road pricing systems. The Federal government has been studying alternative approaches to revenue collection, anticipating the declining value of the Federal gas tax. Massachusetts should also start planning for a transition to a new system.

If a broad-based road user fee of 5 cents per mile were in place just on our interstate road system, the Commonwealth could net approximately \$550 million per year, or \$5.5 billion over 10 years (Exhibit 8). To put this in perspective, this amount of money is about 80 percent as much as the Commonwealth collected (\$675 million) from the gas tax in 2007. Under this proposal the current tolls for the Turnpike roadways would be replaced by this uniform per-mile fee.

**Exhibit 8. Estimated Annual Net Revenue from a 5 Cent per Mile User Fee on All Massachusetts Interstate Highways**

VMT per week (million)	319
Number of weeks	52
Fee per mile	\$0.05
Annual gross revenue (million)	\$830
– Less cost of collection (15%) (million)	\$125
– Less Turnpike toll collections removed (million)	\$155
Annual net revenue (million)	\$550

Exhibit 9 shows the estimated daily interstate fee for commuters in representative communities. Because of how the tolls are structured on the Massachusetts Turnpike, a commuter from a Boston suburb traveling to downtown Boston is paying a relatively high charge per mile. For example a driver from Weston (approximately 11 miles from Boston) currently pays a total of \$4 in tolls for a 22-mile round-trip to Boston and back, an average of 18 cents per mile. One of the advantages of this proposed fee system would be to equalize the rates charged on the Interstate highways. Under the proposed system, most MassPike commuters into Boston would have their tolls reduced from current rates. At 5 cents per mile, the average commuter who travels into Boston from Natick would see their tolls reduced by \$2.60 per day (Exhibit 10).

**Exhibit 9. Estimated Daily Interstate Fee for Representative Round-Trip Commutes at 5 Cents per Mile**

	Round-Trip Mileage	Daily Cost at 5 Cents per Mile
Newton to Boston	18	\$0.90
Reading to Boston	28	\$1.40
Walpole to Braintree	32	\$1.60
Wilmington to Boston	34	\$1.70
Attleboro-Canton	40	\$2.00
Andover to Boston	48	\$2.40
Peabody-Waltham	52	\$2.60
Haverhill-Woburn	58	\$2.90
Lowell to Boston	60	\$3.00
Attleboro to Boston	78	\$3.90
Worcester to Boston	92	\$4.60

## Exhibit 10. Comparison of Daily Interstate Fee to Current MassPike Tolls

Commute	Round-Trip Mileage	Current Round-Trip Toll	Daily Cost at 5 Cents per Mile	Daily Savings
Weston to Boston	22	\$4.00	\$1.10	\$2.90
Natick to Boston	36	\$4.40	\$1.80	\$2.60
Westborough to Boston	56	\$5.20	\$2.80	\$2.40
Auburn to Boston	88	\$6.40	\$4.40	\$2.00

### **Recommendation 28: The Commonwealth Should Investigate Whether Public Private Partnerships are Appropriate for the Development and/or Funding of our Transportation Infrastructure.**

***Including the private sector in infrastructure development and funding is becoming more commonplace around the country. Massachusetts should investigate whether such partnerships make sense for the Commonwealth.***

The City of Chicago and State of Indiana both recently entered long-term leases with private concessionaires for existing, mature toll facilities. These long-term leases have resulted in huge sums of upfront cash (\$1.8 billion and \$3.8 billion, respectively). Many states are investigating whether such transactions make good business sense for them.

Long-term asset leases have proven to be as controversial as they have been profitable for the entities undertaking them. There are concerns about long-term control over public assets, provisions to allow for toll increases that are well above historical levels, and noncompete clauses of various specificity. Other forms of public-private partnerships such as design-build, design-build-finance, and design-build-finance-operate also have the potential to reduce costs, bring private sector ingenuity to the table, and improve project delivery.

The Commission did not undertake a detailed evaluation to determine exactly how and when such approaches may be appropriate for Massachusetts, but it is certainly something that the Commonwealth should pursue with an open mind and a transparent process to ensure the best possible decision is made. If public private partnerships are found to be desirable, money generated from these transactions must remain in transportation.

The Secretary of EOTPW should dedicate senior-level staff to this task. It will require vigilance and hard work to identify the right opportunities and to reap the benefits without suffering the pitfalls.

## 4.0 A Call to Action

In our Volume 1 report the Transportation Finance Commission detailed the transportation system's \$15 billion to 19 billion shortfall to care for our existing assets. Moreover, additional sums of money will be needed to enhance and expand our system to foster economic growth. These funding gap estimates have stood up to scrutiny.

In this Volume 2, we have presented a forward looking approach to address the problems identified in our first report. The recommendations and options address both the cost and the revenue side of the equation. Cost reforms are needed because the Commonwealth cannot ask people to pay more money until it can demonstrate that this money will be spent wisely, fairly and efficiently. Revitalized revenue sources are required because the proposed savings measures and existing revenues are insufficient to meet our needs. Implementing the recommendations would go a long way to ensuring that Massachusetts has a safe, reliable, and efficient transportation system that enhances our quality of life.

In March the Transportation Finance Commission presented a dire forecast of the current unsustainable course for financing our transportation system. In September, we present the means and the methods to obtain and achieve a sustainable transportation financing system well into the future. This is a call to action. These recommendations need to be

discussed and debated. We encourage the citizenry either to accept these steps or to offer other measures equal to the task. Those elected and appointed to manage our transportation system should accept that both reform measures and new revenues are a necessity and equally important. But, most importantly, our public officials should realize that failure to act is not an option, and that the time to act is now.

---

***This is a call to action. We encourage the citizenry either to accept these steps or to offer other measures equal to the task.***

---



# Acknowledgments

The Massachusetts Transportation Finance Commission wishes to acknowledge the contribution of Terry Regan of the Planners Collaborative and Jeff Buxbaum of Cambridge Systematics to this effort. Terry has shown a great understanding of the numbers and great patience with our innumerable requests to analyze (and reanalyze) various scenarios. Jeff has done a great job in drafting, challenging our thoughts and our writing and keeping this report organized as we waded through the complicated issues treated here. In addition, the Transportation Finance Commission would like to thank the staff of the various transportation agencies that provided information and assistance throughout this effort. We were regularly reminded of the talented and dedicated people that toil unheralded every day to make the Commonwealth's transportation system work.

The Chairman would also like to thank all of the members of the Commission for their hard work and dedication during the long process to produce our work. Each of the appointed members volunteered substantial amounts of their time and made a significant contribution to this product, which in turn should have a lasting impact on a transportation system. They were all generous with their thoughts, respectful of differences of opinion and open to new ways to solve our problems. Finally, the Chairman wishes to note the special contribution made by Jim Aloisi and Mike Widmer in preparing this Volume 2 report. Jim and Mike responded to scores of e-mails and innumerable phone calls, attended dozens of meetings and drafted and edited numerous versions of this document. There is no doubt that this product is the beneficiary of their talent and generosity.