

# MAXED OUT

## MASSACHUSETTS TRANSPORTATION AT A FINANCING CROSSROAD

A Primer from Transportation for Massachusetts (T4MA)



The people and economy of Massachusetts depend upon the state's network of rails and roads, but the transportation system is living largely on borrowed time and borrowed money. Faced with a crushing burden of debt, the system lacks the revenue to maintain its current condition, let alone meet future needs.

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**Transportation for Massachusetts (T4MA)**, a diverse coalition of Bay State organizations, seeks to promote an environmentally sustainable, reliable, and affordable transportation system for people across the Commonwealth. T4MA believes that a strong and competitive Massachusetts economy requires a transportation system that supports and connects communities while reducing greenhouse gases and other pollution and providing greater choices to users of the state's rails and roads. Through research, advocacy, and organizing, T4MA works to spur investment in transportation improvements and to obtain the best return on those investments to travelers and taxpayers. T4MA members promote better transportation, regional planning, affordable housing development, public health, environmental protection, environmental justice, and smart growth.



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# The Transportation Financing Crisis Matters

Fixing transportation is about more than rails, roads, sidewalks, bike paths, and bridges. Transportation is at the core of the Massachusetts economy, strengthening links to jobs, and delivering goods and services as well as opportunities. The system is also central to a more environmentally responsible future.

The Massachusetts transportation system is aging, unable to maintain itself in good condition and even more unable to expand to meet the requirements of the Commonwealth's people, environment, and economy. The situation—on the balance sheet and on the state's roads and rails—keeps getting worse. But as a Transportation Finance Commission created by the Legislature in 2004 succinctly put it, "We take our transportation system for granted."<sup>1</sup> Massachusetts can no longer afford such complacency. Nor can policy makers assume that passage of transportation reform two years ago solved the system's underlying problems. The need to understand the depth and significance of the transportation system's financial problems has become especially urgent.

The stakes are enormous: Life in the Commonwealth is built upon a transportation infrastructure that connects more than 6 million residents to jobs, schools, health care, libraries, ball fields, churches, and each other.<sup>2</sup> The system has approximately 72,000 miles of roads and more than 5,000 bridges.<sup>3</sup> The state has the nation's fifth largest transit system in terms of ridership<sup>4</sup> and, with South Station, the sixth busiest intercity rail station. While the transportation system features major players such as the Massachusetts Bay Transportation Authority (MBTA), and the Massachusetts Port Authority, it also consists of regional transit authorities, transport for senior citizens, and small roads and bridges used by residents, businesses, and tourists throughout the state. As a new transportation leadership team seeks to define the system's future in Massachusetts, the state faces a potential 30 percent federal transportation budget cut under proposals before Congress. For the highway division alone, this could mean the loss of \$180 million, reducing the federal contribution from \$600 million<sup>5</sup> to \$420 million.

Despite additional sales tax revenues for the MBTA and the metropolitan highway system provided by the Legislature, other

revenue streams, such as federal stimulus funds, are tapping out or are vulnerable to budget cuts. As funding declines, service will suffer in a range of ways, from bus routes that are eliminated and road and bridge repairs that are deferred to public transit expansions that are canceled, despite their important role in reducing vehicular emissions that contribute to climate change. Because of its financial problems, the MBTA plans to raise fares in July 2012 and service cuts are likely even with that increase.

The most direct measure of transportation's financing woes is not found in data or even reports such as this one. Rather, the impact is being felt in direct ways by people and businesses across Massachusetts. Just this past summer, a maxed-out system showed up as Red Line commuters stuck on trains for hours as equipment operating far past its expected lifetime suffered breakdowns. A maxed-out system means traffic bottlenecks that negatively affect deliveries to or by small businesses, and some regional transit authorities being forced to eliminate bus service on weekends, often leaving people who live outside of major urban areas with few if any public transportation options, forcing them back into a costly and environmentally harmful dependency on automobiles.

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*All Massachusetts transportation systems are jeopardized by a long pattern of underinvestment.*

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Warnings about the consequences of a financially strapped system are not new. "While the financial picture is grim, it is important to note that the MBTA is too valuable an economic asset to permit its further deterioration or even collapse, said a 2009 report on MBTA finance requested by Governor Deval Patrick and authored by David D'Alessandro. "A robust public transportation system provides vital economic and quality-of-life benefits to

residents from all walks of life and to businesses in the communities it serves.”<sup>6</sup> That applies to the entire transportation system in Massachusetts, all of which is jeopardized by a long pattern of underinvestment.

It’s true that the same can be said for other areas of government in this era of fiscal stress. From schools to health care, tough times are leading to curtailed services and hard choices across the board. But it is difficult to find a single area of state government with a more direct and indirect impact on the Commonwealth than transportation.

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## ECONOMIC COMPETITIVENESS

The Commonwealth’s transportation system supports a strong state economy by connecting workers to jobs and businesses to customers while helping spur private sector investment in commercial and residential development. But as the non-profit group Our Transportation Future warned in a July 2010 white paper, “[T]he condition of our transportation infrastructure is deteriorating to the point of threatening Massachusetts’s economic competitiveness.”<sup>7</sup> Achieving the great potential of Gateway Cities requires local transportation connections, including easy and affordable access to Boston’s economic engine. While problems such as traffic congestion add costs to business and thus hurt job creation, highway, transit, and other construction projects create not only better infrastructure, but good jobs.

## ENVIRONMENTAL CONSEQUENCES

Transportation decisions directly impact the environment. In Massachusetts, the transportation sector is the largest and fastest growing source of greenhouse gas emissions that cause climate change. Reducing such emissions will require more than fuel-efficient cars. Massachusetts also needs expanded transit, bicycle, and other alternatives to automobiles, especially ones with single occupants. Resulting improvements in air quality will contribute to healthier people and communities.

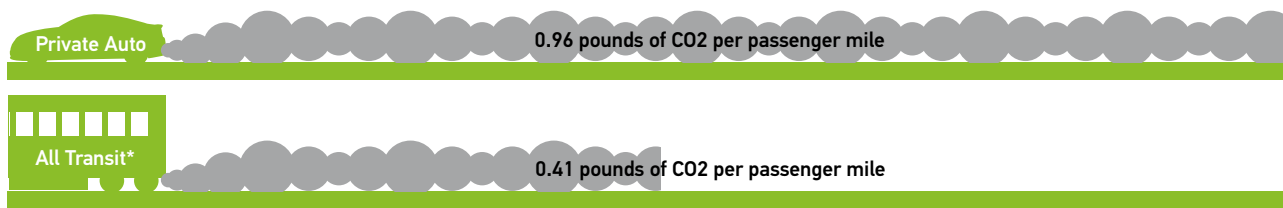
## QUALITY OF LIFE

A comprehensive transportation system can link people to a range of services. But today, such access is limited in many communities. For example, senior citizens—an already significant population segment that is growing as boomers age into it—require better mobility options. According to the U.S. Department of Transportation and the American Association of Retired Persons, more than 70 percent “of older households want to live within walking distance of transit.”<sup>8</sup>

## Progress On Reforms, But Reform Is Not Enough

Massachusetts has acted to improve how it operates and finances transportation. The first effort focused on the MBTA, which serves 175 communities over an area of 3,200 square miles with a daily ridership of approximately 1.24 million passengers.<sup>9</sup> In 2000, legislation referred to as forward funding provided the MBTA with its first-ever dedicated funding source, giving it one-fifth of the then-five percent state sales tax. However, with revenue from this sales tax source falling far short of projections, the MBTA’s financial condition has actually gotten worse since forward funding.

**FIGURE 1**  
**Comparing Greenhouse Gas Emissions**



SOURCE: Transit Cooperative Research Program, *Synthesis 84 Current Practices in Greenhouse Gas Emissions Savings from Transit*, page 8 figure 4.  
\* All transit includes bus, heavy, light, and commuter rail.



In 2009, the Legislature passed transportation reform, which restructured how Massachusetts operates and funds its highway system. The legislation merged the Executive Office of Transportation and several other transportation agencies into a multimodal department of transportation, MassDOT. While transportation reform has led to greater efficiencies and cost savings, it has not been enough to significantly ease fiscal stresses and better align the transportation system with the Commonwealth's broader social, economic, and environmental priorities.

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Investment to maintain and improve the Commonwealth's transportation system would make Massachusetts a more prosperous and sustainable place to live. Yet with a growing backlog of essential maintenance needs and a long list of projects awaiting funding, new proposals to better meet such important goals cannot be practically considered, especially with the state's high level of debt: In FY 2012, 45 percent of the combined annual operating budgets of MassDOT and the MBTA will go to pay off debt, not to operate and maintain current systems, let alone expand them.<sup>10</sup>

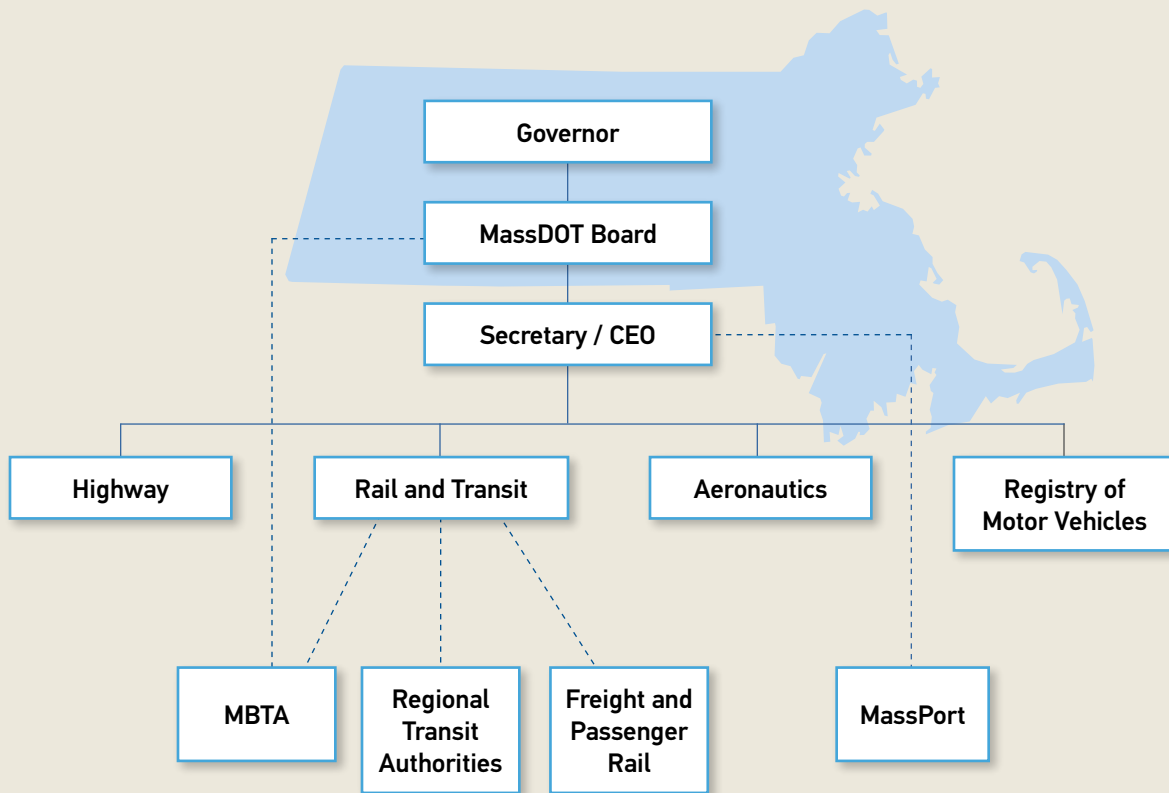
MassDOT now spends so much to repay borrowed money that it does not have enough left to pay for some routine operations, such as salaries. In FY 2011, MassDOT had to borrow \$145 million to cover operating costs.<sup>11</sup> In other words, MassDOT dipped into future funding to pay today's bills.

While the system clearly needs new revenue, the state must also spend its sparse transportation dollars more strategically. That means changing the way decisions are made so that transportation investments better align with the Commonwealth's broader needs. Transit riders need to know that their fares are being used effectively, especially since they may be going up. Motorists need to know that the gas taxes, tolls, and Registry of Motor Vehicle fees they pay are being spent wisely. All taxpayers need to know that good transportation investment decisions are being made and carried out as cost effectively as possible. Money paid into the system needs to be used for maintenance and projects that will provide the most value to all system users over the long term.

Numerous studies and reports have detailed the deepening financial crisis, and more are coming. But the complexity of transportation financing makes it difficult to grasp the full magnitude of the problem. Until more decision-makers, users, and taxpayers better understand this stark situation, it will not be resolved. The Transportation for Massachusetts coalition offers this report as a primer on Bay State transportation finance—how it works, why it is now in crisis, and the path forward.

# How Massachusetts Transportation Is Organized

FIGURE 2



SOURCE: MassDOT Fiscal Year 2011 Transportation Budget in Plain English

Transportation reform in 2009 merged the Executive Office of Transportation and several other agencies and authorities, including the Massachusetts Turnpike Authority, into MassDOT. MassDOT operates four divisions: highway, rail and transit, aeronautics, and the Registry of Motor Vehicles. MassDOT also has an Office of Transportation Planning. With the Secretary of Transportation serving as its chief executive officer, MassDOT has a five-member Board of Directors appointed by the governor.

While the same five-member board oversees both MassDOT and the Massachusetts Bay Transportation Authority, the MBTA and the state's 15 regional transit authorities maintain their status as independent authorities.



## Scope Of The Problem

Previous studies have documented that revenue shortfalls jeopardize the current transportation network and severely limit future choices. But as deep federal cuts loom, an already dismal outlook is about to get even worse.

The Transportation Finance Commission minced few words in its 2007 report. Transportation, it concluded, “has been neglected for years... [T]he system we take for granted will fail if we do not take prompt and decisive action.”<sup>12</sup> Taking “a very conservative view,” the Commission estimated that “over the next 20 years, the cost just to maintain our transportation system exceeds the anticipated resources available by \$15 billion to \$19 billion. This does nothing to address necessary expansions or enhancements.”<sup>13</sup>

Nearly five years later, the picture has gotten worse as an aging infrastructure has further deteriorated, even as demands on it increase due to population changes and other factors. The Commission’s numbers were based on a snapshot of five years ago; it defined the gap as the difference between available revenue and the ability to continue spending at then-current levels. The Commission did not have the information to actually assess how much needed to be invested in the system to keep it running well and up to current transportation standards. In the real world of transportation users, failing to achieve a state of good repair means train breakdowns, crowded roads, and an overall decline of service and systems.

Since the Commission’s report, the MBTA and MassDOT have been developing more current assessments of the system’s actual condition. The good news is that much better information about system conditions is now available; the bad news is that the gap between system needs and resources is much greater, in scope and dollars, than described by the Commission. The MBTA has a \$4.5 billion backlog of state of good repair and other projects. On the road and bridge side, MassDOT also faces a chasm between needs and revenues. According to MassDOT, the five-year cost to bring the system up to standards and meet high priority needs is \$6.17 billion, while the amount of funding projected to be available over the same time frame is \$2.5 billion.<sup>14</sup>

Frustrated commuters and drivers might wonder how state transportation agencies with multi-billion dollar budgets have

become so maxed out, like credit card users who have hit their limits. While this report tries to respond to that legitimate question, doing so is neither simple nor easy. Finding the answer to a seemingly basic question—how much money flows into the state’s transportation system and where does it go—requires detours through a stream of agencies, acronyms, funding sources, and other fiscal complexities that can confuse even policy wonks. But the bottom line is pretty clear: Massachusetts has been forced to use major chunks of its transportation dollars to pay the principal and interest on borrowed money (the official term is “debt service”), which itself is the result of the way revenue-starved Massachusetts funded yesterday’s transit, road, bridge, and other transportation projects. Unless the Commonwealth changes how it funds projects, transportation debt will continue to mount and revenues that could otherwise be used for system maintenance and improvements will instead be used to pay off the debt on borrowed money.

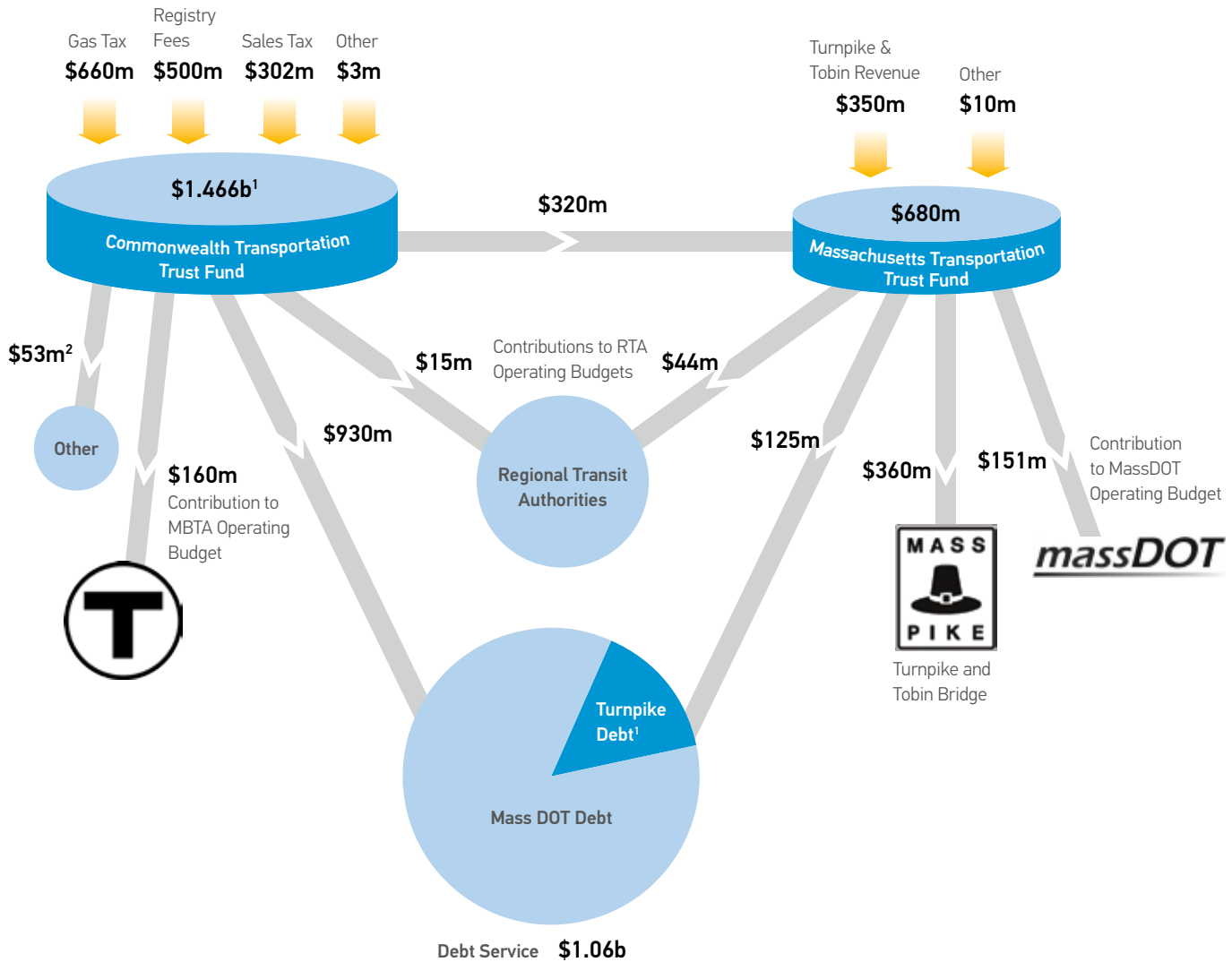
### The Growing Gap

Massachusetts has a variety of revenue sources for its transportation systems and uses them for a range of purposes. (See Figure 3.) These sources and uses are tracked separately for MassDOT and for the MBTA, which is a separate state agency. Further complicating the money picture, each agency has two kinds of budgets: the annual operating budget, which covers regular costs such as wages and routine repairs, and the five-year capital spending plan, which covers the costs for longer-term investments, such as bridge construction or train locomotives.

Federal funds are available mainly for capital spending. Local funding is targeted largely at local roads, though cities and towns also pay assessments to help cover regional transit system costs. Significant funding for transportation comes from state sources, including user fees such as tolls and transit fares, and state general revenue. For transit, the main funding source is the sales tax. The two largest state revenue sources for roads, bridges, and

**FIGURE 3**  
**State Funding for Transportation Operations**

Well over half of state transportation revenues go to pay off borrowing.



SOURCE: FY 2012 MassDOT Budget Hearing, January 3, 2011  
 1 CTF total includes estimation factor (FY 2012 MassDOT Budget Hearing, January 3, 2011.)  
 2 Reserve for snow and ice removal.  
 3 This debt relates to the Metropolitan Highway System portion of the Turnpike.

other state transportation systems are gas taxes and Registry of Motor Vehicle fees.

For their capital budgets, the agencies get federal funds and the state borrows money. Some of these revenues are used for maintenance or capital projects, while others go to pay the interest on money that has previously been borrowed.

Unlike most state agencies, whose budgets come from the Commonwealth’s General Fund, MassDOT is now funded through two

separate funds: the Commonwealth Transportation Fund (CTF) and the Massachusetts Transportation Trust Fund (MTTF).

The CTF, which is subject to appropriation by the Legislature, receives about \$1.5 billion a year from gas taxes, Registry fees, and sales tax money. The Legislature requires that CTF funds are first used to pay off debt, the amount of which is a function of past and current year spending on projects. The result is that little is left for actual transportation investments. In FY 2011, nearly 75 percent of CTF revenues (\$1.06 billion, including all gas



tax revenues and Registry fees) were spent on debt service.<sup>15</sup> (See Figure 3.)

Because transportation agencies don't have enough revenue to maintain their systems, the backlog of unmet needs grows larger and larger and the condition of transportation and transit systems deteriorates further. Without enough resources, modernization and expansion are now hoped-for luxuries for highway and transit agencies alike, despite their potential benefits.

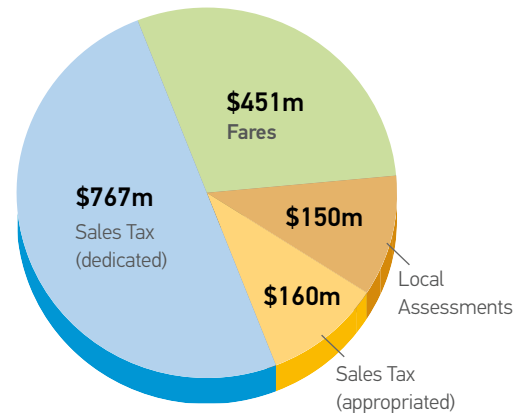
*Unless the Commonwealth changes how it funds projects, that transportation debt will continue to mount and revenues that could otherwise be used for maintenance and improvements in transit, roads, bridges and more will instead have to pay back borrowed money.*

### Debt: Necessary Funding Tool, But With Long-term Consequences

Finding the money for overdue repairs and other maintenance is a challenge under good conditions, and today's funding conditions are anything but good. The increasing costs of principal and interest payments on all the transportation debt the state has racked up cut deeply into its capacity to fund projects. The outlook is made even bleaker by the political and fiscal climate in Washington D.C.: federal funding for transportation is declining, potentially in significant ways. Any money that comes to Massachusetts in upcoming years will be largely used to pay off transportation bills the state has already run up trying unsuccessfully to keep the system in a state of good repair.

To understand the magnitude of the problem on the transit side, it's important to recognize that the MBTA carries the highest debt burden of any transit authority in the nation.<sup>16</sup> In FY 2011, 25 percent of its annual operating budget went to debt service, which is the MBTA's second largest cost after wages and benefits;<sup>17</sup> the system's annual debt payments are now nearly as large as its total revenue from fares.<sup>18</sup> The percentage going to debt service will continue to rise; the MBTA estimates that it will reach 30 percent by 2016. The shortfall between needed upgrades and available funds is actually worse than official numbers suggest. For example, the MBTA's Capital Investment Program does not include other identified and necessary projects, including about

**FIGURE 4**  
Total Local and State Revenue For MBTA Operations FY 2011







SOURCE: MassDOT Budget FY 2011

\$1.3 billion to replace aging cars on the Red and Orange Lines. (See Figure 5.) Similarly, MassDOT has identified major highway projects, currently estimated to cost \$550 million, for which no funding exists.<sup>19</sup>

A look beyond the operating budgets of MassDOT and the MBTA and into the \$1.5 billion CTF offers a more complete picture of how debt dominates everything else. Every year, the state col-

**FIGURE 5**  
Not a State of Good Repair

A sample of the challenge facing the MBTA:

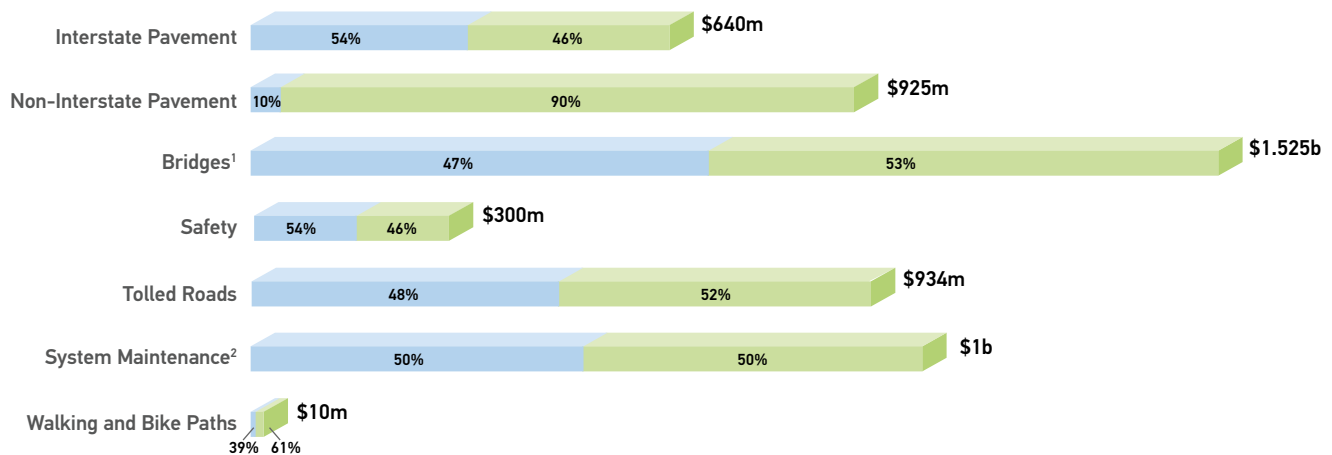
-  **Orange Line**  
120 cars built in 1979-1981 need to be replaced
-  **Red Line**  
74 cars built in 1969 need to be replaced
-  **Mattapan High Speed Line**  
New vehicles are needed to replace the cars built in the 1940s
-  **Commuter Rail**  
More than half of the MBTA's 82 commuter rail locomotives date to the 1970s and nearly all are at or past the manufacturer's recommended lifespan of 25 years

SOURCE: Boston MPO, Long Range Transportation Plan, Pathways to a Sustainable Future.

**FIGURE 6**

**MassDOT's Funded vs. Unfunded Needs**

Maintaining the transportation system requires money that is not available.



SOURCE: MassDOT, FY 2011 Capital Improvement Program

<sup>1</sup> This program does not include the Accelerated Bridge Program projects

<sup>2</sup> This is Non-Federal Aid System Maintenance

lects about \$500 million in Registry fees and more than \$660 million in gas taxes.<sup>20</sup> That money, plus roughly \$300 million in sales tax revenue appropriated by the Legislature, flows into the CTF. But while that money is intended to fund transportation, nearly three of every four dollars in that fund are going to repay debt for money already borrowed by the Commonwealth for transportation projects. Despite recent efforts to reissue some debt at lower interest rates, the debt service burden will continue to grow as long as Massachusetts keeps using borrowed money as its primary way to pay for transportation.

**FEDERAL BUDGET CUTS LOOM;  
STATE REVENUES FALL SHORT**

The Bay State's in-state revenue sources cannot come close to filling the current shortfall and certainly not the one due to looming federal cuts. The 21-cents-per-gallon state tax on gas has not been increased since 1991 and factoring for inflation, that 21 cents buys only as much as 13 cents would have in 1991.

On the transit side, revenues from the primary source of state funding, a penny of the sales tax, have fallen significantly short of projections. When forward funding was established in 2000, the MBTA assumed an average sales tax growth rate of 3 percent a year. Due to various factors, including the recession and

tax-free Internet sales, that assumption proved far too optimistic.<sup>21</sup> Though a 2009 sales tax increase did provide the MBTA with \$160 million in new revenue, the overall underperformance of the sales tax, which accounts for 57 percent of all MBTA revenues, has worsened the transit system's already bleak financial outlook.

Alarming, the MBTA's annual operating deficit is expected to *double* over the next four years as its state of good repair backlog continues to grow. While the MBTA's Capital Investment Program states that the agency must spend \$470 million a year simply to prevent further system deterioration, the actual number may be closer to \$750 million, according to the long-range transportation plan recently adopted by the Boston Metropolitan Planning Organization. Funding cuts to the transportation system are like dominoes. The first piece to fall is the direct impact on projects, whether maintenance or expansion. The lack of timely investment and aggressive preservation strategies then leads to higher costs to fix the same problems later. Inadequate funding has further consequences down the line. Because of tight budgets, for example, some day-to-day operations of transportation agencies are now being paid from capital budgets, taking away money that could otherwise be used for road or bridge repairs. Another domino that could fall: budget pressures could leave MassDOT

with an insufficient staff of adequately trained personnel to oversee and maintain road and bridge projects to keep quality up and costs down. Such a lack of careful supervision could translate into greater costs in the future.

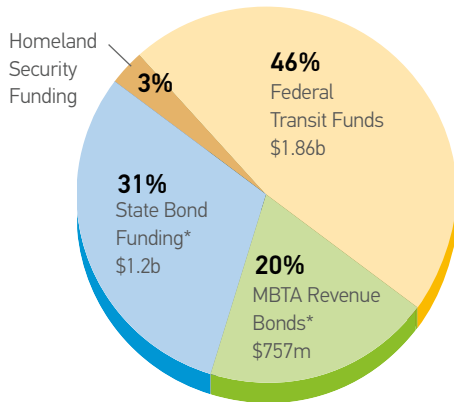
Another consequence of transportation's bleak balance sheet is that it undermines the possibility of future federal funding for transit. For a project such as the Green Line extension, for example, the state is required to demonstrate that the MBTA can pay

associated operating costs, as well as maintain both the existing system and any extension. Despite the state's high level of investment in transit, the MBTA's debt service load and its maintenance backlog make it increasingly difficult for Massachusetts to make that case.

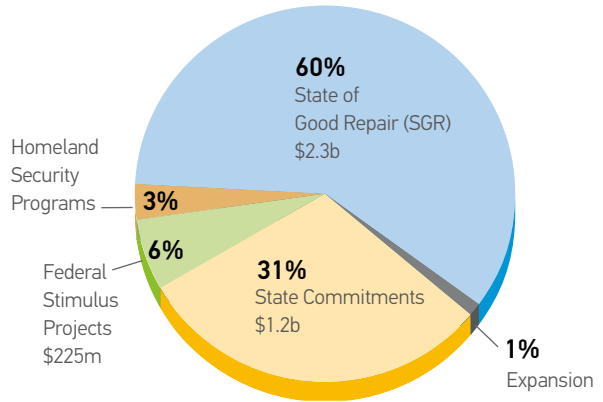
In short, a critical situation facing the Massachusetts transportation system is about to get even worse.

**FIGURE 7**  
**MBTA Capital Investment Program (Total: \$3.8 billion FY12 - FY16)**

*Source of Funds*



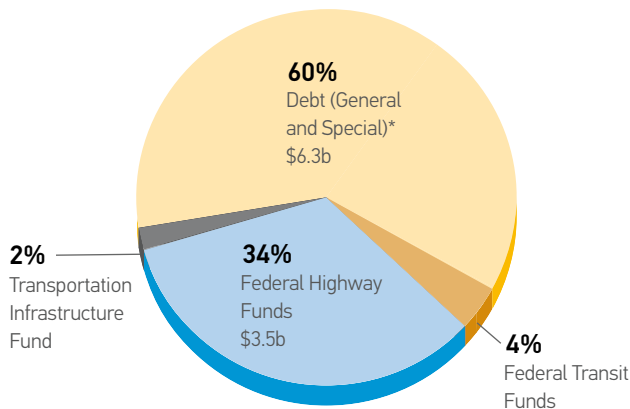
*Use of Funds*



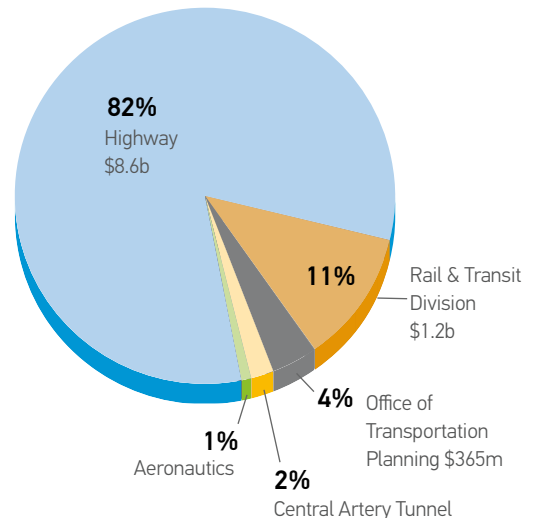
SOURCE: MBTA Presentation to the Board September 9, 2011  
 \* Borrowing is the source of funding.

**FIGURE 8**  
**MassDOT Capital Investment Program (Total: \$10.4 billion FY11 - FY15)**

*Source of Funds*



*Use of Funds*

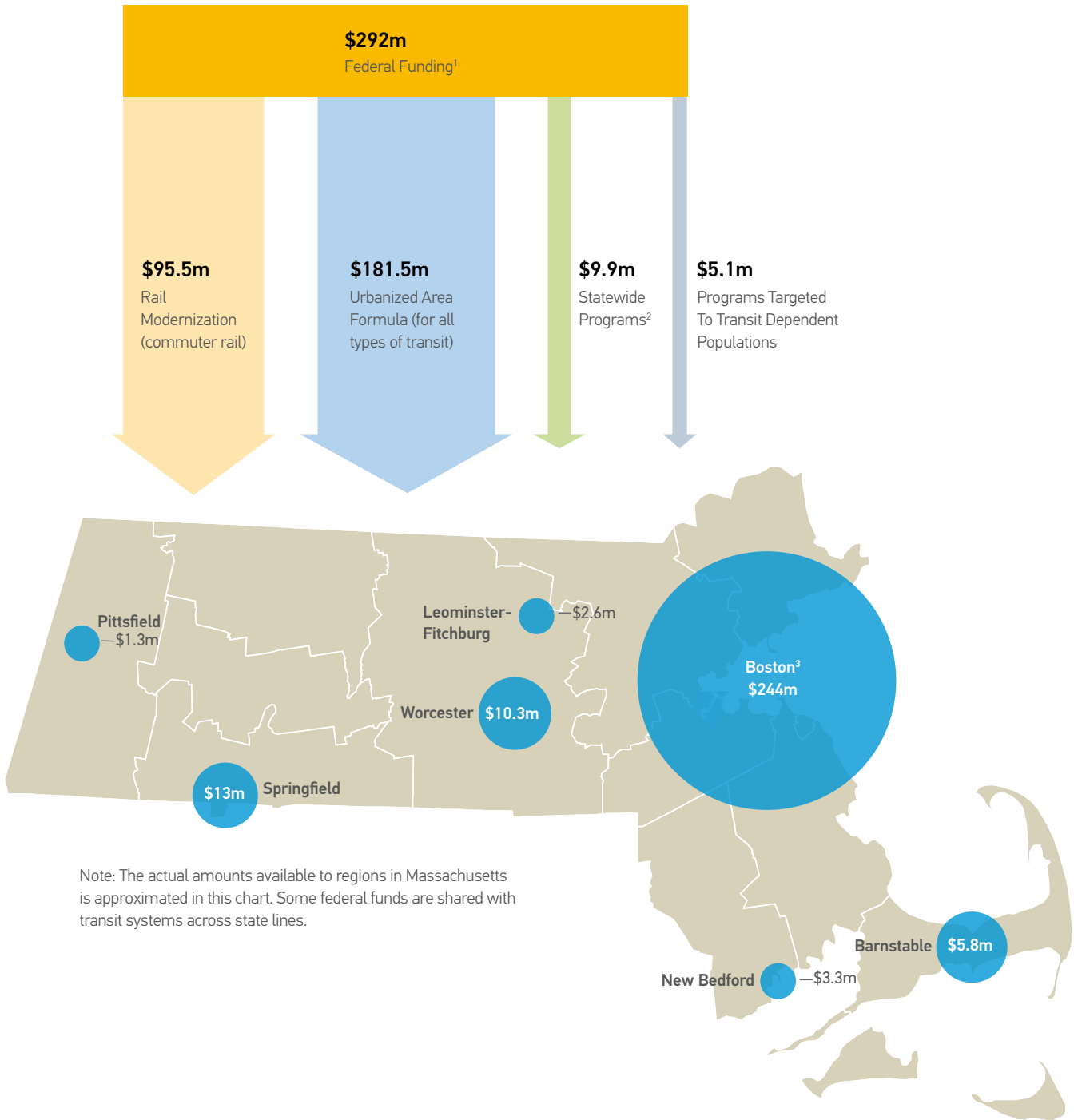


SOURCE: MassDOT Fiscal Year 2011 Transportation Budget in Plain English  
 \* Borrowing is the source of funding.

**FIGURE 9**

**Federal Funding for Massachusetts Transit**

\$292m in federal appropriations are currently dedicated to city-specific, statewide and interstate transportation programs. The MBTA receives most federal transit funds.



Note: The actual amounts available to regions in Massachusetts is approximated in this chart. Some federal funds are shared with transit systems across state lines.

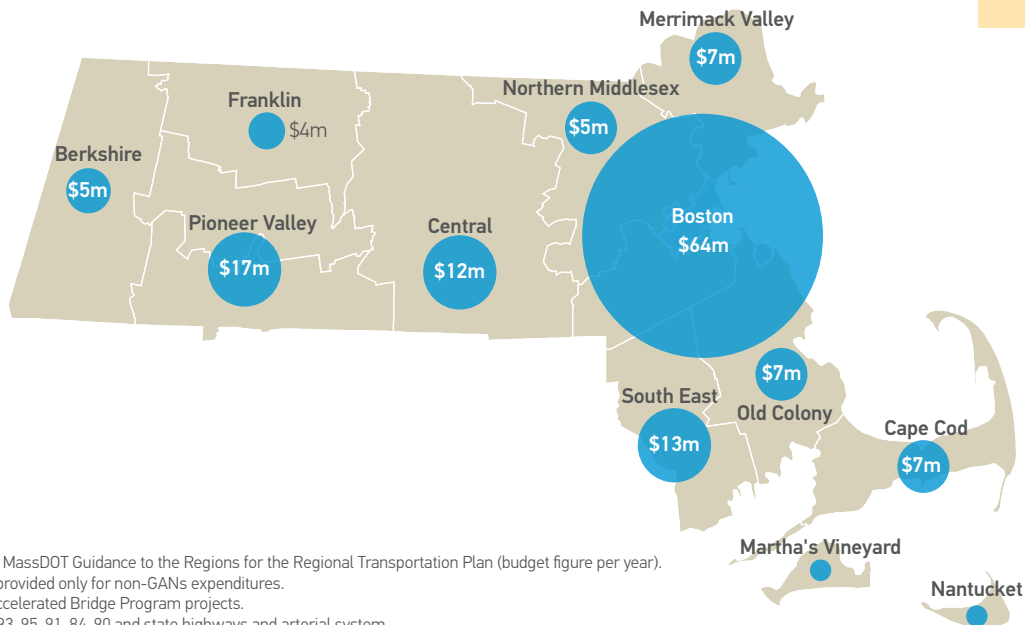
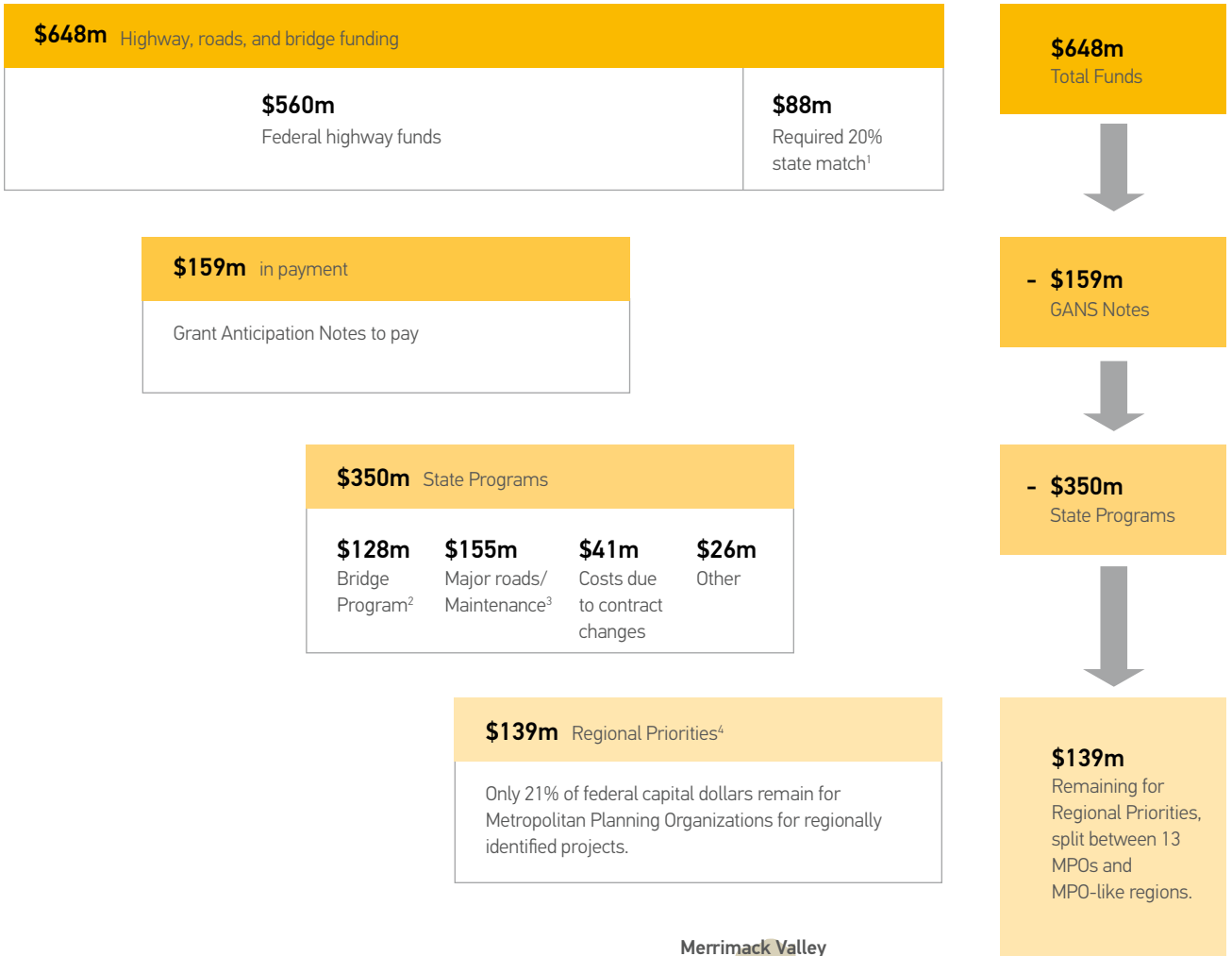
SOURCE: Federal Register, Vol. 76, No. 98.

1. These figures do not include the federal stimulus funds Massachusetts received.

2. Statewide programs include Rural, Elderly and Disabled, Metropolitan Transportation Planning, Statewide Transportation Planning and Rural Technical Assistance.

3. The MBTA receives all the Rail Modernization and most of the Urbanized Area Formula funds for the Boston metropolitan area. The MBTA and Regional Transit Authorities agree upon a split of these funds.

**FIGURE 10**  
**Federal Funding for MassDOT**



*SOURCE:* MassDOT Guidance to the Regions for the Regional Transportation Plan (budget figure per year).  
 1. Match provided only for non-GANS expenditures.  
 2. Non-Accelerated Bridge Program projects.  
 3. I-495, 93, 95, 91, 84, 90 and state highways and arterial system.  
 4. Some of this could be flexed for transit.

# Budget Basics

## OPERATING BUDGET

Like the Commonwealth and many businesses, MassDOT and the MBTA have separate operating and capital budgets. Each year's operating budget covers payroll, operations such as running buses and trains for the MBTA, snow and ice removal for MassDOT and, when resources allow, routine maintenance.

## CAPITAL BUDGETS

Capital budgets, by contrast, are designed to allow the agencies to plan and fund longer-term investments designed to preserve existing trains, roads and bridges, undertake more intensive maintenance and rehabilitation, and acquire or build new facilities. The sources that fund the operating and capital budgets overlap but the uses of those funds are very different, which is why such spending is tracked separately. Typically, funds must be borrowed to provide the state's share for MBTA and MassDOT programs.

## PAY AS YOU GO

Pay as you go means using today's dollars for today's expenses, either for capital programs or operations. Most of the time, the sources of revenue available for operations barely cover expenses and then, typically, funds must be borrowed to provide the non-federal share of both the MassDOT and MBTA capital programs.

## FUNDING

Revenue to fund the transportation capital budgets comes from federal agencies, such as the Federal Highway Administration and Federal Transit Administration, and from borrowing money. Both the MBTA and the Commonwealth (on behalf of MassDOT as well as other agencies) issue bonds to fund capital investments; the bonds raise a specific amount of money but in return the

bondholders must be repaid not only the principal but also interest over a period of twenty or more years. The money to repay the bonds as well as operate the system comes from fares, tolls, sales tax, gas tax, and registry fees.

## DEBT SERVICE

Like a household's mortgage, the real cost of borrowing the funds is not the amount borrowed but the total cost of the principal and interest over the life of the bond. And like a household, these obligations must be paid back in the form of debt service. In Massachusetts, this debt service is paid for from the same sources of money that would otherwise be available for operations and routine maintenance.

## CAPITAL INVESTMENT PROGRAMS

Both MassDOT and the MBTA have five-year rolling Capital Investment Programs (CIPs) which detail how much revenue is available and how it will be spent. The current capital plans for both agencies acknowledge that available resources are well below the amounts needed to properly maintain the systems. The MassDOT CIP for the highway division identifies \$6.17 billion in needed investment over the next five years but is able to allocate only \$2.5 billion. The MBTA plan notes that "without a discrete source of pay-as-you-go capital funds, the MBTA will likely be unable to invest the required amounts included in the CIP resulting in an increased backlog of state of good repair needs and unacceptable deterioration of the infrastructure critical to providing reliable service."



## How We Got Here

Rather than using dedicated state revenues to pay-as-you-go for at least some transportation projects, debt has become the state's primary way to finance transportation. The tab for ever-growing debt service is coming due at an especially bad time.

This and other reports have documented the financial stranglehold on transit and other transportation systems in Massachusetts. But *how* it happened—how debt has sharply reduced transportation options—is much less understood. Because the story behind how the system got maxed out is complex, even people who care about transportation are drawn to relatively simple explanations. Some reflexively blame overspending and mismanagement by transportation agencies. Others cite Central Artery/Tunnel Project costs and problems, equating that project with overspending and mismanagement. While some management decisions and the Big Dig certainly contributed to the current problem, the more accurate and complete explanation of how Massachusetts transportation has gotten so maxed out lies in how the state has funded transportation in recent decades—and, perhaps more importantly, how it has not.

It may seem counterintuitive, but Massachusetts transportation is maxed out today not because the state has spent *too much* on transportation, but because it has spent *too little*.

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### Leveraging Federal Dollars

In some ways, Massachusetts has been a victim of its own success. Instead of using and, where necessary, raising its own revenues to maintain or expand systems, Massachusetts has taken advantage of federal funds to finance transportation. That approach made sense in some key ways. The federal government requires a state match of just 20 percent of transportation capital dollars, meaning that as long as Massachusetts could show an ability to pay \$1 towards a project's costs, it could secure

an additional \$4 in federal funds, even if that \$1 was itself produced by borrowing.

For state officials, leveraging federal dollars was much easier (politically, at least) than relying on annual appropriations or seeking increases in user fees such as tolls or gas taxes. Other states, of course, also utilize federal funds to finance projects, but unlike Massachusetts, many of those states pay their 20 percent share out of actual state revenues, in essence using their own cash for a down payment. Massachusetts, by contrast, often bor-



rows money to meet that federal match requirement. It is also worth noting that Massachusetts, unlike states such as New York and Pennsylvania, does not require voter approval for the state to borrow money. This means that the public generally does not recognize that the rails and roads upon which they depend are financed in large part with borrowed money, not just with taxes or other revenues. If the state is to change how it funds transportation, the public must understand the system's true costs and the need to find a better way than debt to pay for them.

## Grant Anticipation Notes— The State's Credit Card

The current system, by which Massachusetts issues debt and promises to use future revenues to pay it off, is somewhat akin to using a credit card: the state gets what it wants now (in this case, money to fix roads or bridges) and pays the bill off over time and with interest. A financing tool known as Grant Anticipation Notes (GANs) has become a very significant part of the state's highway funding since the state used them to pay Big Dig construction bills before federal funds became available. GANs are essentially a pledge of future revenues. But does the resulting debt burden mean that decision-makers acted in poor faith or without proper due diligence? It can be argued that they actually had little alternative but to pursue federal dollars for the basic reason that a lack of sufficient state resources tied their fiscal hands. Despite the warnings of the Transportation Finance Commission and others, debt remains an important and necessary tool for financing transportation. But the struggle to keep up with payments on its debt leaves Massachusetts with even fewer funds for maintenance or expansion, even as those needs increase.

## Transportation Reform and MBTA Forward Funding: Important but Inadequate

For years, some people calling for changes in how Massachusetts funds and operates its transportation systems called for reform before revenue. And reform came, most notably through forward funding for the MBTA in 2000 and transportation reform in 2009. Though both initiatives have led to financial savings and improved organizational accountability, these and other reforms have been only partially successful.

### FORWARD FUNDING

For years, the MBTA's budgeting practice was to spend money and then send the state an annual bill after the fact. Forward funding in 2000 abolished that system and, as noted before, pro-

vided the MBTA with a fixed revenue stream, most of it from a dedicated penny of the sales tax.

As a result of forward funding, the MBTA develops an annual balanced budget based on its projected revenues, including fares, local assessments, and sales tax revenue. Because of this new revenue system, the MBTA has been able to save money by restructuring some its debt. However, as noted by the MBTA itself, "Much of the current debt has been refinanced at a lower cost over the past ten years, but those savings opportunities no longer exist."<sup>22</sup> Despite refinancing and other strategies, the MBTA continues to struggle to find the money it needs each year just to keep the system's condition from further deterioration. Forward funding was, in short, a positive but insufficient reform.

### TRANSPORTATION REFORM

If forward funding restructured MBTA funding, transportation reform in 2009 restructured the way Massachusetts funds and operates all of its transportation system. Following transportation reform, MassDOT's Commonwealth Transportation Fund allows for revenues to be used across different transportation modes. This positive development sets the stage for a progressive, multimodal approach to future transportation investment decision-making.

With funds sparse, another important aspect of transportation reform was that it helped create a system to better prioritize projects according to condition and degree of use. Such asset management systems can lead to more coordinated and cost-effective investments by moving money to where it is most needed within transportation's different modes.

Transportation reform also sought to address another of the transportation system's major cost drivers: labor costs, including expenses from health care and other employee benefits, especially at the MBTA. Despite some results, such as moving MBTA workers into the insurance plan covering state employees, wages and benefits remain the transit system's biggest cost. However, collective bargaining rules and a process by which arbitration often reverses MBTA efforts to reduce costs limit the agency's ability to further control health care and pension costs.

The cost savings promised by reform will come over a 20-year period. But the system is starved for funds now. Reform before revenue made sense as a first step, but reform is not a substitute for revenue.





## Case Study: Accelerated Bridge Program

A program recently in the news illustrates the upside and downside of borrowing money to pay for transportation projects. With a bridge collapse in Minnesota driving home the danger of structurally deficient bridges, Massachusetts sought a way to repair bridges on an expedited basis. By this summer, the Accelerated Bridge Program (ABP) had reduced the number of structurally deficient state highway bridges from 543 (as counted in 2008) to 423. More importantly, the number of such bridges is no longer escalating as it would have without the program, saving the state more expensive repairs in the future. But how did debt-ridden MassDOT find the money to do this project? Massachusetts turned to a familiar friend: Grant Anticipation Notes.

While GANs enable necessary projects to get done now before they cost more later, it is at the cost of future revenues. Indeed, in FY 2011, more federal money was set aside to pay off GANs than went to the state's Metropolitan Planning Organizations for regional priorities. (See Figure 10.) Over the next three years, about \$785 million in federal funds (including the state match) will be committed to statewide road and bridge needs and another \$397 million will be dedicated to regional priorities. But \$527 million in federal funds will be held aside to pay off GANs. In other words, nearly 30 percent of all expected federal funds will go to pay off old commitments rather toward new needs.

Even with such borrowing against the future, ABP is not enough to keep the state's bridges in a state of good repair. MassDOT estimates an annual gap of \$161 million between identified needs for other bridge repairs and available funds for completing those repairs.<sup>23</sup> The inability to fix those structures now will cost Massachusetts more in terms of both public safety and dollars.

## Transportation Under The State Bond Cap

Since 1991, Massachusetts agencies, including transportation, have operated under an annual cap to limit their borrowing to levels closer to what the state can afford to support. But unlike other parts of state government, such as housing agencies or the courts, transportation agencies are expected to cover the principal and interest on bonds issued under the cap. "Transportation has historically represented the largest share of the Commonwealth's capital spending, accounting for between one-half and two-thirds of the total capital budget over the last five years," according to MassDOT.<sup>24</sup>

But do the MBTA, MassDOT, and other transportation agencies really have a more viable alternative to the debt tool today than in the past? Borrowing money remains the Bay State way of doing transportation business. That's in large part because a revenue stream that would enable a pay-as-you-go approach continues to lag far behind identified needs. The last gas tax increase was

more than two decades ago; a 2009 attempt to raise it by 19 cents, of which 6 cents would go to public transit, was abandoned in the face of strong opposition. The MBTA fare increases that may soon be proposed would be the first since January 1, 2007. Most of the new revenue to the system has been from a non-user source, the statewide sales tax. But rather than going to transportation system maintenance and capital improvements, much of that revenue is being used to pay for basic operating expenses and the interest on debt.

This perpetuates a Catch-22. Necessary maintenance of capital facilities is deferred or outright ignored, which kicks the cost can down the road into the future, further widening the growing gap between needed improvements and available funds. Meanwhile,

the combination of heavy debt service and a tangle of federal and state restrictions on the allowable use of revenues leaves little or no unrestricted funding available to plan and build other local, regional, and state transportation projects that serve important economic and environmental goals.

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*Reform before revenue made sense as a first step, but reform is not a substitute for revenue.*

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Delayed transportation projects end up being more expensive. And the risks to public safety, the environment, and the Massachusetts economy increase.



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## **IV.** Spending Smarter

### Transportation in Massachusetts needs more revenue and better planning.

Changes in how Massachusetts finances and operates its transportation systems, especially forward funding and transportation reform, have created greater transparency about the system's needs compared to its funding capacity. Greater transparency means that policy makers and others have the information they need to respond.

That response must be comprehensive. It must consider not only the pressing need for revenue, but how to best use that revenue. With dollars increasingly tight, further changes may be needed to make the Commonwealth smarter in deciding how it invests in transportation. Despite federal requirements to coordinate transportation with other planning processes, transportation planning in Massachusetts, as in many states, remains compartmentalized, with transportation decisions not fully integrated with land-use planning, other infrastructure needs, and environmental considerations.

#### How Decisions Are Currently Made

Though driven by federal requirements, transportation planning is implemented through state and regional choices. Investments intended to meet statewide needs are basically decided by MassDOT, while local and regional transportation spending choices are generally selected by 13 Metropolitan Planning Organizations (MPOs) scattered across the state. Under federal law, MPOs are charged with planning and programming federal highway and transit funds. Typically, MPOs employ regional planning staff.

Various factors shape their decisions, but MPOs are bound by certain limits, such as the state bond cap or changes in federal funding, as they make long-term plans and pursue short-term programs. While these constraints are intended to force transportation planners to prioritize and identify a fundable universe of projects, they limit the number of projects that can be advanced at any one time. The pipeline of transportation projects is long. Even routine projects can take several years and a major project can require a decade from concept to completion.

In Massachusetts, MPOs tend to have more involvement in how federal highway funds are spent than in how the MBTA and regional transit authorities use federal transit funds. MPOs tend to accept the transit agency's allocations and incorporate them into regional plans with few changes. While priorities may shift from year to year, those plans often consist of maintaining the existing systems rather than enhancing or expanding them. For example, of the \$3.8 billion in capital projects included in the MBTA's Capital Investment Program for the five years beginning in FY 2012, more than 90 percent goes to existing projects and system maintenance and less than 10 percent to enhancements and expansion projects.<sup>25</sup>

The decision-making process for highway spending is more complicated. While MassDOT usually takes the lead role in determining how federal funds will be applied to statewide highway needs, MPOs program federal highway funds to regional priorities. MassDOT determines maintenance priorities for the state system, while other MPO members, especially municipalities and regional planning agencies, generally take the lead in selecting regional priorities.

#### Problems With The Process

As a result of financial and other constraints, MPOs have tended to give priority and commit funds to projects that are under way or at least well into design and preliminary engineering. This limits opportunities to advance new projects that could serve important environmental, economic, or other goals, or improve local or regional mobility choices, such as better sidewalks and bike paths, expanded transit service, or local shuttles to jobs and downtown areas.

The current planning process also creates a constant battle to find the right balance between spending to maintain a state of good repair in both transit and highways and investing in broader programs. On the one hand, maintenance is critical and early spending can avoid more expensive fixes later. On the other, funds used to get the current system into good condition cannot be used to

create a transportation system that will meet both current and future demands.

A more outcome-focused and data-based process would help MassDOT and the MPOs develop and advance projects that better meet the needs of the people of Massachusetts and are better aligned with state policy goals, including efforts to reduce greenhouse gases, allow seniors to remain in their communities, enhance social equity, offer workers an affordable way to commute in off hours, and give Massachusetts communities more efficient connections to the global market. Integrating more diverse perspectives into the evaluation process could also result in tapping into a broader range of funding sources to deliver the projects.

Some projects—including some long promised and planned—might have to be reassessed or re-shaped as their relative benefits are compared to their likely costs. Such right-sizing of the project pipeline will not be easy, but communities may prefer

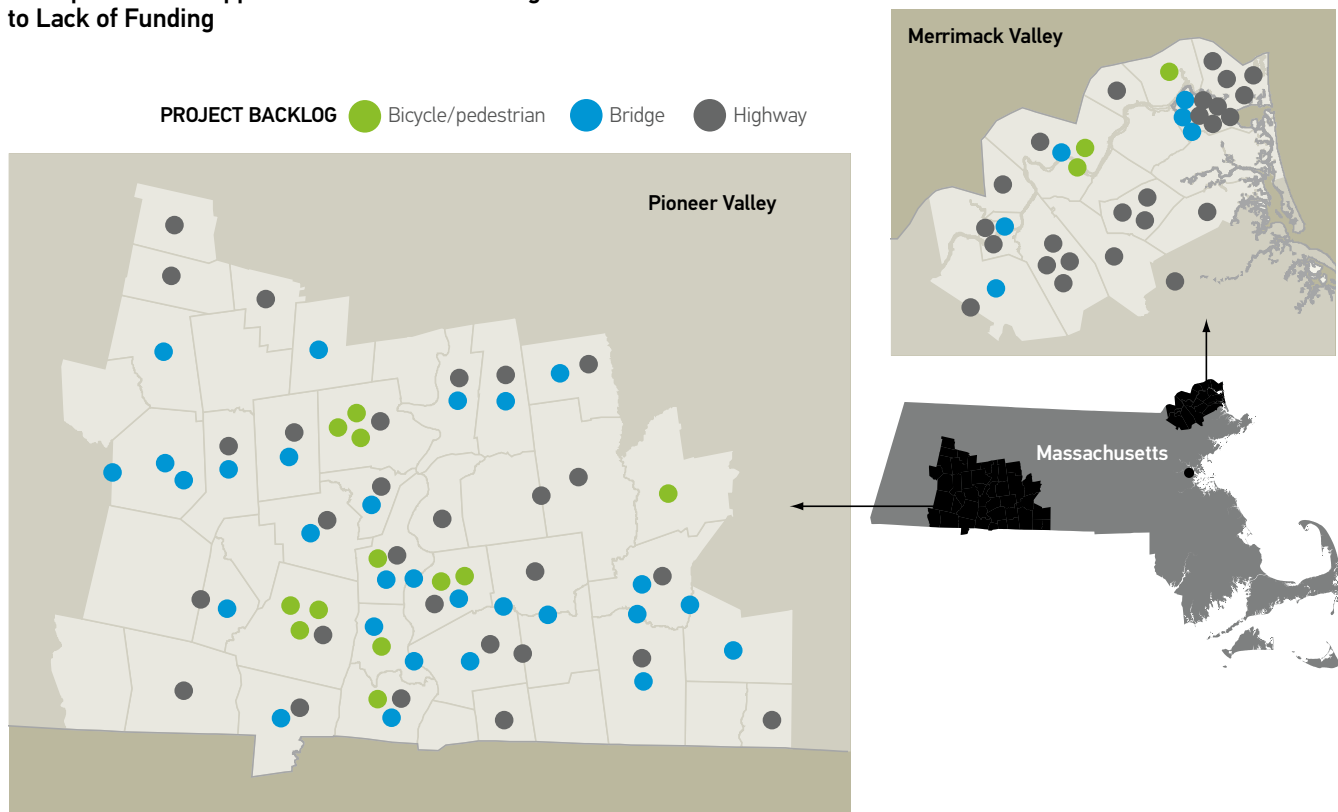
it to waiting for projects that will never come or that will be so expensive when they are finally programmed that they displace all other needs.

## The Route Ahead

This paper seeks to help the public understand how the Massachusetts transportation system got so maxed out. Such understanding is a prerequisite if the public is to be willing to support programs and policies, some of them costly and contentious, involving both revenues and the decision-making process for transportation.

To their credit, state transportation agencies have been trying to make their fiscal situations more transparent and comprehensible. More detailed information about the depths and roots of financing and other issues affecting transportation, including possible revenue and other solutions, is also available from a number of non-government sources. A year ago, for example,

**FIGURE 11**  
**Examples of Lost Opportunities In Just Two Regions Due to Lack of Funding**



SOURCE: Merrimack Valley MPO 2011 Regional Transportation Plan Roadway and Bridge Projects as of 5-17-2011 and Pioneer Valley Infrastructure Improvement Project Report 2010

Northeastern University's Dukakis Center for Urban and Regional Policy in collaboration with Conservation Law Foundation, held a Blue Ribbon Summit on Financing the Massachusetts Bay Transportation Authority and Regional Transit Authorities.

Organizations and events aren't the only prompts for consideration of transportation problems and solutions. Legislative proposals, such as the Transportation Economic Development and Ridership Act (TEDRA) now before the Legislature, also offer opportunities for important analysis and discussion of multiple financing strategies for transportation.

As MassDOT itself has recognized publicly over the past few months, the time for a serious discussion of new revenue has come. The following foundational criteria can help guide the important public conversation that will hopefully now proceed:

- 1. The transportation system must be funded with resources sufficient to enable it to function effectively and safely today while increasing transportation choices for the future**
- 2. To succeed in generating necessary public support, transportation leaders must develop customer-based performance metrics that make clear the links between transportation investments and real outcomes, such as reductions in greenhouse gas and other pollution, affordable access to jobs, less time stuck in traffic, and greater mobility options.**
- 3. Future efforts must build on the accomplishments of forward funding and transportation reform to further improve how transportation in Massachusetts is managed and financed**
- 4. To ensure broad-based support, leaders should conduct an open public discussion about transportation needs and options for achieving them.**

That last point is especially critical. Without public understanding and support, policies to fix the system's fiscal and other problems will simply not succeed. The stakes involve the future of transportation in Massachusetts. And that involves the future of the Commonwealth itself.

## GLOSSARY OF TERMS

**A&F (Executive Office of Administration and Finance)** Executive department in the Administration responsible for developing the Governor's budget and overseeing other financial responsibilities for the Commonwealth.

**ABP (Accelerated Bridge Program)** \$3 billion dollar investment over 8 years by the Administration to repair Massachusetts's bridges using a combination of federal highway and state funds.

**AC (Advance Construction)** Allows states to begin a project even in the absence of sufficient federal-aid obligation authority to cover the federal share of project costs. Advance construction eliminates the need to set aside full obligational authority before starting projects. As a result, a state can undertake a greater number of concurrent projects than would otherwise be possible.<sup>26</sup>

**Capital Funds** Funding dedicated to new projects or projects to expand the capacity of the transportation system, including freeway widenings, rail extensions, transit station improvements, new bicycle and pedestrian lanes, and so forth. (Also see "operating funds".)<sup>27</sup>

**CIP (Capital Investment Program)** The MBTA's or MassDOT's five-year capital expenditures plan.

**CTF (Commonwealth Transportation Fund)** CTF is the successor to the state's Highway Fund. It receives \$1.466b annually from state sources—registry charges, fuel taxes, and sales taxes (excluding the dedicated one cent that goes directly to the MBTA). This fund is subject to appropriation by the legislature and the amount of debt service attributable to the fund is a function of past and current year spending.

**Debt Service** The amount of money owed as a result of past borrowing.

**Farebox** The revenues collected by transit operators from passenger fares.<sup>29</sup>

**FHWA (Federal Highway Administration)** See U.S. DOT.<sup>27</sup>

**Forward Funding** MBTA funding reform instituted in 2000 that abolished funding in arrears and provided MBTA with a fixed revenue stream.

**FTA (Federal Transit Administration)** See U.S. DOT.<sup>27</sup>

**FY (Fiscal Year)** Annual schedule for keeping financial records and for budgeting transportation funds. Massachusetts's fiscal year runs from July 1 through June 30, while the federal fiscal year runs from Oct. 1 through Sept. 30.<sup>27</sup>

**GANS (Grant Anticipation Notes)** Used to borrow against future federal-aid funds (Federal Transit Administration Title 49 grants) that are allocated by formula (Section 5307) or by project (Section 5309).<sup>27</sup>

**MassDOT (Massachusetts Department of Transportation)** Created in 2009 by Transportation Reform to oversee an integrated department that includes four divisions Highway, Mass Transit, Aeronautics and the Registry of Motor Vehicles (RMV), and an Office of Planning and Programming.

**MBTA (Massachusetts Bay Transportation Authority)** The agency that provides public-transportation service in eastern Massachusetts.<sup>28</sup>

**MHS (Metropolitan Highway System)** The portion of the Turnpike that includes the 12 mile Boston Extension along with the Sumner-Callahan and Ted Williams Tunnels which connect to Logan Airport.

**MPO (Metropolitan Planning Organization)** A federally required planning body responsible for the transportation planning and project selection in its region; the governor designates an MPO in every urbanized area with a population of over 50,000 people. MPOs produce three federally mandated documents: the Transportation Plan, Transportation Improvement Program, and Unified Planning Work Program.<sup>27</sup>

**MTTF (Massachusetts Transportation Trust Fund)** Created by Transportation Reform it is one of the two structures through which state funds are funneled (the other is the CTF). The MTTF is the primary fund for MassDOT. Revenue collected in the MTTF includes Toll Revenue, non Toll Revenue, Departmental Revenue, Operating Transfer of funds from the CTF, and Contract Assistance dedicated to debt service. The MTTF funds the operating costs of the four divisions of MassDOT as well as the Office of Transportation Planning. All revenue except departmental revenue and the operating transfer from the CTF is restricted for Turnpike purposes.<sup>29</sup>

**RTA (Regional Transit Authority)** The entity responsible for providing public transportation in a region; there are 15 RTAs in Massachusetts.

**SD (Structurally Deficient Bridges)** A bridge is structurally deficient when the deck (driving surface), the superstructure (supports immediately beneath the driving surface), or the substructure (foundation and supporting posts and piers) are rated in condition 4 or less on a scale of 1-10.

**SGR (State of Good Repair)** The MBTA defines SGR as the "condition where all assets perform their assigned functions without limitation".

**Transportation Reform 2009** Transportation Reform legislation restructured the way Massachusetts funds the highway system by turning the Executive Office of Transportation and several other existing transportation agencies into a multimodal department of transportation, MassDOT. The Massachusetts Turnpike Authority (Turnpike) was incorporated into the new MassDOT Highway Division, although the reorganization did not eliminate the bond covenants or change the law that isolates Turnpike revenues for Turnpike needs.

**Turnpike (Massachusetts Turnpike Authority)** Sometimes called MassPike, this agency is responsible for the operation of the Massachusetts Turnpike and the three harbor tunnels (Sumner, Callahan, and Ted Williams).

**U.S. DOT (United States Department of Transportation)** The federal agency responsible for highways, mass transit, aviation and ports and headed by the secretary of transportation. USDOT includes the FHWA and the FTA, among others.<sup>27</sup>

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