

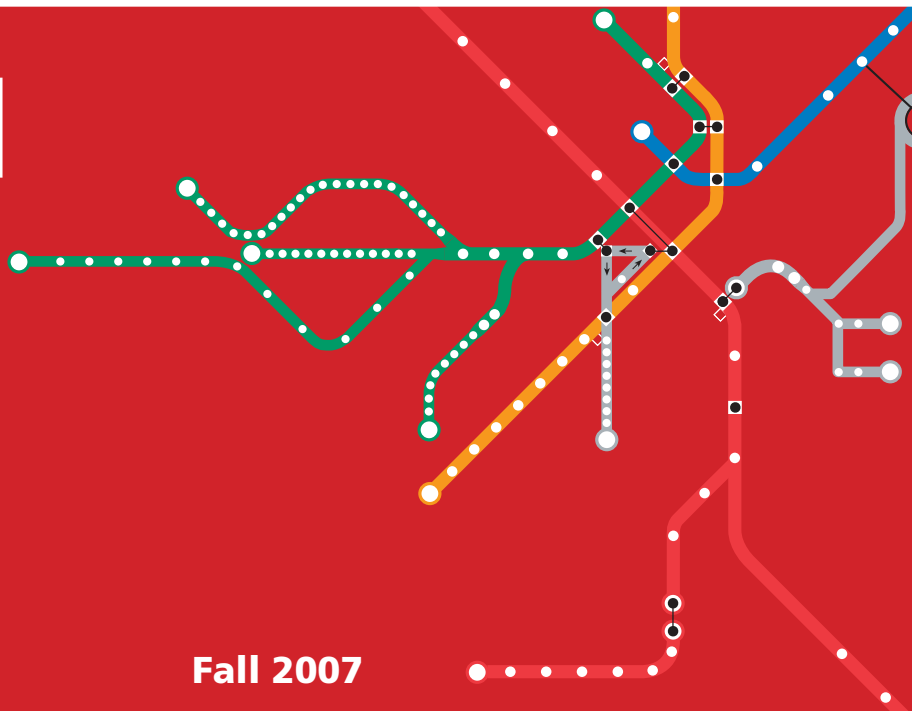


Derailed By Debt

**Unhealthy Choices
The MBTA Will Be
Forced To Make In
FY2009 - FY2013**

MASSPIRG Education Fund

Fall 2007



Derailed By Debt: Unhealthy Choices The MBTA Will Be Forced To Make In FY2009 - FY2013



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Executive Summary

The Massachusetts Bay Transportation Authority (MBTA) faces an uncertain financial future over the next five years. With debt service payments increasing, along with other costs, the MBTA will face sizeable budget gaps forcing the Authority to choose among unhealthy options to close these structural deficits. These options primarily include: further dramatic fare increases, service reductions, or more borrowing.

Unfortunately, all of these options would negatively impact the MBTA and its riders by making the system less affordable, less available, less frequent, or more indebted in the long run. The result will be a decrease in ridership.

Decreasing transit ridership will adversely impact the Greater Boston region as a whole. Instead of using transit, many commuters will drive automobiles. The result will be worse traffic congestion and air pollution, greater stress on road and bridge infrastructure, as well as greater oil dependence.

The primary cause of the MBTA's financial crisis is a huge debt that grows each year of this projection, combined with slow growth in the state's sales tax, which a portion of funds the MBTA.

Our analysis, confirmed by the MBTA Advisory Board, shows that:

MBTA faces multi-million dollar budget gaps from FY2009 – FY2013 caused by huge debt .

- Operating deficit of \$67 million to \$69 million in FY2009.
- Five year funding gap between \$357 million on the low end and \$438 million on the high end.
- A growing debt time bomb with annual debt service payments that will reach over half a billion dollars in FY2013, threatening the MBTA's long-term financial stability.

MBTA will be forced to choose among several “unhealthy” options to close budget gaps.

- An across-the-board fare increase of approximately 38 percent over the five year projection, which is more than double the rate of inflation (see Appendix B for fare increase dollar amounts).
- Significant service decreases, including a reduction in service on evenings and weekends and the elimination of some bus routes.
- Debt deferment into the future, thus extending the MBTA's unsustainable debt obligations and making them greater over time.

Available options have negative impact on MBTA ridership and finances.

- Fare increases at this time would likely result in ridership decline.
- Service reduction would also result in ridership decline.
- Debt deferment could add to the MBTA's \$8.1 billion debt with interest, making the Authority less able to fund its operations, attract or retain riders, and burden future transit riders and tax payers.
- None of these options raise enough revenue or achieve savings to adequately address MBTA maintenance backlog

Debt relief needed to improve MBTA.

These projections show a growing financial gap that will threaten the Commonwealth's largest transit system and impair its ability to increase ridership, provide quality and affordable service to commuters, foster economic growth, and ease the region's traffic and air pollution problems.

To seriously address the MBTA's financial instability, Massachusetts policy makers must provide either partial debt relief for the MBTA or new revenue sources to help pay down the agency's annual debt costs. Not taking these actions will consign the MBTA to a predictable fiscal train wreck.

MASSPIRG supports the September 2007 recommendation of the Transportation Finance Commission to relieve the MBTA of \$1.8 billion of debt associated with Central Artery/Tunnel commitments.

Introduction

Public transportation provides numerous benefits, including an affordable option for getting around, economic development, easing traffic congestion, helping to clean our air, saving millions of gallons of oil and global warming emissions every year, reducing sprawl, and decreasing auto accidents, to name a few. In order to maintain and improve the quality of life in Massachusetts, address critical problems like pollution and traffic congestion, and remain competitive in encouraging employers and workers to live in the Commonwealth, we need a thriving public transit system.

Unfortunately, our state's largest transit authority, the MBTA, has severe financial problems that prevent it from adequately serving the region. Instead of a thriving transit system that grows with our state's needs, increases ridership, and is able to maintain its exist-

ing infrastructure, we have a deteriorating system with stagnating ridership.

On March 28, 2007, the Transportation Finance Commission (TFC), established by law to “develop a comprehensive . . . transportation finance plan for the Commonwealth of Massachusetts,” released its findings on the state of the Commonwealth's overall transportation system.¹ The TFC projections foresaw a \$4 to \$8 billion funding gap for the MBTA over the next 20 years. Using TFC data and the most updated MBTA approved budget, MASSPIRG Education Fund has analyzed the funding gap projection for the next five fiscal years (Fiscal Year 2009 to Fiscal Year 2013) and the realistic options available to the MBTA to close these deficits. This analysis also looks broadly at the immediate ramifications closing this gap will have on the MBTA, its riders, and the region as a whole.



MBTA Budget Gap Findings

Deficit Projections

The fiscal 2008 budget approved by the MBTA Advisory Board on May 24, 2007 projects a slight operating surplus of \$736,130 on a \$1.4 billion budget. This small cushion will provide very little breathing room for the coming fiscal year, FY2009, which has a projected deficit of \$67–69 million. Over the next five years, projected operating deficits will continue to mount, with the single year shortfall in 2013 possibly exceeding \$100 million, and the five year funding gap totaling between \$357 million and \$438 million. The MBTA's reserve accounts do not hold enough money to close the gap for any one of the coming years.

Annual Operating Deficit (millions of dollars)			
	FY2009	FY2010*	FY2011
Best Revenue/Worst Cost	\$68.7	\$44.7	\$73.3
Worst Revenue/Best Cost	\$67.0	\$62.8	\$89.1
	FY2012	FY2013*	TOTAL
Best Revenue/Worst Cost	\$86.1	\$84.6	\$357
Worst Revenue/Best Cost	\$99.2	\$120.3	\$438

* Projections for Fiscal Years 2010 and 2013 include fare increases designed to adjust fares to inflation

Included in these gap projections are regularly scheduled rate-of-inflation fare increases that the TFC projections added to maintain the “buying power” of fares every three years. However, these fare increases will not come close to closing the projected budget gaps. In FY2010 and FY2013, where the TFC anticipates a fare increase to keep up with inflation, the MBTA would still operate at a considerable deficit. The MBTA's substantial debt load of \$8.1 billion, and the large percentage of the operating budget dedicated to servicing this debt load, is the primary reason for the deficit.

Debt History

As the TFC report uncovered, much of the MBTA's financial problems are outside the Authority's control, such as rising debt service payments, increased energy costs, and slow sales tax growth. The TFC also highlights MBTA healthcare and labor costs as places to achieve savings. But among these problems, MBTA

debt and the lack of state sales tax revenue stand out as most damaging for the Authority.

From the establishment of the MBTA in 1964 up to Forward Funding legislation that went into effect on July 1, 2000, the Commonwealth of Massachusetts offset the MBTA's operating deficit after each fiscal year. To fund its capital program, the MBTA issued bonds backed by the Commonwealth's full faith and credit, with the Commonwealth shouldering a contractual obligation to pay a portion of the debt service. When Forward Funding was established, the MBTA was given its own funding stream (20 percent of the state sales tax revenue and an assessment on the cities and towns in the MBTA district). The Authority also inherited and was given full responsibility for the amount of debt that had accumulated at that point. This debt is now referred to as “Prior Obligations” or “Legacy Debt” and makes up a significant portion of the MBTA's tremendous debt load. Due to smaller than anticipated revenue growth and a larger increase in operating expenses, both mostly due to market conditions outside of the MBTA's control, the Authority has been unable to reduce this debt load since 2001. On the contrary, it had to issue additional debt to fund its capital program, which turned it into the transit authority with the highest debt service expenses as a percentage of its operating budget in the nation.

Of the total \$8.1 billion the MBTA carries in debt, more than \$4.7 billion is prior obligation debt, which translates into annual debt service payments of \$274 million for the next 10 fiscal years and an average annual payment of \$136 million from FY 2017 to FY 2030.

Central Artery/Tunnel Related Debt

Adding to MBTA costs over the past decade are projects the Authority was required to take on as a result of the state's Big Dig air pollution mitigation settlement. In order for the state to comply with federal air pollution standards resulting from increased traffic created by the enhanced Central Artery, the Commonwealth moved forward on several projects aimed at increasing and improving public transit. These projects include the new Silver Line, Green Bush commuter rail, improvements to the Orange and Blue Lines, and many others. These projects total \$1.8 billion that the

MBTA has bonded for. Many “commitments” are still outstanding, however the state, and not the MBTA, has taken responsibility for completing these future mitigation commitments. While these transit projects will greatly benefit the Commonwealth, the cost should have been part of the Big Dig’s overall budget, and not paid for by the MBTA. The environmental and public health impacts of the Big Dig should have been factored in and budgeted for. Relieving the MBTA of its \$1.8 billion debt associated with Central Artery/Tunnel commitments are included in the September 17, 2007 Transportation Finance Commission’s recommendations.²

Sales Tax Growth

The MBTA’s financial problems have also been exacerbated by slow growth of the state’s sales tax. The MBTA receives about 20 percent of the state’s 5 percent sale tax, which is approximately 55 percent of the MBTA’s revenue base. In 2000, when this funding structure was created, analysts projected that the sales tax would grow by 5 percent each year or more as it had during the 1990s. But these projections did not pan out as expected. For example, in 2002 alone sales tax declined by 1.6 percent. As a result, the T has been left approximately \$150 million short of projections since 2004.

According to the TFC report, the MBTA is “in a downward spiral in which it cannot generate the revenue necessary to achieve a state of good repair, meaning that the MBTA cannot improve service quality, retain and attract riders, and increase revenue over time.”

Five Year Debt Analysis

In fiscal year 2008, debt service payments will amount to \$374 million and are expected to rise to over half a billion dollars in FY2013. Debt payments for the MBTA will range between 27 percent and 29 percent of its entire budget over the next five years. This debt amount is about twice the amount of debt accrued other similarly sized transit agencies across the nation, which average between 10 percent and 15 percent.³ Debt service is the MBTA’s largest single expense and, at the current rate of increase, will become greater than the amount the MBTA receives in fares.

Debt Impact on Operations and Maintenance

Dedicating such a high percentage of its operating budget to servicing debt has left the MBTA struggling to pay for operations, and forced the Authority to defer much needed maintenance. Ironically, the Authority now can barely afford to operate, let alone maintain, the expansion projects it built in recent years.

In FY 2006, the MBTA’s State of Good Repair backlog amounted to \$2.7 billion. In order to maintain the current (unsatisfactory) state of its infrastructure, the Authority plans to spend \$470 million a year on capital maintenance projects. Any improvements and a gradual reduction in backlog over the next 20 years would require spending of approximately \$570 million a year. Given the MBTA’s current funding options, this would likely require issuing additional bonds, which in turn would increase the annual debt service; placing the MBTA in the difficult position to choose between inadequate spending in its operating budget or inadequate spending in its capital budget.

Projected Debt Service Expenses (millions) and Percentage of Total Expenses					
	FY2009	FY2010	FY2011	FY2012	FY2013
	\$436	\$447	\$466	\$468	\$504
Best Revenue/Worst Cost	28.6%	28.0%	27.9%	26.9%	27.4%
Worst Revenue/Best Cost	28.8%	28.6%	28.7%	28.0%	28.7%

Unhealthy Options

These funding gap projections paint a bleak picture of the MBTA's future. Without outside debt relief for the Authority, more revenue will need to be raised or costs will need to be reduced. There are a number of factors that impact the MBTA's revenue/expense calculation, but only a few of them are within the MBTA's ability to control. The main methods by which the MBTA can independently affect its revenue and expenses is through another fare increase, significant service reductions, or by restructuring MBTA debt. All of these options to close its budget gaps have a significant negative impact on the MBTA and its riders.

Fare Increase

Fare increases in order to offset these deficits could take a number of forms. If, for example, the MBTA were to take each fiscal year's deficit projection and seek to offset that projection with an annual fare increase (by the whole percentage which would put that fiscal year closest to breaking even), the result would be a 37 percent fare increase on the low end (in the best cost scenario) and a 39 percent fare increase on the high end (in the worst cost scenario) over the five-year life of this projection.⁴

To illustrate, that percentage increase would translate into raising a single ride subway fare by \$.65 over five years from \$1.70 to \$2.35 on a CharlieCard or \$2.00 to \$2.75 for rides taken with a CharlieTicket. The Link Pass would increase from \$59.00 to \$81.00 a month. A commuter rail Zone 4 pass holder would see an increase from \$186.00 to \$257.00 a month over the same five-year period. (See Appendix B for full breakdown of fare increase amounts). The bottom-line is that an increase of this magnitude would have a significant negative impact in terms of reducing ridership, and consequently would hurt the region's economic and environmental health. Moreover, transit dependent riders would be hit the hardest.

Service Decrease

If the MBTA chooses not to increase fares, another option for closing its budget gap is to enact several service decreases in order to reduce costs. Prior to the 2007 fare increase, the MBTA broadly categorized the types of service decreases riders would experience in order to obtain the same \$70 million in projected gains from that year's fare increase in its draft impact analysis. This

gives us examples of service reductions provided by the MBTA. These include:

- 50 percent reduction in bus and rapid transit service after 9 p.m. weekdays and all day on weekends
- Reduction of up to 20 bus routes, focusing on those losing the most money
- Elimination of 50 percent of Commuter Rail service after 9 p.m. and 50 percent of service all day on weekends
- Increase peak rapid transit headways by removing one train set from each time period before 9pm on weekdays.
- Elimination of The RIDE service in towns not mandated by law
- Elimination of Suburban Transportation Program, which provides partial funding for local municipal bus services in seven suburbs and the Mission Hill Link bus.

According to the impact analysis prepared by Central Transportation Planning Staff (CTPS) on May 10, 2006, these measures would lead to an annual ridership loss of 18,088,082⁵.

Debt Re-Structure

The MBTA could also, as it has done in the past, re-structure some of its debt. Since debt payments are the T's largest and fastest growing single expense, changing the way the T pays this debt can have huge impacts on a given fiscal year. The downside is that it would likely increase the overall debt amount of the MBTA in the long run.

Re-structuring debt can take many forms. In past years the MBTA has re-funded⁶ some of its maturing debt so as to lower its debt service expenses in a given fiscal year. A positive way to refund debt is to refund it for savings, by getting a lower interest rate. For example, in FY2007, the MBTA engaged in a refunding that reduced that year's debt service expenses by \$10 million. The next fiscal year, FY2008, the T reduced debt service

expenses by \$28 million through refunding. The MBTA has done this several times in the past in order to stave off increasing debt service expenses.

Another way to refund debt, and more likely option for the MBTA because they have already achieved low interest rates, is to issue new bonds to pay off the debt associated with already-issued bonds that are scheduled to mature in the near future, but at the same or higher interest rate. This would result in a smaller annual debt payment in the short-term because the MBTA would push off these payments into the future. But in the long-term it would add to the MBTA's overall debt. The MBTA could, if it chose to do so, refund several portions of its maturing debt (that in sum comprise the \$436 million in anticipated debt service expenses for FY2009) in order to reduce its projected debt service expenses in that fiscal year.

Other Revenue/Cost Sources

There are a number of other revenue sources and costs that go into the MBTA's revenue/expense calculations, but these other factors are either extremely unlikely to

change for the MBTA's favor or are beyond the MBTA's ability to control. These include things like a sudden increase in the amount of revenue obtained by the Commonwealth via the sales tax, a legislative change in the amount of revenue the MBTA receives through assessments to cities and towns, or a significant decrease in the MBTA's labor and energy costs.

One other potential revenue stream the MBTA has the ability to control is the sale of MBTA owned real-estate property. While property sales could provide the MBTA with extra revenue not specifically accounted for in these projections—and have done so in the past—it is highly unlikely that future real-estate sales will be enough to cover the projected budget gaps. Additionally, even if the MBTA were able to find new revenue through the sale of land it currently owns, such a fix would necessarily be short-term and unsustainable. Once the sale is initiated, the MBTA would be unable to return again to the sale of such property in subsequent years, when its financial situation is only expected to worsen. Therefore, relying upon real estate revenue to save the MBTA from the deficits projected here is unrealistic.

Consequences

As stated earlier, any of the three reasonably viable options to the MBTA—fare increase, service decrease, debt restructuring—would have a negative impact on the MBTA system, its riders and the region. The problems associated with each budget gap closing option are discussed in detail here.

Fare Increase and Service Decrease

Many studies have explored the relationship between changes in transit fares and service, and ridership. Intuitively, it makes sense that increases in fares and decreases in service would discourage ridership; a system that costs more and provides worse service to potential customers is much less likely to attract riders than one that costs less and provides better service. While transit elasticity value is difficult to predict and no single transit elasticity value applies in all situations, studies have confirmed that fare increases and service reductions reduce ridership. According to one study, a 10 percent increase

in fares on average will result in a 2 percent to 5 percent decrease in ridership in the short-term and a 6 percent to 9 percent decrease in the long-term. Similarly (and more seriously), a 10 percent decrease in service on average will result in a 5 percent to 7 percent decrease in

	Market Segment	Short Term	Long Term
Transit ridership with respect to transit fares	Overall	-0.2 to -0.5	-0.6 to -0.9
Transit ridership with respect to transit service	Overall	0.50 to 0.7	0.7 to 1.1

Source: Litman, Transit Price Elasticities and Cross-Elasticities

ridership in the short-term and a 7 percent to 11 percent decrease in the long-term.⁷ Obviously, then, the most readily-available revenue-generating and cost-cutting measures will prove to have a significant negative impact on ridership, one that only grows more serious as time goes on. And will serve to erode the amount of revenue the MBTA receives in fares in the long run.

According to MBTA data, the most recent January 2007 fare increase resulted in a 2.3 percent drop in ridership between January and June, which is equivalent to 8.7 million fewer rides from the year before.

Of course fewer MBTA riders are not just a negative for the MBTA's finances. If the MBTA implemented a 30 percent fare increase or greater, it could potentially experience 66,000 – 165,000 fewer trips taken by riders each day according to the above research. And, as CTPS estimated on 2006, an annual ridership loss of approximately 18 million if service was reduced. Many riders that don't take the MBTA are likely making that same trip in an automobile. And that type of increase of cars on the roads would worsen traffic congestion and air pollution, and add to the deterioration of our roads.

More Borrowing

Debt re-funding also poses long-term difficulties for the financial health of the MBTA. While some refunding would have a positive effect on an organization's finances (such as refunding debt issued at unfavorable rates into debt at rates much more favorable to the organization), refunding debt for the purpose of pushing it out into the future, as the MBTA may be forced to do, is poor fiscal management and should be discouraged, as it does nothing to remedy the core problem—an overabundance of debt that has reached unmanageable

levels. In fact, refunding at this time would likely add to the MBTA's total debt with interest of \$8.1 billion.

Neglecting Maintenance and Repair

No matter what option the MBTA ultimately chooses, closing its budget gap merely helps the MBTA avoid a large operating deficit and balances its operating budget for a given fiscal year. While these options would help the MBTA break even in a specific year or even over the life of the projection, they do very little to permit the MBTA to accumulate enough revenue to address the Authority's huge backlog in maintenance needs. The revenue generated or costs cut to close the budget gap would mostly address debt service.

The goal for the MBTA in 2000 when the legislature put the MBTA on "Forward Funding" was for the Authority to surplus enough revenue to use "Pay-Go" financing to address capital maintenance projects. Without that ability, the MBTA will be forced to either finance these projects through debt, exacerbating its already problematic debt forecast, or to abandon necessary maintenance improvements.⁸ These improvements will likely only get more expensive as time goes on, and as the state of the MBTA's transit systems worsens, the quality of service provided to its riders will decrease. Therefore, the options presented here that are available to the MBTA to close their budget gaps are conservative in the sense that they only permit the MBTA to tread water and do nothing toward helping to improve the Authority's backlog of necessary maintenance improvements. Addressing critical infrastructure needs should improve MBTA service, or at least prevent it from getting worse, so the Authority can attract and retain riders.

Conclusion

Without debt relief from the state, the MBTA will be forced to implement significant service decreases, exact fare increases that will greatly outpace the rate of inflation, or engage in debt refunding that will add to the MBTA's overall debt load. None of these options are truly acceptable because of the negative impact they will have on the long-term financial stability of the MBTA, the affordability of the system, or the decrease in ridership they will cause.

Furthermore, if the MBTA is unable to adequately operate its current system, the state will be at a disadvantage to qualify for "New Starts" federal matching funds for transit expansions such as the Green Line extension to Medford, and others. One of the critical criteria a transit agency must meet to be

awarded New Starts funding is the ability to assume operating costs of additional service. Currently, the MBTA is unable to swallow additional operating costs.

Public transportation provides numerous benefits, including an affordable option for getting around, economic development, easing traffic congestion, helping to clean our air, saving millions of gallons of oil and global warming emissions every year, reducing sprawl, and decreasing auto accidents, to name a few. In order to maintain and improve the quality of life in Massachusetts, address critical problems like pollution and traffic congestion, and stay competitive in encouraging employers and workers to live in the Commonwealth, we need a thriving public transit system.

Recommendations

The MBTA is limited in its options to address its budget deficits. Since all of the realistic options available to the MBTA are detrimental to the overall health of the system, outside help is required to place the MBTA on sound financial footing. Echoing the recommendations of the Transportation Finance Commission, the state should relieve the MBTA of debt associated with the Central Artery/Tunnel mitigation. As the Commission says, "About 35 percent of the principle amount of the outstanding debt (\$1.8 billion) is directly attributed 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."⁹

Along with debt relief, the TFC recommends reducing the rate of growth of MBTA employee healthcare costs and pensions. While these cost reductions should be looked at, they are undoubtedly long term ways to address MBTA financing. For the short term sustainability of the system, the MBTA needs debt relief immediately. Not only would this be a smart policy decision, it is also a fair policy decision since much of the MBTA's debt is a result of Big Dig mitigation projects the state saddled the MBTA with. Without debt relief, we risk alienating the riders on which a healthy transit system depends and losing the economic and environmental benefits that come with public transportation use.

Methodology

To develop these projections, MASSPIRG used a number of sources. The FY2008 board approved MBTA budget figures (the starting points for the projections discussed in this report) that were taken from the MBTA Advisory Board.¹⁰ The dollar amount for fare revenue is the combined total of rapid transit revenue, commuter rail transit revenue, surface transit revenue, and school, senior, and paratransit revenue. Non-operating revenues include income from interest, non-operating income, federal funds, and utility reimbursements. Fringe benefits include pensions, healthcare, group life, disability insurance, workers' comp, and other fringe benefits. Other operating expenses include payroll taxes, materials, supplies, and services, casualty & liability, purchased commuter rail and local services expenses, and financial service charges. The debt service expense figures are taken from MBTA projections of debt service expenses (with additional borrowing) due through Fiscal Year 2013.¹¹

The percentage figures which form the basis for our projections—for revenues (sales tax, local assessments, fares, real estate, advertising, non-operating), expenses (wages, fringe benefits, other expenses), and ridership—were developed by the Transportation Finance Commission and were listed and discussed in that

group's March 2007 published findings.¹² These findings included a review of the relevant data's historical averages as well as the most recent figures. These averages are used to come up with what amounts to "Best Case" and "Worst Case" scenarios for both revenues and costs. The two most likely scenarios, Best Revenue/Worst Cost and Worst Revenue/Best Cost, are the two scenarios contemplated in these projections.

It is important to note that because MASSPIRG's debt projections largely rely upon the TFC projections, its projections are subject to the same high degree of uncertainty. Because the funding gap projections are based so significantly on these factors, slight changes to them will result in fairly significant changes to the funding gap forecast. These sensitivity figures are examined in Exhibit 37 of the TFC Findings. These sensitivities were calculated over the 20-year period contemplated by the Transportation Finance Commission, and the sensitivity figures listed in the TFC Findings are significantly larger than the sensitivity figures would be for this projection, because of how far out each projection reaches. However, it is worth noting that small percentage changes in the forecast assumptions can yield fairly significant impacts on the overall funding gap projection.

Endnotes

¹ MASSACHUSETTS TRANSPORTATION FINANCE COMMISSION, *TRANSPORTATION FINANCE IN MASSACHUSETTS: AN UNSUSTAINABLE SYSTEM* (2007) [hereinafter TFC FINDINGS].

² Recommendations of the Massachusetts Transportation Finance Commission.

³ See URBAN LAND INSTITUTE BOSTON DISTRICT COUNCIL, *ON THE RIGHT TRACK: MEETING GREATER BOSTON'S TRANSIT AND LAND USE CHALLENGES* 21 (2006) ("Budget data obtained for a number of big city transit agencies . . . indicates that they spend roughly 10–15% of their operating budget on debt service payments."), available at <http://www.curp.neu.edu/pdfs/On%20the%20Right%20Track.pdf>.

⁴ These fare increases would result in slight five-year surpluses of \$1.3 million and \$3.2 million, respectively. The changes these percentage increases would have in terms of actual fares are shown in Appendix B.

⁵ Central Transportation Planning Staff, *Draft Technical Report: Impact Analysis of a Potential MBTA Fare Increase and Restructuring in 2007*, (2006)

⁶ Re-funding debt or bonds is a financial term that refers to issuing new bonds to pay off maturing bonds.

⁷ Todd Litman, Victoria Transport Policy Institute, *Transit Price Elasticities and Cross-Elasticities*, 7 *JOURNAL OF PUBLIC TRANSPORTATION* 37, 53 (2004).

⁸ Examples of the types of capital maintenance projects that have been deferred as a result of a lack of adequate capital funding are listed in Appendix C.

⁹ Recommendation #11 of the Massachusetts Transportation Finance Commission, pg 17.

¹⁰ MBTA ADVISORY BOARD FINANCE COMMITTEE, *MBTA FISCAL YEAR 2008 BUDGET REQUEST 2* (2007), available at <http://www.mbtaadvisoryboard.org/Reports/FCreport2008.pdf>.

¹¹ MASSACHUSETTS BAY TRANSPORTATION AUTHORITY, *PRESENTATION TO THE MASSACHUSETTS BAY TRANSPORTATION AUTHORITY ADVISORY BOARD, FY 2008 BUDGET REQUEST 8* (2007).

¹² Massachusetts Transportation Finance Commission Findings, *supra* note 1, pg 51-53.

Appendix A:

MBTA Budget Gap Projections

Worst Case Revenue and Best Case Cost

Fiscal Year	2008 (budget)	2009	2010	2011	2012	2013
Revenues						
Sales Tax	\$755,982,210	\$778,661,676	\$802,021,527	\$826,082,172	\$850,864,638	\$876,390,577
Local Assessments	\$142,913,229	\$146,486,060	\$150,148,211	\$153,901,917	\$157,749,464	\$161,693,201
Operating Revenue						
Fares	\$430,099,183	\$434,400,175	\$460,681,385	\$465,288,199	\$469,941,081	\$498,372,517
Real Estate	\$37,362,808	\$38,296,878	\$39,254,300	\$40,235,658	\$41,241,549	\$42,272,588
Advertising	\$11,000,000	\$11,550,000	\$12,127,500	\$12,733,875	\$13,370,569	\$14,039,097
Total	\$478,461,991	\$484,247,053	\$512,063,186	\$518,257,732	\$524,553,199	\$554,684,202
Non-Operating Revenue	\$35,400,000	\$36,285,000	\$37,192,125	\$38,121,928	\$39,074,976	\$40,051,851
Total Revenues	\$1,412,757,430	\$1,445,679,789	\$1,501,425,048	\$1,536,363,749	\$1,572,242,277	\$1,632,819,830
Expenses						
Operating Expenses						
Wages	\$358,513,203	\$366,759,007	\$375,194,464	\$383,823,937	\$392,651,887	\$401,682,880
Fringe	\$169,733,543	\$177,541,286	\$185,708,185	\$194,250,762	\$203,186,297	\$212,532,866
Other	\$509,474,587	\$532,400,943	\$556,358,986	\$581,395,140	\$607,557,922	\$634,898,028
Total	\$1,037,721,333	\$1,076,701,236	\$1,117,261,635	\$1,159,469,838	\$1,203,396,105	\$1,249,113,775
Debt Service Expenses	\$374,299,967	\$436,000,000	\$447,000,000	\$466,000,000	\$468,000,000	\$504,000,000
Total Expenses	\$1,412,021,300	\$1,512,701,236	\$1,564,261,635	\$1,625,469,838	\$1,671,396,105	\$1,753,113,775
% debt to total expenses	26.5%	28.8%	28.6%	28.7%	28.0%	28.7%
Operating Surplus (Deficit)	\$736,130	\$(67,021,447)	\$(62,836,587)	\$(89,106,089)	\$(99,153,828)	\$(120,293,945)
Total, FY2008-FY2013	\$ (437,675,765)					

Notes (all assumptions come from the Transportation Finance Commission Report, March 28, 2007)

- Sales Tax assumes a 3% increase
- Local Assessments assumes a 2.5% annual increase
- Ridership assumes a 1% annual increase
- Fare increase assumes a 5% increase in 2010 and every three years thereafter
- Real Estate assumes a 2.5% annual increase
- Advertising assumes a 5% annual increase
- Non Operating Revenue assumes a 2.5% annual increase
- Wages assumes a 2.3% annual increase
- Fringe benefits assumes an 4.6% increase
- Other Operating Costs assumes a 4.5% increase
- Debt Service Expense MBTA Projections (May 2007)

Source: Transportation Finance Commission

Best Case Revenue and Worst Case Cost

Fiscal Year	2008 (budget)	2009	2010	2011	2012	2013
Revenues						
Sales Tax	\$755,982,210	\$791,362,177	\$828,397,927	\$867,166,950	\$907,750,364	\$950,233,081
Local Assessments	\$142,913,229	\$146,486,060	\$150,148,211	\$153,901,917	\$157,749,464	\$161,693,201
Operating Revenue						
Fares	\$430,099,183	\$434,400,175	\$482,618,594	\$487,444,780	\$492,319,228	\$546,966,662
Real Estate	\$37,362,808	\$38,296,878	\$39,254,300	\$40,235,658	\$41,241,549	\$42,272,588
Advertising	\$11,000,000	\$11,550,000	\$12,127,500	\$12,733,875	\$13,370,569	\$14,039,097
Total	\$478,461,991	\$484,247,053	\$534,000,394	\$540,414,313	\$546,931,346	\$603,278,347
Non-Operating Revenue	\$35,400,000	\$36,285,000	\$37,192,125	\$38,121,928	\$39,074,976	\$40,051,851
Total Revenues	\$1,412,757,430	\$1,458,380,290	\$1,549,738,658	\$1,599,605,108	\$1,651,506,150	\$1,755,256,480
Expenses						
Operating Expenses						
Wages	\$358,513,203	\$372,853,731	\$387,767,880	\$403,278,596	\$419,409,739	\$436,186,129
Fringe	\$169,733,543	\$183,312,226	\$197,977,205	\$213,815,381	\$230,920,611	\$249,394,260
Other	\$509,474,587	\$534,948,316	\$561,695,732	\$589,780,519	\$619,269,545	\$650,233,022
Total	\$1,037,721,333	\$1,091,114,274	\$1,147,440,817	\$1,206,874,495	\$1,269,599,896	\$1,335,813,411
Debt Service Expenses	\$374,299,967	\$436,000,000	\$447,000,000	\$466,000,000	\$468,000,000	\$504,000,000
Total Expenses	\$1,412,021,300	\$1,527,114,274	\$1,594,440,817	\$1,672,874,495	\$1,737,599,896	\$1,839,813,411
% debt to total expenses	26.5%	28.6%	28.0%	27.9%	26.9%	27.4%
Operating Surplus (Deficit)	\$736,130	\$(68,733,984)	\$(44,702,159)	\$(73,269,388)	\$(86,093,745)	\$(84,556,932)
Total, FY2008-FY2013	\$(356,620,077)					

Notes (all assumptions come from the Transportation Finance Commission Report, March 28, 2007)

Sales Tax assumes a 4.68% annual increase
 Local Assessments assumes a 2.5% annual increase
 Ridership assumes a 1% annual increase
 Fare increase assumes a 10% increase in 2010 and every three years thereafter
 Real Estate assumes a 2.5% annual increase
 Advertising assumes a 5% annual increase
 Non-Operating Revenue assumes a 2.5% annual increase
 Wages assumes a 4% annual increase
 Fringe benefits assumes an 8% increase
 Other Operating Costs assumes a 5% increase
 Debt Service Expense MBTA Projections (May 2007)

Appendix B:

Fare Increase Chart

Type of Fare	Current Fare	38% Fare Increase (Five Year Projection)
Subway		
Charlie Card	\$1.70	\$2.35
Charlie Ticket	\$2.00	\$2.75
Local Bus (per ride)		
Charlie Card	\$1.25	\$1.75
Charlie Ticket	\$1.50	\$2.05
Local Bus (monthly pass)	\$40.00	\$55.00
LinkPass (monthly)	\$59.00	\$81.00
Inner Express Bus		
Per Ride	\$2.80	\$3.85
Monthly Pass	\$89.00	\$123.00
Outer Express Bus		
Per Ride	\$4.00	\$5.50
Monthly Pass	\$129.00	\$178.00
Commuter Rail (per ride)		
Zone 1A	\$1.70	\$2.35
Zone 1	\$4.25	\$5.85
Interzone 1	\$2.00	\$2.75
Zone 2	\$4.75	\$6.55
Interzone 2	\$2.25	\$3.10
Zone 3	\$5.25	\$7.25
Interzone 3	\$2.50	\$3.45
Zone 4	\$5.75	\$7.95
Interzone 4	\$2.75	\$3.80
Zone 5	\$6.25	\$8.65

Type of Fare	Current Fare	38% Fare Increase (Five Year Projection)
Interzone 5	\$3.00	\$4.15
Zone 6	\$6.75	\$9.30
Interzone 6	\$3.50	\$4.85
Zone 7	\$7.25	\$10.00
Interzone 7	\$4.00	\$5.50
Zone 8	\$7.75	\$10.70
Interzone 8	\$4.50	\$6.20
Commuter Rail (monthly pass)		
Zone 1A	\$59.00	\$81.00
Zone 1	\$135.00	\$186.00
Interzone 1	\$65.00	\$90.00
Zone 2	\$151.00	\$208.00
Interzone 2	\$77.00	\$106.00
Zone 3	\$163.00	\$225.00
Interzone 3	\$89.00	\$123.00
Zone 4	\$186.00	\$257.00
Interzone 4	\$101.00	\$139.00
Zone 5	\$210.00	\$290.00
Interzone 5	\$113.00	\$156.00
Zone 6	\$223.00	\$308.00
Interzone 6	\$125.00	\$173.00
Zone 7	\$235.00	\$324.00
Interzone 7	\$137.00	\$189.00
Zone 8	\$250.00	\$345.00
Interzone 8	\$149.00	\$206.00

Appendix C:

MBTA Deferred Maintenance Projects

Project Title	Amount Requested	Ramifications
Procurement of Red Line No. 4 Cars	\$220,000,000	Increased maintenance costs on the Red Line's No. 1 car fleet, which has already surpassed its useful life
Orange Line Infrastructure Analysis for the Introduction of New Generation Trains	\$49,317,591	Necessary infrastructure will not be ready to allow the Orange Line to accommodate projected increases in ridership
AC Cable and Duct Bank Replacement: 0-39-1, 0-39-2, 0-39-3	\$39,750,000	No viable alternative to replacing the cables. Cables and duct line will further deteriorate, causing faults that will increase stress on other cables in this loop
Orange Line DC Breaker Upgrade	\$21,000,000	Corrective maintenance will continue to increase in frequency and cost. Disruption in service or greater loss could result depending on how and when the equipment fails
Cabot RTL and Wellington – Switch House DC Breaker Upgrade	\$5,700,000	Increased maintenance costs and an increasingly unreliable power supply service for the Red and Orange Lines
480 VAC Cable Replacement – Ruggles, Jackson, Stony Brook	\$7,936,220	Further cable deterioration will cause a growing failure rate, leading to increased maintenance costs and more frequent revenue service interruptions
480 VAC Cable and Panel Replacement – Harvard to Alewife	\$14,797,490	Continued system faults
Signal Cable Replacement – Harvard to Alewife	\$12,611,752	Significant impact on reliability. As the cable plant is deemed unsafe, entire sections will need to be taken out of service, causing significant costs both for maintaining service with impacted headways and for emergency repairs
Green Line Central Tunnel Signal Improvement	\$145,158,519	As the equipment is deemed unsafe and the signal system becomes more unreliable, entire sections will need to be taken out of service, resulting in significant costs both for maintaining service with impacted headways and for emergency repairs

Source: MBTA

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