Deval L. Patrick, Governor
Timothy P. Murray, Lt. Governor
Richard A. Davey, MassDOT Secretary & CEO
Jonathan R. Davis, Acting General Manager
and Rail & Transit Administrator

massDOT
Massachusetts Department of Transportation
Rail & Transit Division

February 9, 2012

The Honorable Patricia Jehlen
Massachusetts Senate
State House, Room 513
Boston, MA 02133

The Honorable Sean Garballey
House of Representatives
State House, Room 540
Boston, MA 02133

Dear Senator Jehlen and Representative Garballey:

Thank you for your inquiry regarding the MBTA's proposed changes to fare and service levels for fiscal year 2013. We are pleased to provide information on the MBTA's costs of service and our actions taken to date to reduce our internal costs.

Despite substantial increases to non-fare revenue sources and improvements in operational efficiency, the MBTA is projecting an operating deficit for FY2013 and due to our statutory requirement to submit a balanced budget, we have prepared and presented proposals for fare and service changes. In order to meet our upcoming fiscal year budget the MBTA will need to identify approximately $161,000,000 through a combination of continued internal efficiencies, increased fare revenue and reduced service.

Our public comment process began on January 3 and will ultimately include over 25 meetings / hearings across the MBTA service area. To date over 3,000 people have attended meetings and over 750 have provided comment. In addition some 3,000 people have sent in comment via email. This public input will be essential to the determination of our best path forward. At the conclusion of the public comment process, the MBTA will prepare a final recommendation to our board, to be presented on March 14, 2012. The board will consider the recommendation and be requested to vote April 4. The final approved plan will be implemented July 1.

In order to assist you in engaging on this important issue, we have provided below a response to your requests for information. We would be pleased to answer any questions on this information at our meeting on February 9.

1. Tab A: MBTA Review, November 1, 2009 by David D'Alessandro. This document provides a comprehensive overview of the MBTA's funding, capital and maintenance needs.

Massachusetts Bay Transportation Authority
Ten Park Plaza, Suite 3910, Boston, MA 02116
www.mbta.com

2. *How much is spent annually on parking lots and garages?* Please see Tab B.

3. *How much is spent annually on snow removal?* Over the last four years the MBTA has averaged approximately $1.2 million per season on snow removal costs. This figure includes overtime and materials.

4. *Vehicle counts each day on HOV lanes?* Please see Tab C.

5. *Breakdown of operational spending over the past 10 years (i.e., energy, debt, salaries, pensions, health care, maintenance, RIDE, etc.).* Please see Tab D for the MBTA's Statement of Revenue and Expenses, and supporting documents.

6. *10-year breakdown of all revenue sources (fares, federal funding, advertising, etc.)* Please see the information in Tab D and the supplement in Tab E for the MBTA's Non-Fare Revenue Analysis. Additionally, copies of the MBTA's most recent annual submission to the legislature regarding non-fare revenues are provided.

7. *30-year debt service schedule.* Please see Tab F for information on debt amounts, schedules and a list of the projects included in the Administrative Consent Order ("Big Dig Settlement")

8. *The amount of per-passenger trip subsidy required per transit mode. Ideally this would differentiate Red Line vs. Blue Line vs. Orange Line vs. Green Line, as well, hopefully, as the various Commuter Rail lines.*

   Please see Tab G for a table of data from the Federal Transit Administration's National Transit Database. This table provides information for each mode of service on the MBTA including, fare revenue, operating expenses, ridership, net operating cost to the MBTA (per trip subsidy), average fare paid and fare recovery ratio. The fare recovery ratio is an industry standard indicating what portion of agency operating costs are paid by the passenger. The MBTA and most other transit agencies do not have data for costs within a mode, such as to differentiate between the Red and the Orange Lines.

9. *Is there any ridership data for the commuter rail lines?* Please see Tab H.

10. *Breakdown of all steps taken over past 5 years to realize budgetary savings through efficiencies, reduced headcounts, single-operator trains, implementation of transportation reforms, GIC switch, pension, etc.*

Please see Tab I for the MBTA's Efficiencies and Cost Savings document, a report that details efforts over the last ten years to reduce the MBTA's internal administrative and operating costs. This document, among others, has been posted on the MBTA's web site during the public comment period.

11. *What is the bottom line the MBTA would need to prevent the worst cuts to service?*

For FY2013 the MBTA has proposed reductions to service and fare increases to address the $161,000,000 operating deficit. A menu of service reduction options is provided in Tab J. This menu identifies numerous levels and types of service reduction options. If sufficient resources are identified, portions of the services proposed for elimination could be preserved and different fare levels could be established.

12. *What are the definitions of "ADA service area" and "Premium service area"? If possible could we get a map or some sort of graphic display of each of the areas for comparison?*
The MBTA is proposing a significant change to RIDE paratransit pricing structure but is not proposing to eliminate any RIDE service. In accordance with Federal Transit Administration policy the MBTA is proposing to provide paratransit service within 0.75 miles of all fixed route bus and subway service. Any paratransit trips outside of this "base" territory would be subject to a new, premium fare. In addition, trips requested on the same day and trips that take place outside of the service hours of the comparable fixed route service would be subject to the premium fare. Each of these changes will help the MBTA reduce its RIDE operating costs while preserving the service for all customers served in 2011. Maps for Scenario 1 and Scenario 2 are included in Tab K.

13. *How was the E line decided upon to be eliminated on weekends?*

In considering service reduction alternatives to reduce the operating deficit, the MBTA considered routes with lower utilization and routes with reasonably nearby services. The proposal to curtail Green Line E branch service on weekends is not due to low ridership or poor productivity as ridership levels on the E branch are substantial. The main driver is redundancy, since the E branch overlaps with the Route 39 bus, and there is capacity on the bus to carry the rail passengers during off-peak time periods. The MBTA does not recommend eliminating the Route 39 and keeping the E branch, since many E branch surface stations are not accessible to persons with disabilities while the Route 39 is accessible.

14. *Could it happen that if a town lost almost all its bus service, its assessment would then be lowered?*

    Assessments are set by population and determined in accordance with standing legislation. Service levels are not specified in the assessment formula. Only an act of the legislature would change the assessment formulas.

15. *What is the status of the reforms proposed in the Transportation Finance Commission Report?* Please see Tab L for an updated progress report.

I look forward to working with caucus members to help determine the best path forward for the MBTA. Our goal is to make the best use of the resources we have to provide safe, quality service and achieve improved customer satisfaction. Please do not hesitate to contact my office with any questions you may have about these or other topics related to the MBTA's services.

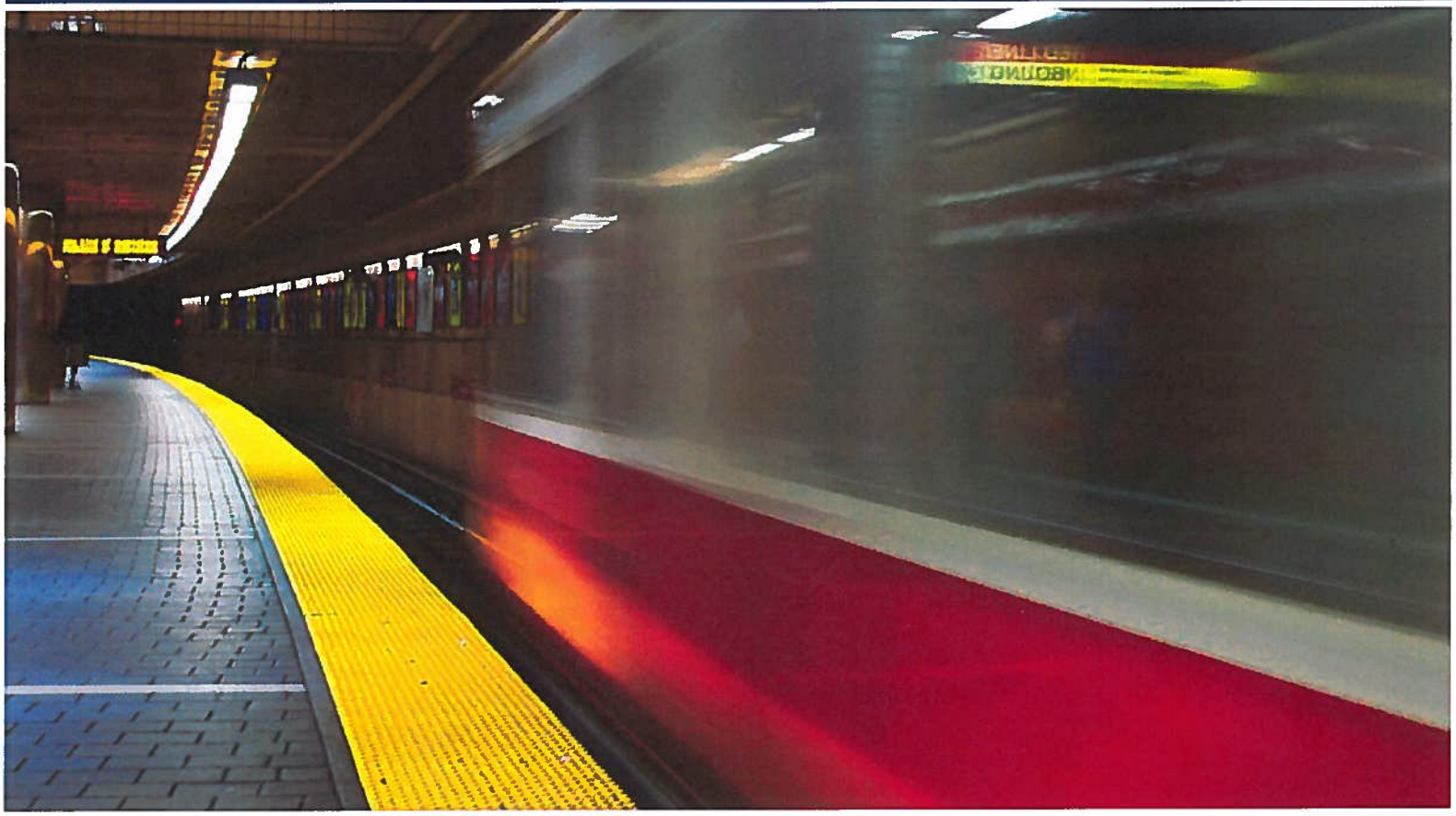
Sincerely,

Jonathan R. Davis
Acting General Manager

Attachments

TAB A

MBTA Review



November 1, 2009

AUTHORS/RESEARCHERS

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Mission

This document is the result of an independent review of the Massachusetts Bay Transportation Authority (MBTA) requested by Governor Deval Patrick. Begun in late August 2009, the review's mission was to examine the MBTA's financial condition, operations and organization. The Governor asked us to provide a "frank assessment of the MBTA's condition." He directed his administration and MBTA officials to cooperate with this review and they did so fully. At no time did anyone in the administration interfere with or attempt to influence our process or findings. No government or MBTA official read or edited this report in advance of its delivery to the Governor.

What works well, what doesn't work well and the extent of its challenges.

Our findings deadline was November 1, 2009. Within this time frame it was possible to conduct a top-line review of the MBTA's performance versus past plans and future expectations. We were able to determine "what works well, what doesn't work well and the extent of its challenges." While it was unfortunately impossible to meet with all of the MBTA's many constituencies, we conducted hundreds of relevant interviews.

Our work involved these basic aspects:

- Reviewing numerous internal and external documents, analyses and plans
- Interviewing current and former MBTA and transportation officials at many different levels, meeting with external experts and related constituents
- Interviewing a number of government officials
- Analyzing all of the data gathered and forming a set of conclusions

We were not asked for specific recommendations.

In forming our conclusions, we verified and utilized data from a variety of reports, public documents, MBTA and Executive Office of Transportation documents as well as information generated from interviews and meetings. Most of the MBTA financial information is from MBTA audited statements and/or its Chief Financial Officer and his staff.

As regards other urban transportation systems, we note that many also face deficits and great challenges. We focused on the MBTA's issues, as every system is very different in terms of age, size, modes of transportation and funding mechanisms. Generally, we did examine major market comparisons in wages, fare prices and cost per mile and determined the MBTA was within reasonable ranges.

But, in our time frame of 60 days, our primary assignment was to review one system—the MBTA. Here is what we found.

The Outlook Is Bleak

Our "frank assessment" concludes that a structural operating deficit has existed for many years.

The legislation known as "Forward Funding" that was implemented in July 2000 to make the MBTA financially self-sufficient was a great idea. Unfortunately, the MBTA plan developed to implement Forward Funding was unrealistic and destined to fail. As a result, a structural operating deficit between expenses and revenue has existed for many years—predating this administration.

Through depleting cash reserves, restructuring debt and delaying planned debt payments, the MBTA has managed to meet its requirement to balance its annual budget. Unfortunately, the repeated restructuring of hundreds of millions of dollars in debt payments achieved the exact opposite intent of the legislation that sought to transform the MBTA, and postponed the day of reckoning for repaying deferred interest and principal.

As homeowners painfully learned in the sub-prime mortgage debacle, it is only a matter of time before those delayed payments are due.

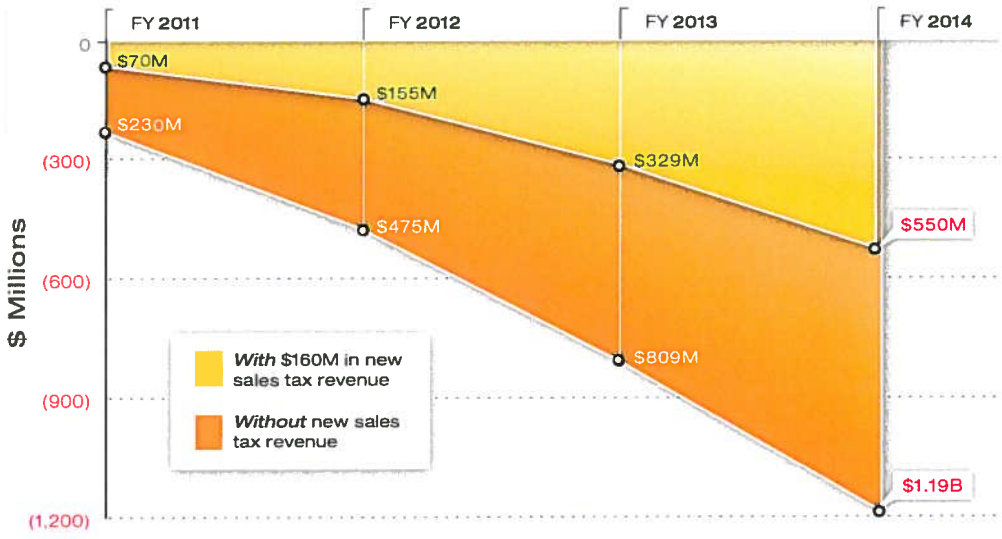
That time has arrived.

The MBTA must now face larger and growing deficits over the next few years as a result of these restructurings, added debt and many unavoidable costs that are now built into the system.

This year the MBTA's FY10 budget faced a deficit of $186M. After MBTA management exercised $26M in budget cuts, the remaining shortfall was resolved when the Legislature authorized the transfer of $160M in new sales tax revenues to the MBTA, on top of the MBTA's existing sales tax revenue base. Assuming this $160M amount is dedicated each year for the next four, it represents only a partial solution to emerging deficits.

Based on current revenue and expenditure trends, the MBTA will post cumulative deficits through FY14 as follows:

Projected MBTA Cumulative Deficits
FY11-FY14



These deficits will probably increase due to several risk factors on the horizon:

- Upcoming collective bargaining agreements due by June 2010 with 28 unions
- An increase in pension payments necessitated by pension fund investment results
- Unpredictable increases in energy and material costs
- An increase in debt service to pay for the necessary growth of capital spending just to keep the system in its current condition

In addition to its structural deficit, the MBTA continues to have significant problems related to the maintenance of its aging infrastructure. There is abundant evidence that the service and safety issues that plague the MBTA are considerably worse than is commonly understood—and are becoming critically worse. The additional investment required even to begin to address this concern will likely exacerbate the MBTA's growing structural deficit.

Massachusetts Transportation Reform Act

Just prior to the start of our analysis, a very progressive and important initiative—the Massachusetts Transportation Reform Act (TRA)—became law. The goal of this Act, which will take effect in November 2009, is to maximize efficiencies among the State's major transportation agencies:

- Massachusetts Turnpike Authority
- Massachusetts Highways Department
- Massachusetts Bay Transportation Authority (MBTA)
- Massachusetts Registry of Motor Vehicles
- Massachusetts Aeronautics Commission

Most experts agree with our observation that budget savings from this consolidation will most immediately benefit agencies other than the MBTA. Eventually, the MBTA will enjoy some of these savings as well, primarily from fringe benefit reforms and pension plan changes. With the exception of some health insurance economies yet to be calculated, these savings will not dramatically affect the financial challenges the MBTA faces in the next few years.

The Starting Point — The Promise of Forward Funding

A virtual mountain of studies, papers and data has been written about the MBTA's finances. Some of it is thorough and relevant; some of it is not. Unfortunately, much of it relies on different comparison points, which contributes to confusion surrounding the MBTA's woes.

In order to best understand the MBTA's current and future issues, it was important for this review to establish a common historical comparison point. What better place than the point in time ten years ago when the MBTA's entire operation and direction was altered by the promise of "Forward Funding," which sought to forever change the MBTA for the better.

Prior to July 2000, the MBTA was essentially a "backward funding" operation. It was not expected to and indeed did not operate with a goal of generating a surplus. Backward funding created no expectations or incentives for the MBTA to control spending or grow its revenues because the State was required to cover its deficits. As the size of the deficits grew larger, the annual bill presented to the State was aptly deemed a "budget buster."

Forward Funding

"Transform the MBTA from an agency that bills the State for its operating deficits to a system that sustains itself from an identifiable revenue stream."

After years of debate, the Legislature and Governor resolved in 1999 that the MBTA should become self-sufficient starting with FY01, which began July 1, 2000. The stated goal was to "transform the MBTA from an agency that bills the State for its operating deficits to a system that sustains itself from an identifiable revenue stream. In terms of the MBTA's operations, this would require greater cost efficiency and revenue enhancement."

The State would assure the ability to achieve self-sufficiency by guaranteeing 20% of the State's sales tax collections (exclusive of meals taxes) to the MBTA, commonly referred to as "a penny on every nickel." Without the fallback of backward funding, the MBTA was now expected to balance each year's budget by enhancing revenues and controlling costs. The phrase "Forward Funding" was born out of this transformation from funding deficits in arrears to achieving self-sufficiency on the foundation of balanced budgets using dedicated revenues from the Commonwealth.

The MBTA thus began a new era based on the discipline and opportunities enabled by Forward Funding. It was immediately expected to begin achieving a small surplus that would grow over the years into a self-sustaining financial model capable of generating larger surpluses and weaning the MBTA from long-term debt.

Our analysis began with examining how the MBTA's actual finances compared with Forward Funding's financial assumptions.

Forward Funding — What Was Supposed to Happen

To implement Forward Funding, the MBTA developed a Finance Plan that set revenue and expenditure benchmarks for FY01 through FY08. We have compared actual results with the Finance Plan's benchmarks and projections to measure the Forward Funding's success.

The Finance Plan called for the MBTA to:

- Decrease operating costs 2% per year from FY01 through FY06
- Balance each year's budget
- Meet cash flow needs without short-term debt by building working capital reserves from $64M to $100M
- Decrease long-term debt by generating cash surpluses worth 5% to 10% of gross revenues that would fund capital investment

While there was no expectation that all these goals would be achieved immediately, it was expected that the MBTA would soon be in a self-sufficient position.

Our comparison of the benchmarks with actual results clearly demonstrates why the plan was unsuccessful, why since 2003 there have actually been large deficits that have not been apparent, and why deficits are now growing so quickly.

What Really Happened — A Promise Unfulfilled

The Forward Funding Finance Plan proved unrealistic in many of its assumptions and nine years later can be deemed a failure.

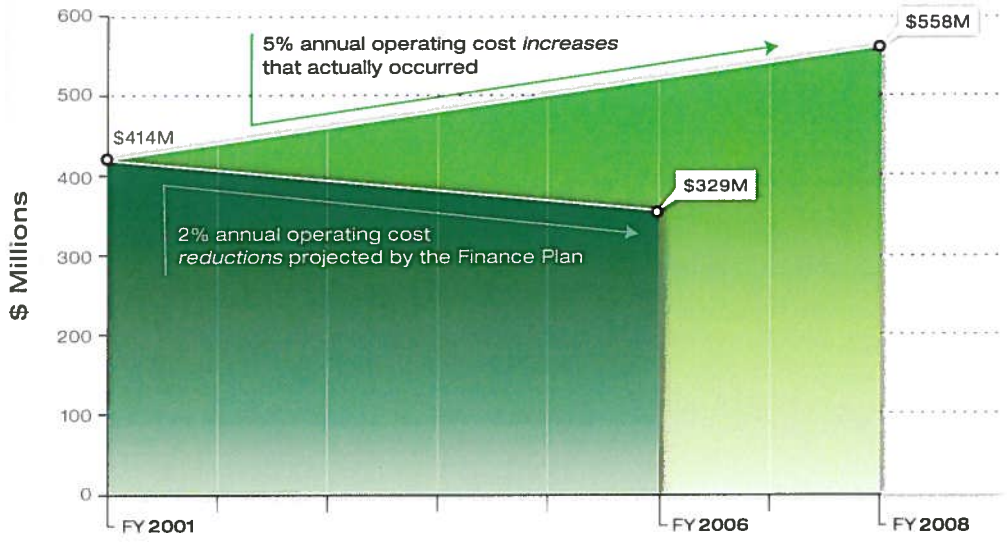
Many promises from the Financial Plan were unfulfilled. Increased surpluses and $100M annual cash reserves never happened. Instead of paying for capital investment, cash reserves were used to cover deficits.

The main driver, however, of why Forward Funding failed was unavoidable cost explosions.

In order to begin building cash surpluses and balance the budget, the Finance Plan called for a "two percent annual decrease in operating costs" between FY01 and FY06. Not only was this not achieved, cumulative costs grew $558M above projections by FY08. Instead of the 2% annual decrease, operating costs grew an average of 5% higher each year or by a cumulative 35%. These cost increases are at the heart of the real deficits of the past nine years and form the basis for the reasons the projected deficits in the coming years are so dramatic.

MBTA Costs

Actual vs. Finance Plan
FY01-FY08



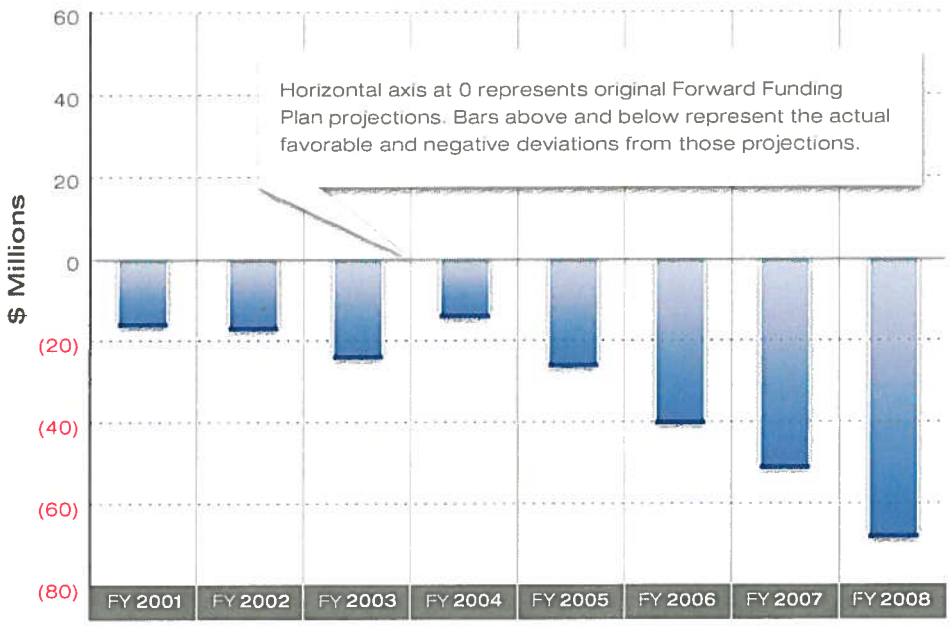
Expenses

The following charts and tables represent the four major expense categories that drove the deficits. This information, provided by the MBTA financial staff, demonstrates the variance between Finance Plan projections and actual results from the base year of FY01 through FY08, the last year of the Plan's projections. The bars above the line represent favorable results; the bars below the line indicate negative or unfavorable financial results.

Fuel & Utilities Expenses

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE NEGATIVE
$256 million



Energy costs increased dramatically over the decade for the economy as a whole, a trend not foreseen by the Finance Plan. As the single largest electricity consumer in Massachusetts, as well as the purchaser of tens of millions of dollars in gasoline, diesel and compressed natural gas, the MBTA's energy and utility consumption is immense.

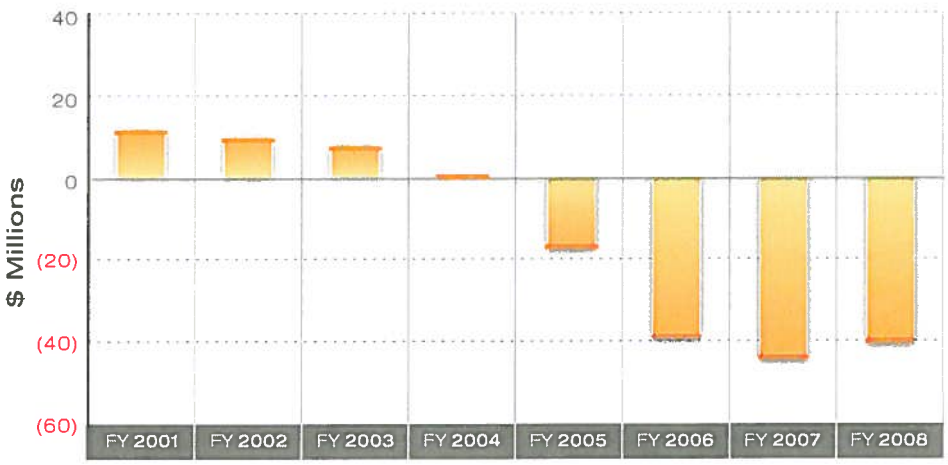
- Fuel and utility costs at the MBTA grew by a remarkable 122% from FY01 to FY08, far surpassing the 22% growth that the Finance Plan projected.
- These costs cumulatively exceeded Finance Plan projections by $256M.
- Fuel and utility costs account for an increasing share of the MBTA's overall budget, ballooning from 6.6% of total operating expenses in FY01 to 10.4% in FY08.

Since the implementation of Forward Funding, the MBTA has attempted to mitigate the impact of fluctuating energy costs by entering into hedge contracts for fuel and by competitively bidding its electricity purchases.

Payroll & Fringe Benefit Expenses

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE NEGATIVE
$113 million



The MBTA currently employs 6,346 workers, of which roughly 600 are in part-time jobs.

All but 263 of these workers are represented by one of 28 unions. Total headcount at the MBTA is actually down by approximately 200 since the Forward Funding Plan began, while total payroll and benefits costs have increased.

- Total payroll and benefits costs increased from $412.8M to $548.9M between FY01 and FY08 due to increases in wage, health care and pension costs.
- This cumulatively exceeded Finance Plan projections by $113M.
- Between FY01 and FY08, the unionized workers received average annual wage increases of 3.0%, while MBTA executives received average annual increases of 1.9%.
- Non-union MBTA employees have not received wage increases since 2005.
- Wage increases for union workers are comparable to the 3.5% annual growth in the Consumer Price Index-Urban Boston and Massachusetts median household income for the same time period.
- The MBTA's wage rates and total wage costs are similar to those of other top U.S. transit systems, as is shown in the table at left.

MBTA Hourly Wages Comparison of Ten Largest Transit Agencies

Transit System	Operator Top Rate
San Francisco	$29.19
New York City	$26.92
Chicago	$26.87
Boston	**$26.56**
Washington	$25.93
Seattle	$25.34
New Jersey	$24.27
Philadelphia	$23.54
Los Angeles	$21.27
Atlanta	$19.25

(As of 1/2008)

The Finance Plan inexplicably projected no increases in health care costs between FY01 and FY08.

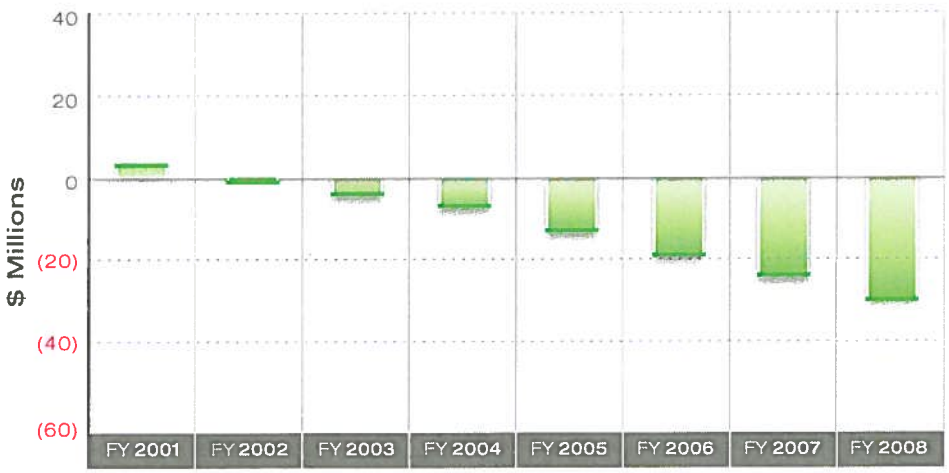
- In reality, employee and retiree health benefits costs increased 73%, growing from $60.6M in FY01 to $104.9M in FY08.

As mentioned previously, the Transportation Reform Legislation passed in July 2009 has the potential at some point to help the MBTA lower its health care and pension costs by switching MBTA employees and retirees to coverage under the Group Insurance Commission (GIC), although MBTA unions have filed a lawsuit that challenges the legality of forcing benefit changes outside of the collective bargaining process.

The Ride Expenses

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE NEGATIVE
$95 million



Among the MBTA's fastest-growing expense categories is the "complementary paratransit" system known as The Ride, which offers door-to-door jitney and van service for individuals with physical and other disabilities. The MBTA is obligated to offer The Ride to any eligible individual, consistent with the Americans with Disabilities Act, in order to qualify for Federal capital funds.

The MBTA's flexibility to control costs is constrained by Federal regulations that

- Govern maximum fares, minimum service areas, trip destinations and disability eligibility criteria.
- Prohibit any restriction that sets a different access standard for the disabled than would apply to the non-disabled population.

Average Cost of a Trip on The Ride

2001	2008	2009
$20.32	$31.02	$34.86

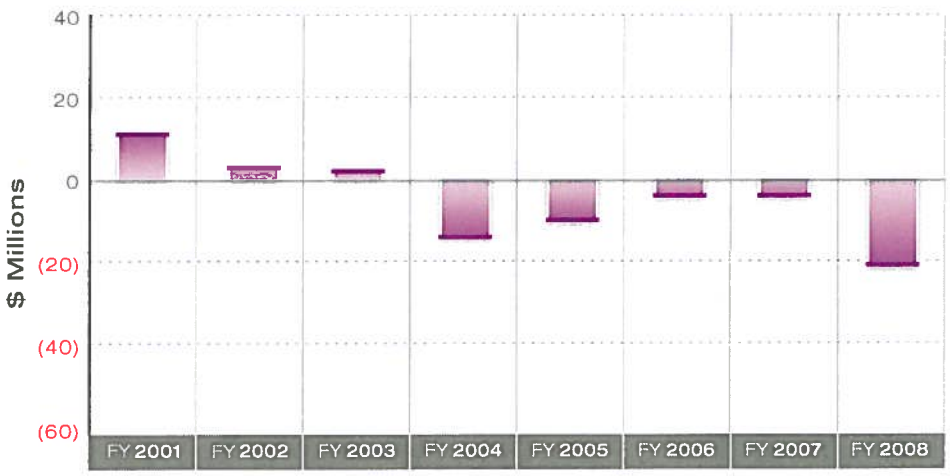
The service is contracted out to three vendors that carry an average of 5,800 riders per day throughout a service area that is defined by the system's fixed corridor routes, excluding commuter rail.

- Expenses increased 116% between FY01 and FY08 due primarily to ridership growth, increased vendor fees and fuel costs.
- To prevent fraud and promote efficiency, a variety of vendor payment methodologies have been tried since the program's inception in the late 1970s. The current contract (2009-2014) pays vendors on a per-trip basis.
- The total number of trips rose from 1.58M to 1.76M between FY07 and FY08. This growth is projected to continue as the population ages and funding is cut to other agencies that transport the disabled.

The Commuter Rail Expenses

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE NEGATIVE
$37 million



Commuter rail costs have more closely tracked the Finance Plan's projections than other expense categories because annual vendor increases were contractually fixed between FY03 and FY08. Nonetheless, it is among the MBTA's largest expense categories, growing by 43% between FY01 and FY08 - from $172.5M in FY01 to $247M by FY08.

Costs have grown under the recent three-year contract extension, which uses a different inflation methodology that more realistically accounts for the vendor's costs for maintaining the aging infrastructure and for the steel used for rail replacement. The growth in wages and health benefits for the vendor's mostly unionized employees has been comparable to the experience of the MBTA.

The 14 commuter rail lines typically carry 143,000 passengers on 491 trips each weekday.

- Annual ridership has doubled in 20 years—from 19.7M riders in 1990 to 39.7M in 2008—due in large part to system expansions required by the Central Artery/Tunnel Administrative Consent Order.
- Net costs per passenger mile ranged from $.47 on the Needham line to $9.25 on the Fairmount line.
- Operating costs ranked among the lowest of the 20 commuter rail peer systems, based on 2007 comparison data.

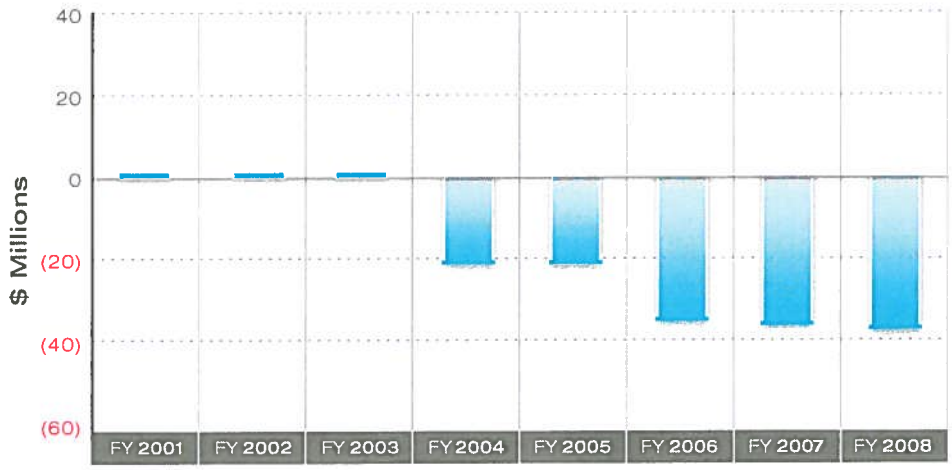
Revenue — A Mixed Result

Recognizing the reality that a certain level of state subsidy is necessary to sustain a transit system, Forward Funding dedicated 20% of statewide sales tax collections to the MBTA. At the same time, the MBTA was expected to increase its system-generated revenues from sources such as fares, parking, real estate and advertising. The following three charts compare FY01 through FY08 actual results to the Finance Plan's projections.

Sales Tax Revenue

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE NEGATIVE
$150 million



The Finance Plan projected that dedicated sales tax revenue would grow by 3% per year from FY01 through FY08.

- In reality, sales tax revenue grew only an average of 1% per year.
- This fell short of the Finance Plan target by a cumulative $460M.

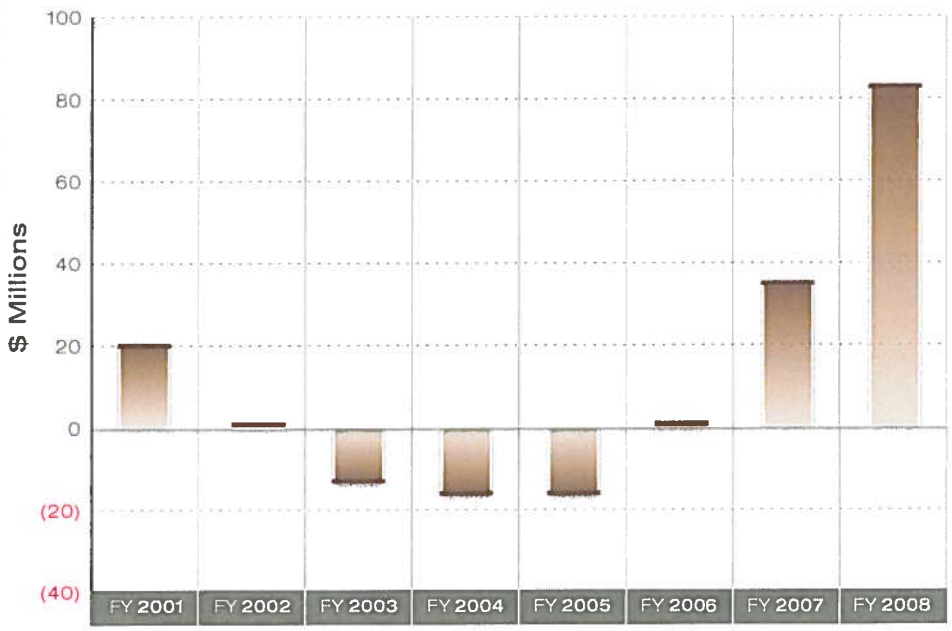
The shortfall in sales tax collections was not this dramatic, however, because the Forward Funding enabling legislation established a revenue floor for the MBTA in the event that sales tax revenue growth was diminished. As the chart shows, the difference between the 3% growth rate and the actual amount of sales tax revenue guaranteed by the enabling legislation was $150M short of the Finance Plan's expectations.

Despite widely held opinions, the shortfall in sales tax revenue has not by itself accounted for the MBTA's growing deficits, as evidenced by this review.

Transportation Revenue

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE POSITIVE
$95 million



One revenue source that performed better than Finance Plan expectations was transportation revenue.

- As a result of the three fare increases implemented since Forward Funding, transportation revenue was cumulatively $95 million better than Finance Plan projections.

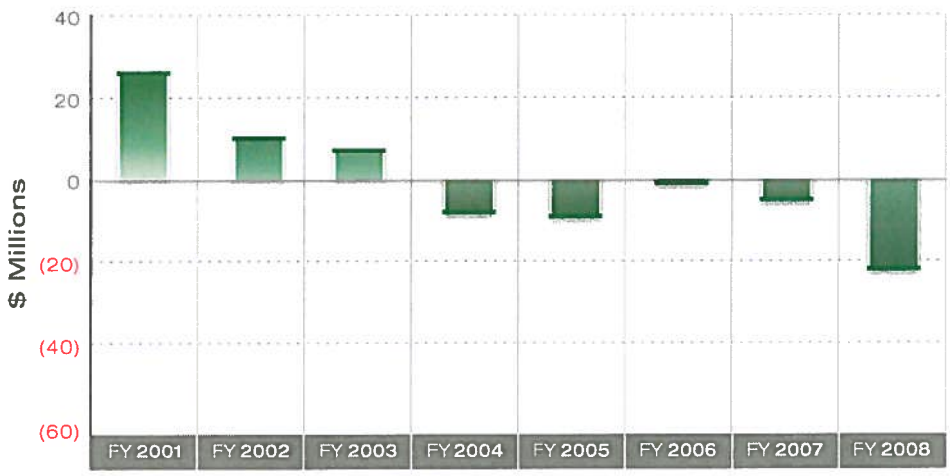
Fare increases implemented in 2001, 2004 and 2007 raised revenues consistent with the Finance Plan's timetable. The last fare hike actually exceeded the Plan's target, in part because ridership grew despite the fare hike.

Non-Operating Revenue

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE NEGATIVE

$2 million



Non-operating revenues, generated by sources such as advertising and real estate sales and leasing proceeds, exceeded Plan projections in the early years. These advertising and real estate gains helped to pay for some of the higher costs from other areas, but were too diminutive to make a great difference. Since FY04, non-operating revenues, with the exception of parking revenues, have been below expectations.

This negative trend accelerated in FY09 and will be negative for the next few years, as few prime properties are left to lease or sell. The sale of garages might generate one-time revenue but, after satisfying outstanding debt financing requirements, the loss of market-based parking revenues from these properties will not create a long-term gain and does not make a great incremental difference, considering the oncoming deficits.

The Real Picture

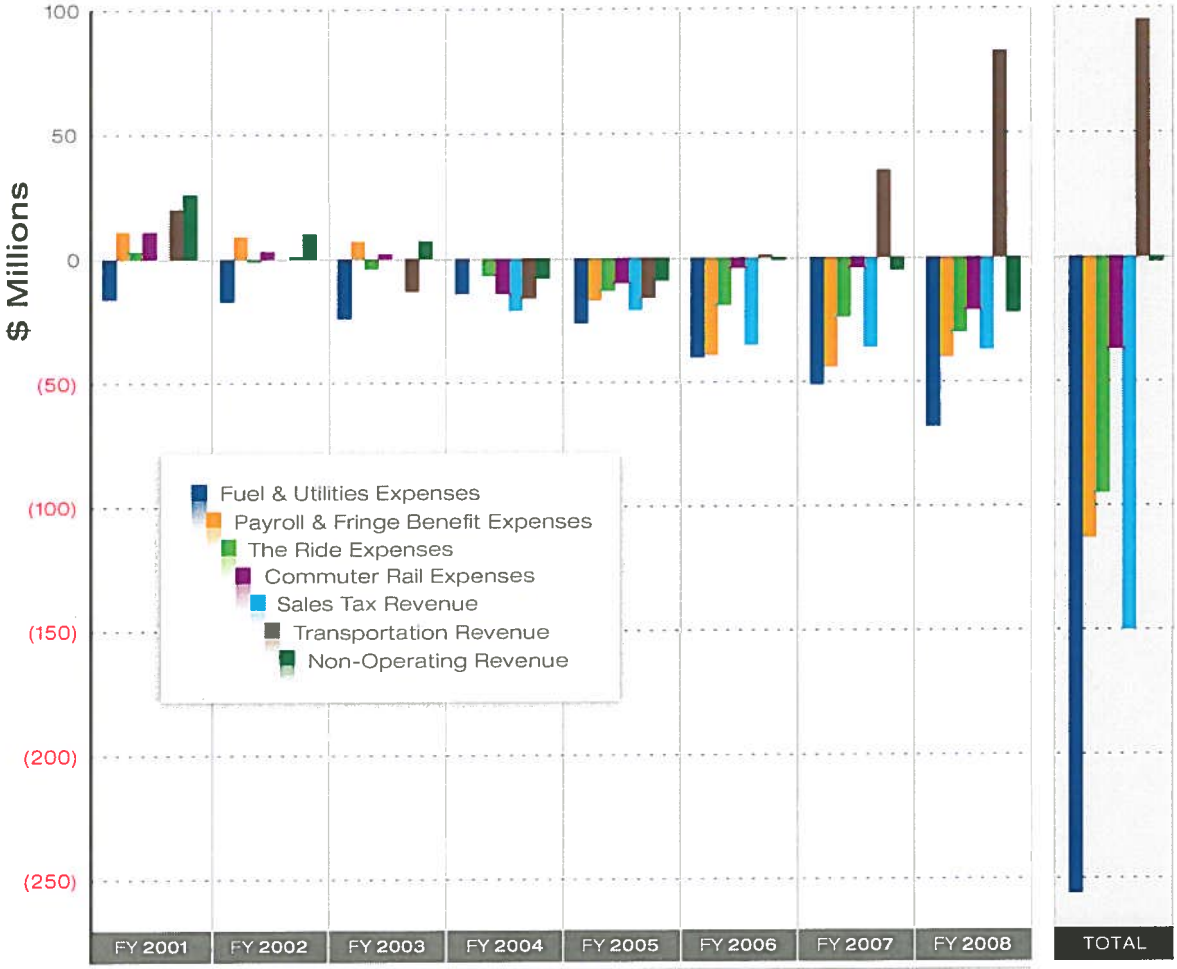
Cumulative Revenue & Expenses

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE NEGATIVE

$558 million

As the prior discussion demonstrates, MBTA operating costs have exceeded Finance Plan projections by $500M for the cost centers we highlighted, while revenues from all sources underperformed Finance Plan expectations by $58M. The combined effect has produced a cumulative variance of $558M against the Finance Plan for the first eight years under Forward Funding, as the following chart illustrates:



	Positive (negative) actual compared to Forward Funding Finance Plan ($ millions)								
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	TOTAL
Fuel & Utilities Expenses	(16)	(17)	(24)	(14)	(26)	(40)	(51)	(68)	(256)
Payroll & Benefit Expenses	11	9	7	0	(17)	(39)	(44)	(40)	(113)
The Ride Expenses	3	(1)	(4)	(7)	(13)	(19)	(24)	(30)	(95)
Commuter Rail Expenses	11	3	2	(14)	(10)	(4)	(4)	(21)	(37)
Sales Tax Revenue	0	0	0	(21)	(21)	(35)	(36)	(37)	(150)
Transportation Revenue	20	1	(13)	(16)	(16)	1	35	83	95
Non-Operating Revenue	26	10	7	(8)	(9)	(1)	(5)	(22)	(2)
									(558)

We acknowledge that the MBTA's costs are not easy to contain due to the unavoidable staffing and capital investment demanded by its size and antiquity. But even the kinds of savings that could have been found on the margins are now inadequate to rebalance the growing structural deficit.

The Bottom Line

A private sector firm faced with this mountain of red ink would likely fold or seek bankruptcy.

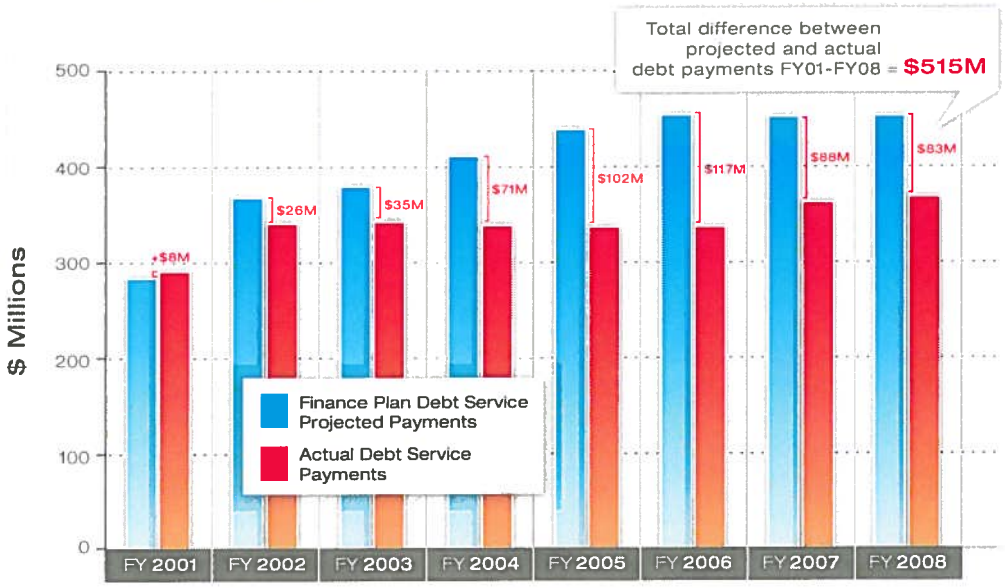
Debt Service to the Rescue — Temporarily

While there is little question that total debt for the MBTA is a problem, conventional wisdom holds that a major driver behind the MBTA's inability to be self-sufficient was the debt service payments. That is not true.

In fact, debt service payments between FY01 and FY08 were $515M lower than the Finance Plan's projections. This is demonstrated in the following chart, where the blue bars indicate the annual debt payments the MBTA committed to as part of the Finance Plan and red bars demonstrate the actual payments.

Debt Service Payments

Actual vs. Finance Plan
FY01–FY08



Various factors account for the difference between projected and actual debt service payments; primary among them was debt refinancing and restructuring, which effectively lowered each year's debt service payment obligations, particularly against Finance Plan projections.

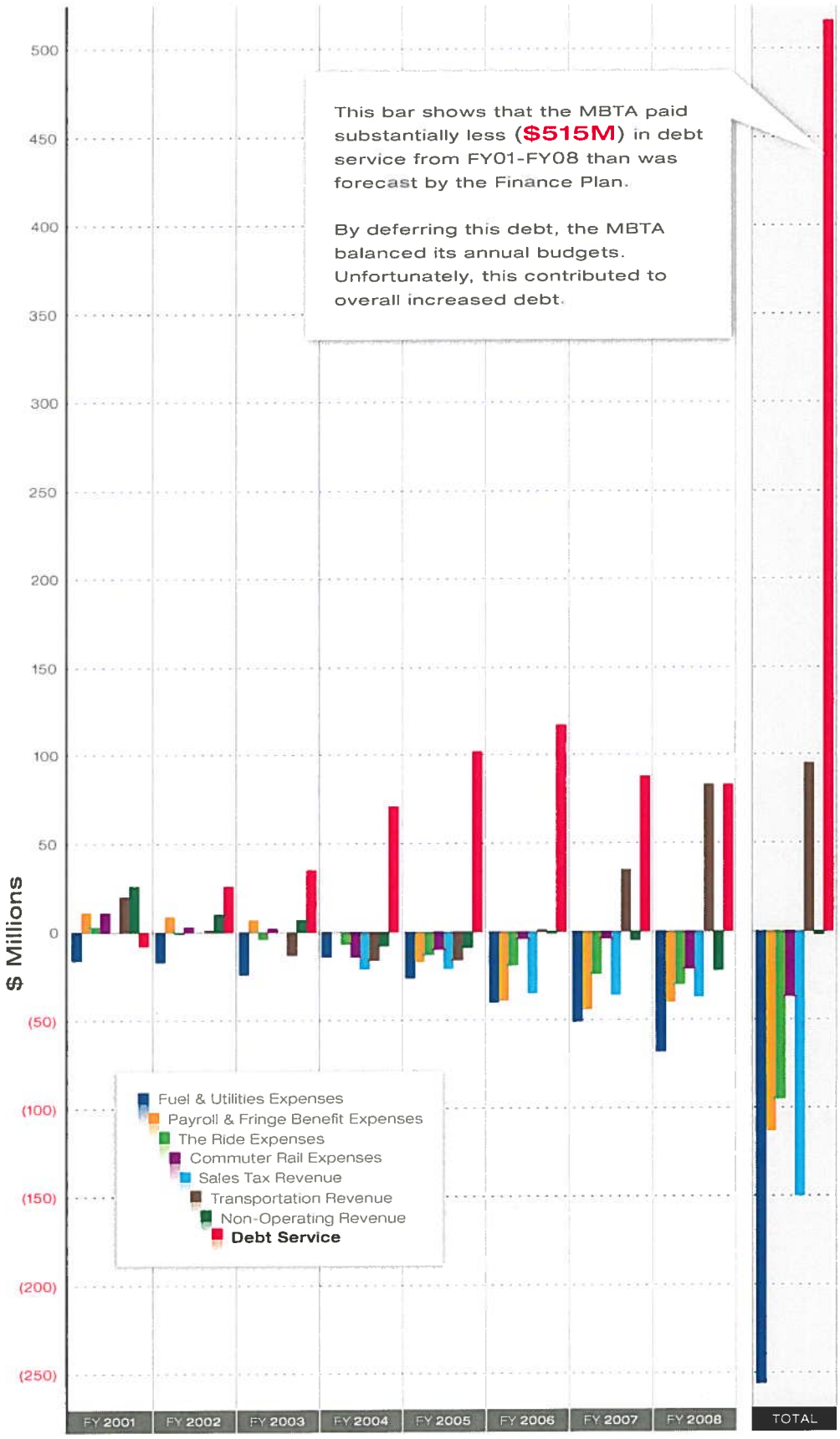
The chart and table on the following page display the variance between results and projections for debt service, operating costs and revenue sources. Without the benefit of the debt service "savings" shown as red bars on the chart, the Finance Plan would have been wholly unworkable as a road map to self-sufficiency.

Cumulative Revenue & Expenses with Debt Service

Actual vs. Finance Plan
FY01–FY08

CUMULATIVE NEGATIVE

$43 million



	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	TOTAL FY01-FY08
	Positive (negative) actual compared to Forward Funding Finance Plan ($ millions)								
Fuel & Utilities Expenses	(16)	(17)	(24)	(14)	(26)	(40)	(51)	(68)	(256)
Payroll Expenses	11	9	7	0	(17)	(39)	(44)	(40)	(113)
The Ride Expenses	3	(1)	(4)	(7)	(13)	(19)	(24)	(30)	(95)
Commuter Rail Expenses	11	3	2	(14)	(10)	(4)	(4)	(21)	(37)
Sales Tax Revenue	0	0	0	(21)	(21)	(35)	(36)	(37)	(150)
Transportation Revenue	20	1	(13)	(16)	(16)	1	35	83	95
Non-Operating Revenue	26	10	7	(8)	(9)	(1)	(5)	(22)	(2)
Cumulative Deficit	55	5	(25)	(80)	(112)	(137)	(129)	(135)	(558)
Debt Service	(8)	26	35	71	102	117	88	83	515
								TOTAL:	(43)

The bottom row of the preceding table displays the amounts saved each year against Finance Plan projections. The cumulative effect of these savings is compared with the cumulative growth of operating costs and underperforming revenues.

Debt — The Faustian Bargain

The Finance Plan explicitly cautioned the MBTA against accruing excessive debt: **"...relying entirely on debt to fund the non-federal share of the Authority's Capital Program is no longer sustainable under Forward Funding."**

The Finance Plan also warned against excessive debt restructuring:

"The Authority can achieve some of its liquidity and capital financing objectives in the near term by restructuring a portion of its Prior Obligations debt service. However this technique defers debt service to future periods and burdens the Authority's operations with substantial additional interest payments. This technique must be used judiciously as extensive use of debt restructuring will cause future debt service to consume larger percentages of each fare dollar."

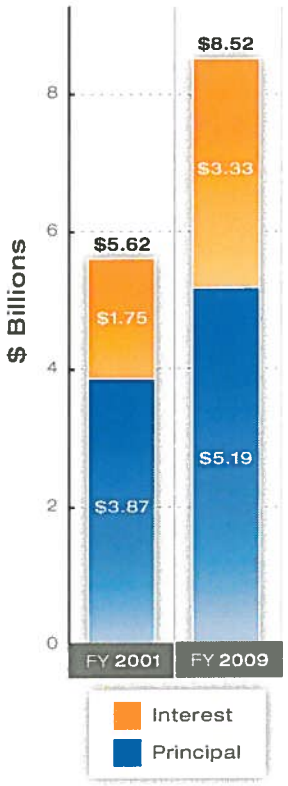
Both admonitions were prophetic.

MBTA debt finances are exactly opposite the position advocated by the Finance Plan, as if these warnings had never been issued.

Both admonitions were prophetic. MBTA debt finances are exactly opposite the position advocated by the Finance Plan, as if these warnings had never been issued.

Total Outstanding Debt

FY01 & FY09



The Finance Plan assumed the MBTA would rapidly amortize the $5.62B in outstanding principal and interest that it had inherited from the State, known as "Prior Obligation" debt. As this amount was repaid, corresponding debt service payments would shrink, thus freeing up resources to invest in the Pay-as-You-Go capital program known as PAYGO. The chart at left compares outstanding debt at the beginning of Forward Funding with what is currently owed.

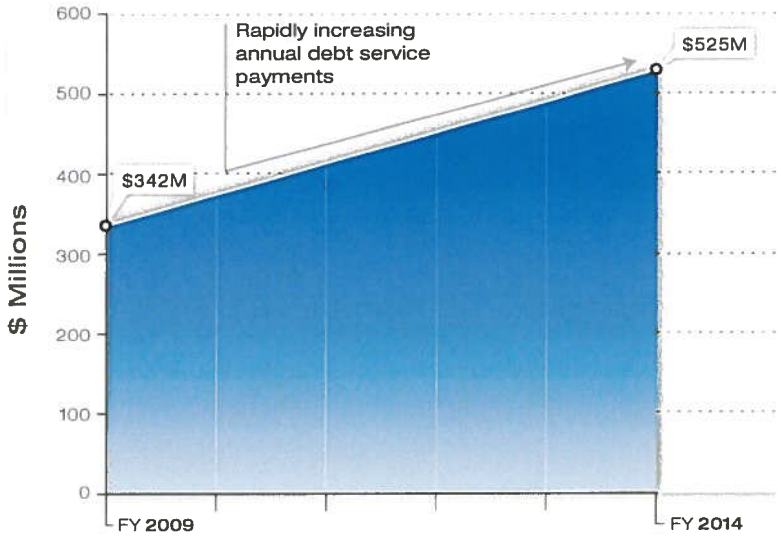
Over the decade, the MBTA was able to amortize roughly 60% of the Prior Obligation principal to $1.6B, but this was offset by substantial new borrowing for the capital program, in direct contradiction to the Finance Plan's first warning. This new borrowing proved necessary because the Finance Plan made two unrealistic assumptions: that the MBTA could afford the Finance Plan's higher debt service payments, and that the Plan's projected higher revenues and reduced operating costs would materialize to generate cash surpluses that would wean the MBTA from long-term borrowing.

As noted in the last section, debt service payments between FY01 and FY08 were $515M lower than the Finance Plan had projected. Reduced payments were economical when $169.5M in debt was refinanced to take advantage of lower interest rates. Reduced payments were simply expedient when debt was restructured to paper over structural deficits by deferring principal and interest payments into the future. In FY07, FY08 and FY09, approximately $238M in debt service was restructured, leaving the problem of paying for that deferral to another year's budget.

The Finance Plan's second warning was ignored as well, as extreme debt restructuring in recent years has contributed to a spike in debt service. The FY10 budget deficit was largely attributable to a $103M growth in debt service payments by growing from $341.8M in FY09 to $445.3M in FY10. By FY14, the full effect of deferring principal and interest payments will be felt when debt service is projected to reach $525M.

Annual Debt Service Payments

FY09–FY14



Further impacting this growing debt service burden is the need to increase the MBTA capital spending target by $224M per year to address infrastructure issues.

While the MBTA's structural operating deficit and burgeoning debt are certainly of grave concern, equally important and directly related to the failed promise of Forward Funding is the issue of the physical condition of the MBTA's many physical assets—from trains to tracks to tunnels.

At Risk — System Safety & Reliability

The MBTA has accomplished many impressive achievements in enhancing safety and service, yet the fact remains that it is dealing with an extensive, aging infrastructure that requires continuous maintenance, refurbishment and replacement. Unfortunately, the cost of the projects required to address these concerns far exceeds the MBTA's capital improvement budget, which is constrained by the structural deficit discussed in the previous section. **As a result, many projects that would address critical safety or system reliability issues are not funded each year.**

State of Good Repair

The MBTA and transit systems across the country have adopted the "State of Good Repair" (SGR) standard to determine how much capital is required to maintain and/or replace existing infrastructure.

State of Good Repair

"...a standard wherein all capital assets are **functioning at their ideal capacity within their design life**"

The definition used by the MBTA for a State of Good Repair is "a standard wherein all capital assets are functioning at their ideal capacity within their design life"—or said differently, "Maintain the assets so they perform as they should."

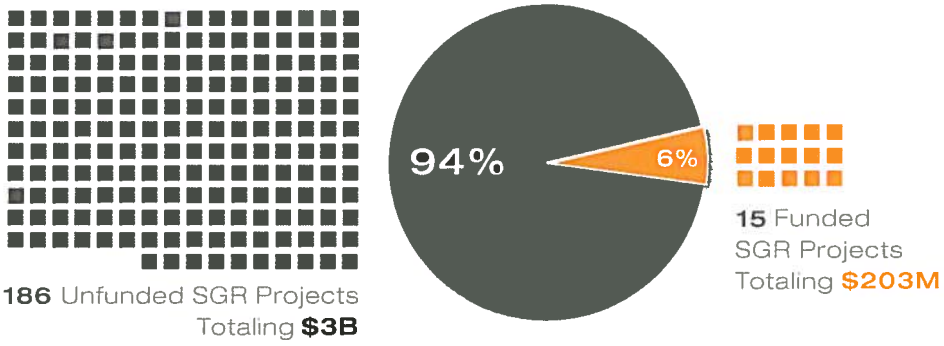
For FY10, over $3B worth of projects were identified by the MBTA as needed to address SGR issues. Only 15 of those 201 projects totaling $203M were funded. In other words, all but 6% of what was requested to address SGR issues went unfunded.

SGR Project Funding Requests

FY10

FUNDING REQUESTED
$3.2B

FUNDING GRANTED
$203M



Examples of SGR projects that went unfunded range from rehabbing bridges to replacing the stairways to the Newtonville station platform; from replacing the backup power generator turbines to repairing system-wide tunnel lighting; from overhauling the journal bearings on Orange Line cars to replacing 60-year-old cable.

A Large and Growing Backlog

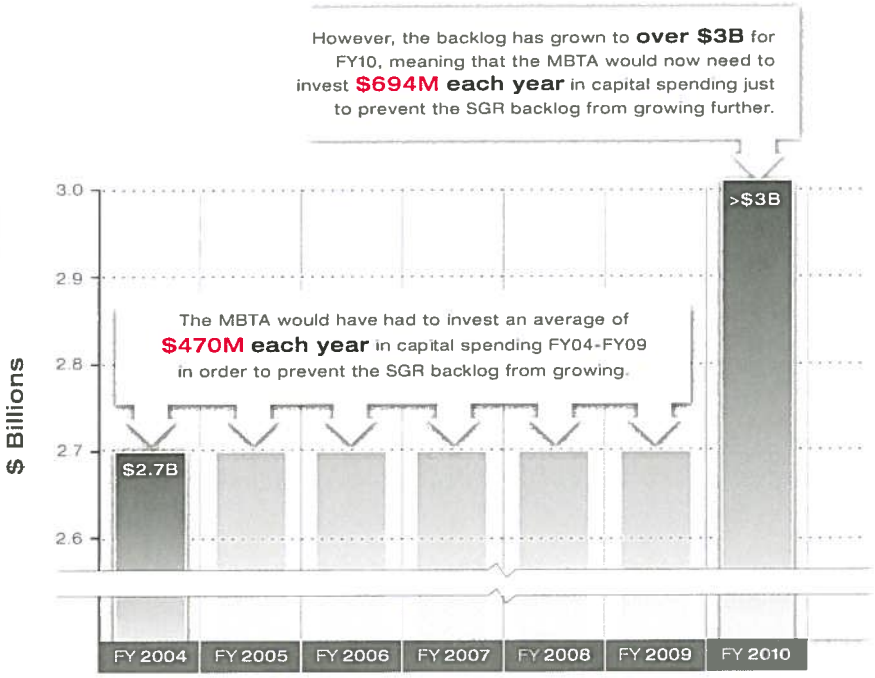
Since the current capital planning process was implemented in 2001, the MBTA has invested between $246M and $594M each year towards SGR projects.

As of 2004, the backlog of SGR projects totaled $2.7B. To prevent the SGR backlog from growing larger, $470M in capital spending was needed annually. The approach has been "we may not be able to spend $2.7B and eliminate the SGR backlog, but at least it is not getting worse."

It is getting worse.

The MBTA maintains an SGR database to capture information on all of its capital assets. The most recent update of the database indicates that the SGR backlog exceeds $3B and the annual allocation needed to prevent it from growing larger will be $694M, $224M more than the annual level of recent years.

SGR Backlog
FY04 & FY10



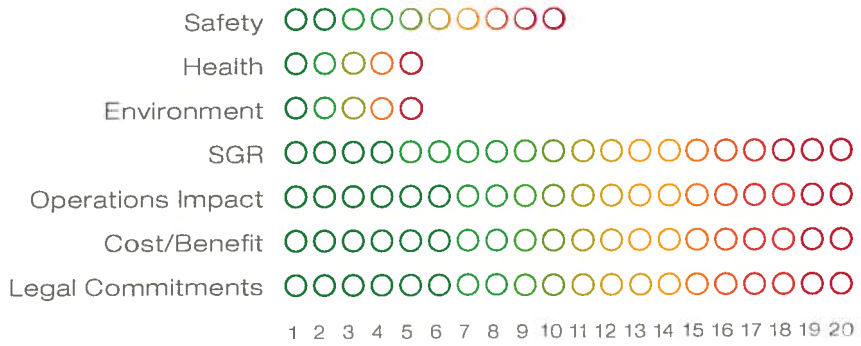
The MBTA can only fund a small portion of the immense backlog of projects annually, given its structural operating deficit. Each year, all capital project requests, including those addressing SGR, are prioritized and submitted by each MBTA department to the MBTA Budget Department for consideration as part of the annual Capital Investment Program (CIP).

To determine which projects receive funding, each submission is scored by the Budget Department against predetermined criteria. The entire list of projects, with their scores and associated costs, is reviewed by the Authority's management to determine which ones will receive funding.

Each proposed capital improvement project is given a score by the Budget Department, with the maximum score being 100. The scoring criteria allots these maximum points for the following categories:

Capital Investment Program (CIP) Scoring Criteria

Low Priority ← → Critical



Unfunded But Critical Safety Projects

Safety Criterion

"Project corrects an existing safety-oriented deficiency. **A critical project must demonstrate imminent danger to life or limb of passengers and/or employees."**

Given the MBTA's budget for all capital improvement projects, there are many projects that are not funded even though they address urgent safety issues.

For the FY10 budget cycle, there were 57 projects, totaling $590M, that scored a "10" on safety, the highest possible value for that criterion. However, only six of those projects, totaling $47.2M, were funded. **In other words, $543M in safety-critical projects are NOT being funded.**

Safety "Level 10" Project Funding Requests

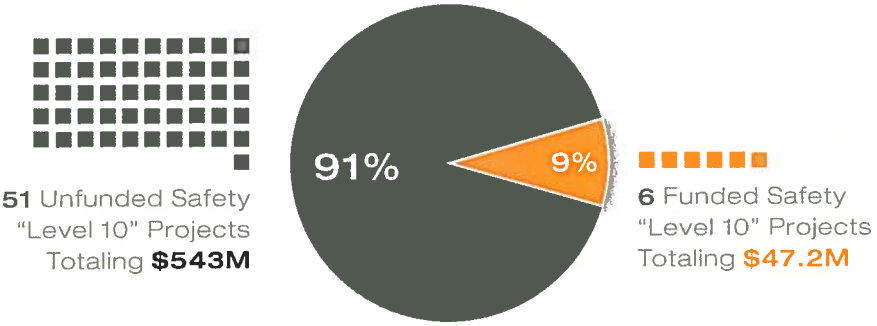
FY10

FUNDING REQUESTED

$590M

FUNDING GRANTED

$47.2M



51 Unfunded Safety "Level 10" Projects Totaling **$543M**

6 Funded Safety "Level 10" Projects Totaling **$47.2M**

Alewife to Harvard

The Alewife/Harvard Project has been proposed and unfunded for three straight years as conditions worsen.

In addition to the potential of derailment, if the situation exacerbates, speed along that portion of the Red Line could slow to 10 mph. This will have a residual service impact with delays along the entire Red Line.

One example of an unfunded project that received the maximum safety score of "10" is the floating slabs and tunnel leak repair project between Alewife and Harvard stations on the Red Line.

This $80M project involves the complete removal and replacement of the existing system of floating concrete slabs beneath the Red Line tracks from Alewife to Harvard stations. "Floating" slabs rest atop a series of rubber disks that are designed to absorb the vibration of a train as it travels along the track.

Water leaking through the tunnel walls is creating several problems:

- The leaking water is deteriorating the slabs themselves, causing sinking and misalignment of some slabs.
- The water is corroding the fasteners that attach the track to the concrete.
- In some areas, the fasteners are no longer holding the track in place, causing track to move out of alignment and presenting the possibility of train derailment.
- In addition, the water is corroding the signal system along the track and compromising the cable and wire conduits.

The MBTA Fleet: Aging, Underfunded & Underperforming

State of Good Repair Criterion

"Project proposed must replace or renew an asset that is currently over-age or approaching its useful life. Project receives a score based on the degree to which the asset is overdue for replacement/renewal."

The MBTA's trains, subway cars and buses provide 1.2 million rider trips each weekday. Maintaining the fleet is a Herculean and expensive task, particularly since it is aging and many vehicles are due for overhauls or replacement. Many vehicle-related projects score high in the SGR category, but due to their extraordinary cost, are not getting funded. There is a direct connection between this issue and breakdowns and service delays.

- Industry standards define the "useful life" for each type of vehicle in the MBTA fleet. These guidelines recommend when vehicles should receive mid-life overhauls to assure safety and optimal performance, as well as when they should be retired and replaced. **As the chart on the next page illustrates, a large concentration of MBTA vehicles are either approaching or have already surpassed their useful life.** Wholesale replacement of such a large number of vehicles is extraordinarily expensive and also results in less funds available for maintenance of vehicles still in service.
- In many instances the MTBA cannot complete a major overhaul of certain vehicles due to limited funding. Instead they will do a partial overhaul of specific systems, such as suspension and braking, which doesn't address all the maintenance necessary to ensure optimal performance.

The following chart illustrates the age and useful life of each type of vehicle in the MBTA fleet.

MBTA Fleet Age & Useful Life

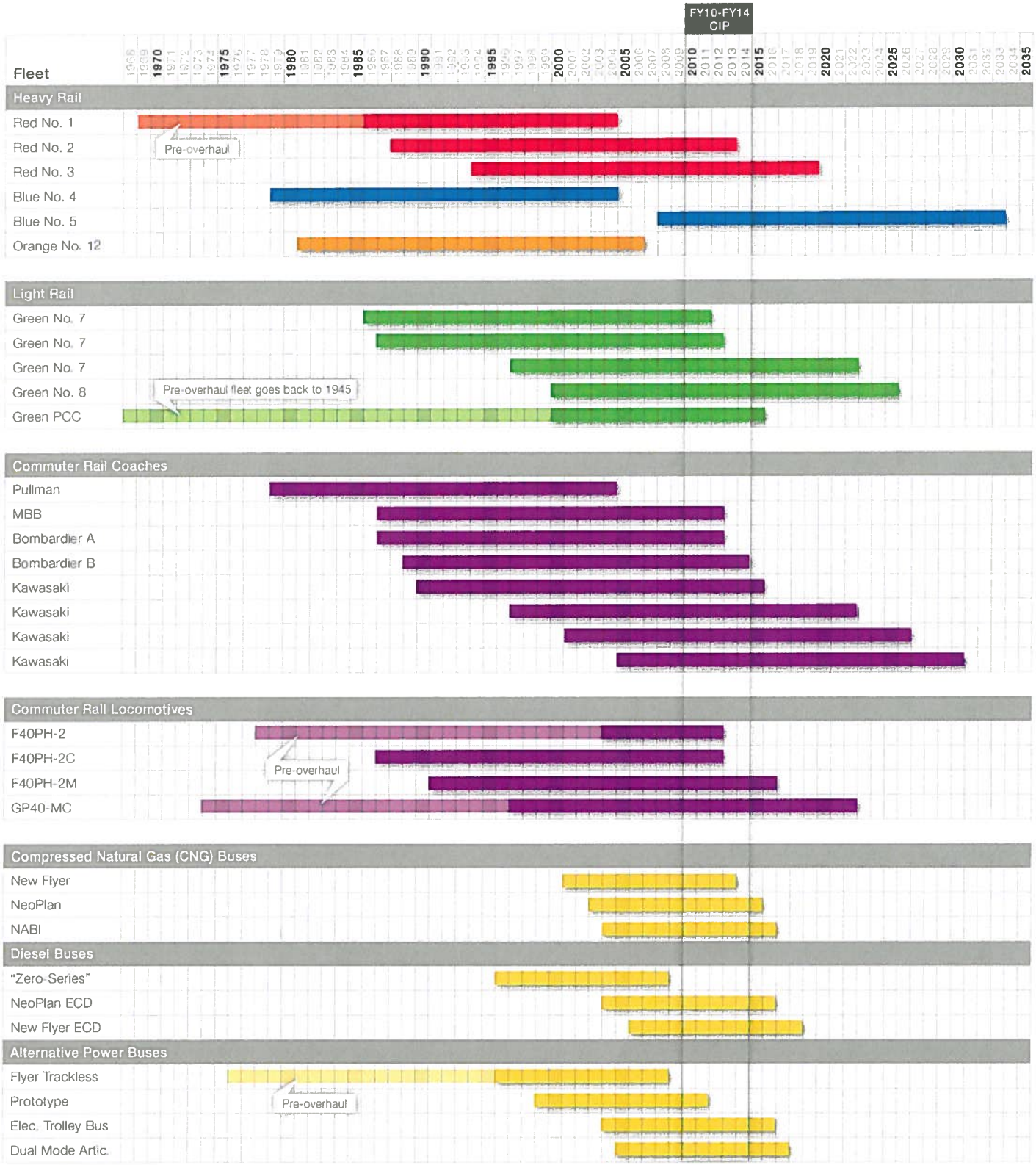
Line/Mode	Fleet	Qty.	Service Date	Age (yrs)	Useful Life
Heavy Rail					
Red	No. 1 Fleet	74	1969	40	25
	No. 2 Fleet	58	1988	21	25
	No. 3 Fleet	86	1994	15	25
Blue	No. 4 Fleet	18	1979	30	25
	No. 5 Fleet	92	2008-09	1	25
Orange	No. 12 Fleet	120	1981	28	25
	Total Number of Heavy Rail Cars	**448**			
Light Rail					
Green	No. 7 Fleet	48	1986-87	23-22	25
	No. 7 Fleet	46	1987-88	22-21	25
	No. 7 Fleet	20	1997	12	25
	No. 8 Fleet	95	2000-06	9-3	25
	PCC Cars	10	1945-46	64-63	25
	Total Number of Light Rail Cars	**219**			
Commuter Rail Coaches					
CR	Pullman Coaches	57	1979	30	25
	MBB Coaches	67	1987-88	22-21	25
	Bombardier A Cars	40	1987	22	25
	Bombardier B Cars	106	1989-90	20-19	25
	Double-Decker Kawasaki Coaches	75	1990-91	19-18	25
	Double-Decker Kawasaki Coaches	17	1997-98	12-11	25
	Double-Decker Kawasaki Coaches	15	2001	8	25
	Double-Decker Kawasaki Coaches	33	2005-06	4-3	25
	Total Number of Coaches	**410**			
Commuter Rail Locomotives					
CR	F40PH-2 Locomotives	18	1978-80	31-29	25
	F40PH-2C Locomotives	25	1987-88	22-21	25
	F40PH-2M Locomotives	12	1991, 93	18-16	25
	GP40-MC Locomotives (Remanufactured)	25	1997-98	12-11	25
	Total Number of Locomotives	**80**			
Compressed Natural Gas (CNG) Buses					
Bus	New Flyer CNG 40-ft	17	2001-02	8-7	12
	NeoPlan CNG 60-ft (a)	44	2003	6	12
	NABI CNG 40-ft	299	2004	5	12
Diesel Buses					
Bus	"Zero-Series" 40-ft	110	1995	14	12
	NeoPlan ECD 40-ft	193	2004	5	12
	New Flyer ECD 40-ft	310	2006-08	3-1	12
Alternative Power Buses					
Bus	Flyer Trackless Trolleys	5	1976	33	15
	Prototype Alternative-Fuel	2	1999	10	12
	Electric Trolley Buses	28	2004	5	15
	Dual Mode Articulate 60-ft (b)	32	2005-06	4-3	12
	Total Number of Buses	**1,040**			

FTA USEFUL LIFE PARAMETERS:

Rail vehicles: at least 25 years

Large, heavy-duty transit buses: at least 12 years of service or an accumulation of at least 500,000 miles.

Fixed guideway electric trolley-bus with rubber tires obtaining power from overhead catenary: at least 15 years.


FY10-FY14 CIP
Fleet
1970
1975
1980
1985
1990
1995
2000
2005
2010
2015
2020
2025
2030
2035
Heavy Rail
Red No. 1
Red No. 2
Red No. 3
Blue No. 4
Blue No. 5
Orange No. 12
Pre-overhaul
Light Rail
Green No. 7
Green No. 7
Green No. 7
Green No. 8
Green PCC
Pre-overhaul fleet goes back to 1945
Commuter Rail Coaches
Pullman
MBB
Bombardier A
Bombardier B
Kawasaki
Kawasaki
Kawasaki
Kawasaki
Commuter Rail Locomotives
F40PH-2
F40PH-2C
F40PH-2M
GP40-MC
Pre-overhaul
Compressed Natural Gas (CNG) Buses
New Flyer
NeoPlan
NABI
Diesel Buses
"Zero-Series"
NeoPlan ECD
New Flyer ECD
Alternative Power Buses
Flyer Trackless
Prototype
Elec. Trolley Bus
Dual Mode Artic.
Pre-overhaul

Surprises

It stands to reason that an aging, complex and underfunded transportation system will have to confront unpleasant surprises that can result in safety hazards and service delays.

Red Line Fire Surprise

The MBTA will require approximately **$140 million** to replace the aging cable and that money will be diverted from other projects.

A recent issue on the Red Line, when a fire erupted from old cable, illustrates such a situation. Buried under wet muck, the aging cable caught fire, resulting in a shutdown of Red Line service during rush hour. Buses and drivers were called into service—some pulled from spare inventory that was available to be deployed and some pulled off of existing routes in order to service passengers on the Red Line. This resulted in diminished service along some bus routes so that bus passengers, in addition to Red Line passengers, were unhappy and inconvenienced.

A visible and well-publicized incident such as this one demands immediate attention and action. Fixing this problem becomes a priority that supersedes previously approved projects. The MBTA will require approximately $140M to replace the aging cable, and that money will be diverted from other projects such as overhauling vehicles.

Looking to the future, in spite of the MBTA's best efforts to tackle those capital repairs and improvements it deems most pressing, it is virtually guaranteed that issues will arise that will require diverting allocated funding to address problems that demand immediate attention, including the hundreds of capital projects that are awaiting funding.

Ensuring Safety and Reliability

In order to maintain a system that is safe and reliable for its riders, the MBTA will have no choice but to devote significant funds to capital maintenance and improvement in years to come.

Review Summary

Backward Funding – Déjà Vu

The net result of the Forward Funding experiment is that the MBTA has come full circle, with staggering debt, burgeoning deficits and "hat in hand." The MBTA is again in Backward Funding mode.

The transfer of $160M this summer to close the MBTA's FY10 budget deficit marked a return to "backward funding."

In 2000, Forward Funding was intended to end chronic deficit spending by providing the MBTA with the tools, including dedicated revenues, to achieve self-sufficiency. A decade later, our analysis indicates that the promise of Forward Funding could not succeed as costs grew inexorably, revenues proved inadequate and the need to sustain capital investment outgrew the MBTA's ability to "live within its means." The Finance Plan that was devised to implement the goal of self-sufficiency was well intentioned, but founded upon a combination of optimistic, unrealistic and untested assumptions.

Critics may argue that the MBTA did not "try hard enough" to embrace Forward Funding because it failed to control the growth of operating costs. These costs indeed grew by a cumulative half-billion dollars more than the Finance Plan had anticipated between FY01 and FY08, and their continuing growth defines the deepening structural deficits of the next five years.

The Finance Plan substantially underestimated the system's cost drivers, both for costs within the MBTA's control, such as wages, but especially for costs outside its control, such as energy, health insurance and contracted services like commuter rail and The Ride.

Contrary to not trying, we found evidence that the MBTA did make some hard expense choices. Across-the-board cuts were routinely made to departmental budgets. Periodic layoffs and hiring freezes restrained the headcount. Individual managers took pride in eliminating inefficiencies and redundancies, while embracing a new organizational ethic of customer service. Yet in the end, they could not pare staff below the number needed to move hundreds of thousands of riders across hundreds of routes each workday. Add the complexity and cost of sustaining the system's aging infrastructure, and it became evident that the cost inflation and savings assumptions in the Finance Plan were never tested against the daily grind.

Several studies have proposed that the debt the MBTA inherited from the State, and resulting debt service, are the primary reasons for the MBTA's failure to thrive under Forward Funding. Yet as we learned, debt service payments were much lower than projected over the decade because it was frequently refinanced and restructured. If any decision by the MBTA is worth second-guessing, it was the repeated deferral of principal and interest payments into a future that now looks even harder to fix, given the growing structural deficit.

Assuming present trends continue, the deficit in FY14 could exceed $300M, or $160M less if this year's lifeline remains available. This deficit will be exacerbated by the imperative to finance the multi-billion-dollar backlog of capital projects, most of which is categorized as State of Good Repair investments. To grow capital spending from $470M to $694M per year in order to whittle down a $3B SGR projects list, not to mention $2B in other capital needs, will require $130M more to cover annual debt service payments ten years from now. Yet, failing to invest in these expensive maintenance and replacement projects will jeopardize the system's safety, reliability and service to the regional economy.

We were asked to conduct a "frank assessment" of what's gone right and what's gone wrong with the MBTA. Our review has concluded that the choices ahead are difficult and stark. Stakeholders and decision makers will need to accept the reality that extremely difficult decisions must be made by the new governance structure created for the MBTA and other agencies by the Transportation Reform Act.

Why Is the MBTA So Important?

In the over-used jargon of our times, the MBTA is "Too Big to Fail"

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. 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. The MBTA has played an integral role in the development of Boston and surrounding cities and towns for more than a century, and on an average weekday over 1.2 million trips are made on the subways, buses, commuter trains and other services that make up the system.

- The MBTA provides access to job markets for Massachusetts residents and a larger employment pool for Massachusetts businesses, while at the same time removing cars from the highway system.
- Transit-oriented commercial and residential development, supported by a steady stream of pedestrians and MBTA riders, is being used as a tool to encourage business growth, to revitalize declining urban neighborhoods and to enhance tax revenues for cities and towns.
- Investments in the MBTA system lead to a chain reaction in business activity that far exceeds the initial investment. Whether a capital investment or transit operation project, thousands of jobs in a wide array of industries are created each year as a result of investments in the MBTA.
- Allowing Eastern Massachusetts to gain a widespread reputation for having a remarkably inefficient and unsafe system would eventually be devastating for the economy and for Massachusetts.

General Recommendations — No Quick Fixes

There are no "quick fixes" to this myriad of issues. While we were not asked to provide specific recommendations, there are some general ones that we would suggest:

Properly Prioritize Safety Issues

- A high-level MassDOT examination of safety and capital projects is in order. With 51 projects classified as "a danger to life or limb of passengers and/or employees," prioritizing these projects against public safety needs is imperative. It may require an extended period to address them properly, but what could be more important?

Make Expenses Transparent

- There is no question that the MBTA is an expensive and complex system. It requires large expenditures just to continue operating. Any thought that these problems can be addressed primarily through expense reductions is misguided. However, MassDOT should require more transparency in these expenses, so there is better control and more oversight in their uses.

Reexamine Debt

- The underlying debt issues should be reexamined in the context of this review's findings. In addition, the MBTA should not be able to enter into new debt obligations without MassDOT oversight.

Slow Expansion

- It makes little sense to continue expanding the system when the MBTA cannot maintain the existing one. Slow expansion until the safety and maintenance priorities can be addressed.

Develop Secure New Revenue Sources

- If there is any chance for the MBTA to begin to close its deficit gap, there is little question that **secure** new revenue sources will have to be developed over time.

Improve Safety and Service Before Increasing Fares

- The only major long-term operational success of Forward Funding is the fact that the riding public paid three fare increases in the last eight years. That resulted in a cumulative $95M gain. Asking that same public in 2010 for yet another fare increase because Forward Funding did not work defies credibility. The riding public deserves to have tangible evidence that the MBTA is improving safety and service—not deteriorating further.

Acknowledgments

MBTA officials and employees were particularly helpful and worked diligently to answer our questions.

It is important to point out there have been many excellent reports about the MBTA and other transportation systems in recent years, including but not limited to those conducted by:

- MBTA Advisory Board
- Massachusetts Taxpayers Foundation
- 2007 Transportation Finance Commission
- MASSPIRG Education Fund
- Pioneer Institute
- U.S. Department of Transportation
- American Public Transportation Association
- MBTA Blue Ribbon Commission

Most of the data utilized in our analysis was data provided by the MBTA. A complete listing of source materials can be found in the following reference materials list.

Reference Materials

References

Documents and reports reviewed for this report are listed below. Additional information too voluminous to reference was also consulted, including spreadsheets, personnel manuals, contracts, organizational charts and budget materials.

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Report Design: Christina Van Vleck

TAB B

Massachusetts Bay Transportation Authority
Net Parking Revenue

	FY10	FY11
Group Parking		
Total Revenue	$37,598,810	$38,138,350
Total Expense (see below for detail)	(8,149,340)	(8,686,887)
Net Parking by Groups	29,449,470	29,451,463
Other Parking	857,504	728,743
Grand Total Parking	$30,306,974	$30,180,206
Expenses by Category		
Management Fees	(6,198,518)	(6,296,729)
Reimbursable Costs	(602,882)	(568,394)
Snow Removal Costs	(1,347,941)	(1,825,084)
Total Expenses by Category	($8,149,340)	($8,690,208)

TAB C

Mass Highway Department
WEEKLY SUMMARY FOR LANE 1
Starting: 4/26/2010

STA. 8

Site Reference: 000000000575
Site ID: 000000000008
Location: I-93 CARPOOL LANE SB @ ENFORCEMENT AREA
Direction: SOUTH

File: 8.prn
City: BOSTON
County:

TIME	MON 26	TUE 27	WED 28	THU 29	FRI 30	WKDAY AVG	SAT 1	SUN 2	WEEK AVG	TOTAL
01:00	0	0	0	0	0	0	30	44	10	74
02:00	0	0	0	0	0	0	14	17	4	31
03:00	0	0	0	0	0	0	4	6	1	10
04:00	0	0	0	0	0	0	3	3	0	6
05:00	1	0	0	4	0	1	13	10	4	28
06:00	562	474	427	481	467	482	84	31	360	2526
07:00	737	603	623	658	657	655	178	95	507	3551
08:00	708	709	739	764	759	735	280		659	3959
09:00	874	772	826	764	785	804	481		750	4502
10:00	681	798	765	695	647	717	721		717	4307
11:00	668	1300	866	879	813	905	679		867	5205
12:00	500	557	579	632	718	597	760		624	3746
13:00	457	517	485	608	664	546	988		619	3719
14:00	486	534	545	633	702	580	847		624	3747
15:00	588	685	641	727	929	714	807		729	4377
16:00	894	790	738	839	1036	859	821		853	5118
17:00	833	906	960	926	974	919	860		909	5459
18:00	1043	1086	1027	1074	1086	1063	803		1019	6119
19:00	795	961	1025	912	962	931	764		903	5419
20:00	400	421	451	553	697	504	596		519	3118
21:00	233	199	208	294	383	263	333		275	1650
22:00	158	160	189	200	287	198	278		212	1272
23:00	102	103	124	195	229	150	263		169	1016
24:00	0	0	0	0	129	25	155		47	284
TOTALS	10720	11575	11218	11838	12924	11648	10762	206	11381	69243
% AVG WKDY	92	99.3	96.3	101.6	110.9		92.3	1.7		
% AVG WEEK	94.1	101.7	98.5	104	113.5		94.5	1.8		
AM Times	09:00	11:00	11:00	11:00	11:00	11:00	12:00	07:00	11:00	
AM Peaks	874	1300	866	879	813	905	760	95	867	
PM Times	18:00	18:00	18:00	18:00	18:00	18:00	13:00		18:00	
PM Peaks	1043	1086	1027	1074	1086	1063	988		1019	

Mass Highway Department
WEEKLY SUMMARY FOR LANE 1
Starting: 4/25/2010

STA.8

Site Reference: 000000000575
Site ID: 000000000008
Location: I-93 CARPOOL LANE SB @ ENFORCEMENT AREA
Direction: SOUTH

File: 8.prn
City: BOSTON
County:

TIME	MON	TUE	WED	THU	FRI	WKDAY AVG	SAT	SUN 25	WEEK AVG	TOTAL
01:00										0
02:00										0
03:00										0
04:00										0
05:00										0
06:00										0
07:00										0
08:00								93	93	93
09:00								206	206	206
10:00								424	424	424
11:00								588	588	588
12:00								769	769	769
13:00								896	896	896
14:00								768	768	768
15:00								751	751	751
16:00								795	795	795
17:00								739	739	739
18:00								709	709	709
19:00								603	603	603
20:00								456	456	456
21:00								263	263	263
22:00								176	176	176
23:00								49	49	49
24:00								1	1	1
TOTALS	0	0	0	0	0	0	0	8286	8286	8286
% AVG WKDY										
% AVG WEEK								100		
AM Times								12:00	12:00	
AM Peaks								769	769	
PM Times								13:00	13:00	
PM Peaks								896	896	

TAB D

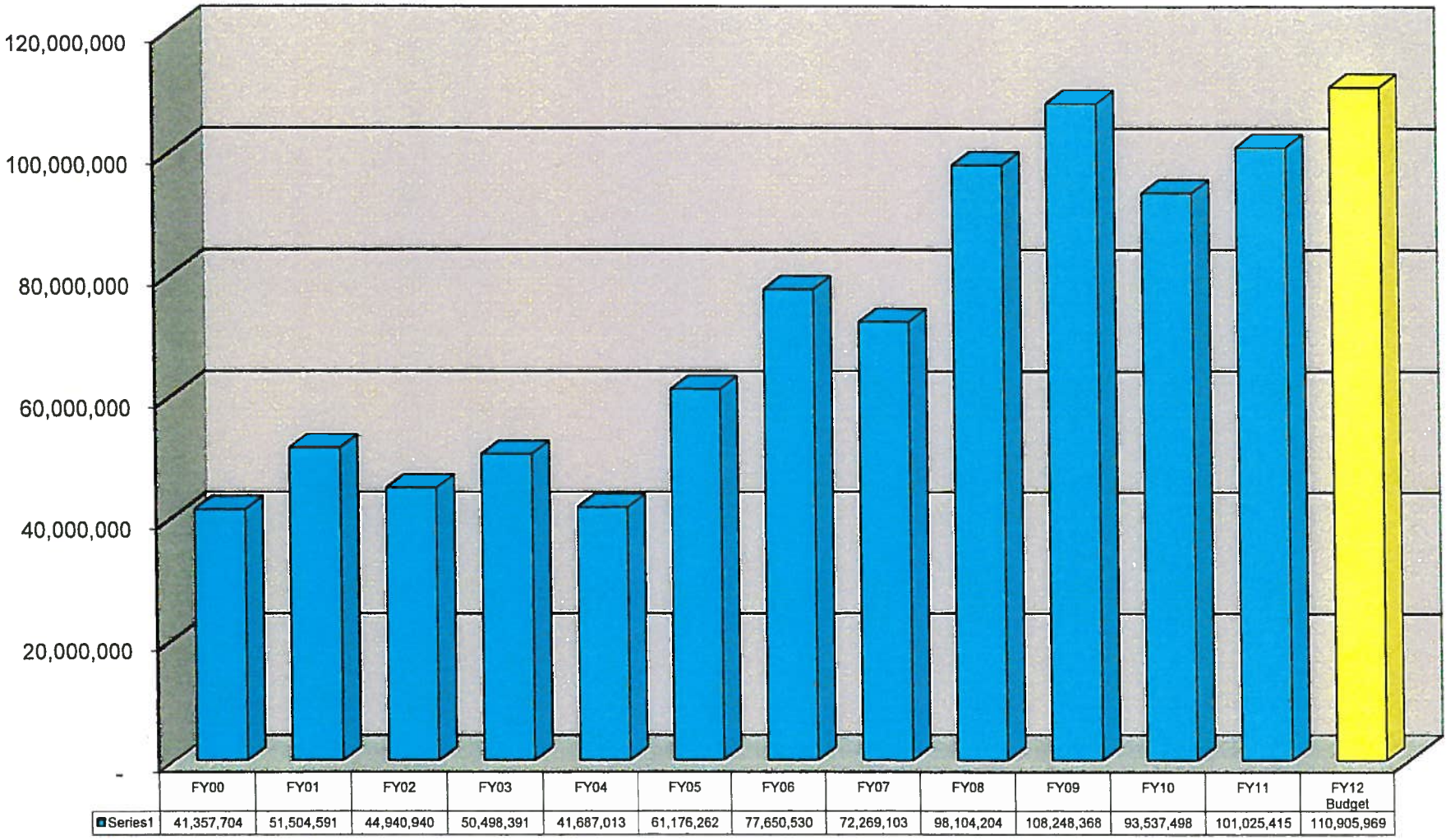
Massachusetts Bay Transportation Authority
Statement of Revenue and Expenses
FY 1991 to FY 2012

	FY2000	FY2001*	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012 Budget
REVENUE													
Operating Revenues													
Revenue from Transportation	230,974,595	280,982,907	283,287,567	274,205,790	295,496,104	319,271,166	333,095,971	386,487,953	440,961,963	448,751,949	439,322,438	448,813,678	454,467,000
Other Operating Revenue	28,351,819	37,721,851	37,831,187	43,361,074	49,440,154	47,751,508	47,213,995	45,133,618	48,835,439	58,002,689	60,181,070	62,392,121	50,291,603
Total Operating Revenues:	**259,326,414**	**318,704,758**	**321,118,754**	**317,566,864**	**344,936,258**	**367,022,674**	**380,309,966**	**431,621,571**	**489,797,402**	**506,754,638**	**499,503,508**	**511,205,799**	**504,758,603**
Non-Operating Revenues													
Revenue from Dedicated Sources													
Dedicated Local Assessment Revenue	144,553,734	144,553,734	142,872,642	141,142,768	139,437,832	137,732,280	136,026,829	139,427,540	142,913,229	146,486,060	150,148,212	767,056,684	152,100,139
Dedicated Sales Tax Revenue	587,504,666	590,772,447	664,350,000	682,094,554	686,976,316	704,620,528	711,086,005	733,963,311	755,982,210	767,056,684	767,056,684	150,429,215	777,028,421
Contract Assistance											159,999,996	159,999,996	160,000,000
Other Income	26,064,674	27,739,969	15,007,513	12,686,250	12,813,202	16,705,530	39,615,533	34,166,997	19,061,077	26,167,562	35,963,995	24,490,782	62,256,041
Total Non-Operating Revenues:	**758,123,074**	**763,066,150**	**822,230,155**	**835,923,572**	**839,227,349**	**859,058,339**	**886,728,367**	**907,557,848**	**917,956,516**	**939,710,306**	**1,113,168,887**	**1,101,976,677**	**1,151,384,601**
Total Revenues:	**1,017,449,489**	**1,081,770,908**	**1,143,348,909**	**1,153,490,436**	**1,184,163,607**	**1,226,081,013**	**1,267,038,333**	**1,339,179,419**	**1,407,753,918**	**1,446,464,944**	**1,612,672,394**	**1,613,182,476**	**1,656,143,204**
EXPENSES													
Operating Expenses													
Wages	283,120,856	291,092,991	307,843,432	311,714,068	319,328,460	337,189,978	347,845,647	353,664,245	361,508,444	402,881,584	396,739,644	398,341,656	410,938,780
Fringe Benefits													
Pensions	33,524,284	27,192,984	25,873,867	24,739,165	25,434,823	27,540,881	41,857,263	52,005,454	44,609,385	47,724,676	52,963,193	59,665,520	72,741,177
Health	52,117,167	60,578,664	60,323,763	67,674,053	77,001,451	85,781,407	93,753,992	95,930,047	104,869,299	109,528,356	118,652,016	115,868,416	129,196,207
Life Insurance	994,395	1,165,569	1,449,418	1,559,360	1,545,094	1,553,709	1,440,961	1,504,695	1,543,583	1,546,281	1,460,282	1,328,451	1,116,451
Disability	158,769	112,429	83,977	49,488	93,127	62,747	50,427	57,374	59,370	62,333	42,690	23,791	16,851
Workers Compensation	9,692,125	10,007,115	9,551,837	9,715,188	9,977,686	10,141,536	9,052,116	8,703,779	8,764,567	9,819,754	9,409,189	9,432,901	10,376,524
Other Fringes	248,615	344,430	237,440	260,500	416,524	256,262	231,396	138,491	194,365	212,009	99,473	108,592	237,719
Subtotal Fringes	96,735,355	99,401,191	97,520,302	103,997,754	114,468,705	125,336,543	146,386,155	158,339,840	160,040,569	168,893,409	182,626,843	186,427,671	213,684,929
Payroll Taxes													
FICA	22,821,064	22,086,654	22,622,521	22,696,017	23,625,249	26,013,957	26,490,013	26,630,379	26,467,343	30,271,460	29,889,210	30,344,223	31,436,817
Unemployment	412,196	300,580	568,412	856,692	781,663	886,056	965,961	849,024	869,093	2,544,780	2,000,205	1,886,874	1,168,764
Subtotal Payroll Taxes	23,233,260	22,387,234	23,190,933	23,552,709	24,406,912	26,900,012	27,455,974	27,479,403	27,336,436	32,816,240	31,889,415	32,231,097	32,605,581
Materials, Supplies and Services	101,024,633	110,677,687	111,318,591	118,917,517	108,786,619	121,716,973	134,304,402	145,355,389	162,826,552	172,911,307	177,762,476	182,741,475	195,142,197
Casualty & Liability													
Risk Insurance	1,409,685	1,439,198	2,092,547	4,536,073	6,210,857	6,972,111	6,497,308	6,445,066	6,267,586	5,709,821	5,833,874	6,050,194	6,222,079
Injuries & Damages	8,802,678	8,799,958	11,269,261	8,745,682	9,200,585	7,700,129	7,694,353	9,160,851	9,963,614	9,213,614	9,651,830	9,250,211	9,213,614
Subtotal Casualty & Liability	10,212,363	10,239,156	13,361,808	13,281,755	15,411,442	14,672,240	14,191,661	15,605,917	16,231,200	14,923,435	15,485,704	15,300,405	15,435,693
Purchased Commuter Rail Expenses	167,978,611	172,540,450	185,824,276	192,605,170	213,691,188	216,403,861	216,249,789	223,729,831	247,434,243	273,461,652	276,928,614	297,911,135	313,914,177
Purchased Local Service Expenses	25,251,475	28,996,629	32,131,530	35,172,502	38,327,589	43,985,446	49,520,600	54,572,067	60,614,114	67,737,669	91,187,370	102,351,579	107,079,468
Financial Service Charges	3,064,715	1,504,828	1,544,492	1,546,016	1,834,522	1,801,021	1,623,857	1,728,409	1,728,946	4,368,625	4,344,587	4,636,325	5,157,569
Total Operating Expenses:	**710,621,267**	**736,840,166**	**772,735,364**	**800,787,491**	**836,255,438**	**888,006,076**	**937,578,085**	**980,475,100**	**1,037,720,504**	**1,137,993,921**	**1,176,964,653**	**1,219,941,342**	**1,293,958,393**
Debt Service Expenses													
Interest	187,027,313	164,976,429	193,845,930	216,966,041	204,783,748	223,291,802	205,292,656	229,571,436	234,235,624	238,051,078	259,334,054	253,590,062	237,521,709
Principal Payments	104,534,949	111,645,667	131,959,750	110,349,327	117,798,529	95,651,923	113,104,925	112,722,401	116,476,024	84,634,312	157,325,042	126,886,948	115,356,121
Lease Payments	15,265,959	14,918,033	15,261,176	15,908,155	16,423,708	17,577,942	18,270,012	21,110,882	18,621,977	19,093,168	17,847,580	12,751,316	9,306,981
Total Debt Service Expenses:	**306,828,221**	**291,540,129**	**341,066,856**	**343,223,523**	**339,005,985**	**336,521,666**	**336,667,593**	**363,404,719**	**369,333,625**	**341,778,558**	**434,506,676**	**393,228,326**	**362,184,811**
Total Expenses:	**1,017,449,489**	**1,028,380,295**	**1,113,802,220**	**1,144,011,014**	**1,175,261,423**	**1,224,527,742**	**1,274,245,678**	**1,343,879,819**	**1,407,054,129**	**1,479,772,479**	**1,611,471,329**	**1,613,169,668**	**1,656,143,204**
Surplus	**0**	**53,390,613**	**29,546,689**	**9,479,422**	**8,902,184**	**1,553,271**	**(7,207,345)**	**(4,700,400)**	**699,789**	**(33,307,535)**	**1,201,065**	**12,808**	**0**
Deficiency Fund	**0**	**(13,130,183)**	**(1,075,047)**	**(5,363,232)**	**(4,770,114)**	**(1,553,271)**	**7,207,345**	**4,700,400**	**0**	**16,000,000**	**0**	**0**	**0**
Capital Maintenance Fund	**0**	**(36,583,800)**	**(24,116,436)**						**0**	**17,307,535**	**0**	**0**	**0**
Net Surplus/(Deficit)	**0**	**3,676,630**	**4,355,206**	**4,116,190**	**4,132,070**	**0**	**0**	**0**	**699,789**	**0**	**1,201,065**	**12,808**	**0**

* beginning of forward funding

*** Forward Funding**

Massachusetts Bay Transportation Authority
Fuel and Utilities FY2000 - FY2012



	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12 Budget
Series1	41,357,704	51,504,591	44,940,940	50,498,391	41,687,013	61,176,262	77,650,530	72,269,103	98,104,204	108,248,368	93,537,498	101,025,415	110,905,969

Massachusetts Bay Transportation Authority

Fuel and Utilities by Department FY2000–FY2012 Budget

	FY2000 Actuals	FY2001 Actuals	FY2002 Actuals	FY2003 Actuals	FY2004 Actuals	FY2005 Actuals	FY2006 Actuals	FY2007 Actuals	FY2008 Actuals	FY2009 Actuals	FY2010 Actuals	FY2011 Actuals	FY2012 Budget	
Bus														
Fuel Hedge	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,156,759	$534,792	-$1,721,188	$0	
Fuel Unleaded	$315,617	$431,974	$276,615	$389,740	$421,952	$443,727	$1,098,842	$1,226,848	$998,655	959,882	909,592	1,145,836	1,415,904	
Fuel Diesel	4,490,328	5,177,925	6,336,659	8,291,243	7,524,415	8,608,663	11,905,062	9,583,850	16,807,054	13,543,018	11,781,344	17,933,849	14,874,465	
Cng Eb	0	0	6,383	217,610	127,323	3,886,721	7,838,335	6,092,967	6,284,316	4,517,695	4,514,335	2,885,324	4,036,271	
CNG Facility Operations & Maintenance	0	0	0	0	0	2,560,037	1,349,595	2,004,795	2,362,501	1,907,753	1,780,605	1,743,402	1,907,707	
CNG Demand Charge: Keyspan	0	0	0	0	0	358,892	511,515	636,928	526,775	413,826	358,123	364,833	388,728	
Subtotal	4,805,945	5,609,899	6,619,657	8,898,593	8,073,690	15,858,040	22,703,349	19,545,388	26,979,301	24,498,933	19,878,791	22,352,056	22,623,075	
Operations Support														
Gas	1,330,086	1,848,412	1,122,224	2,325,815	2,114,850	2,384,153	3,896,541	3,153,181	2,765,401	2,906,062	2,701,720	2,474,833	1,828,797	
Electricity/power [1]	21,811,495	31,244,309	25,551,424	25,529,884	22,160,721	24,166,240	25,798,651	24,880,774	32,800,900	42,827,842	37,516,271	39,098,930	46,328,482	
Jet Credits (fuel and generation)	-1,520,191	-1,350,664	-1,985,311	-2,500,461	-5,391,328	-3,451,824	-3,479,997	-8,907,287	-6,993,338	-3,109,527	-851,566	-935,154	-3,560,906	
Heating Oil	305,038	348,407	167,168	311,304	243,017	354,338	374,652	523,584	783,980	335,532	393,199	-82,545	1,060,000	
Steam	500,324	641,901	502,034	806,246	355,768	585,492	820,105	783,209	883,965	565,670	471,418	499,817	922,250	
Water/Sewer	917,010	838,148	1,205,460	1,074,355	1,271,414	1,098,529	911,226	1,410,992	1,577,850	1,898,488	1,938,289	1,823,433	1,900,000	
Jet Fuel	387,745	254,147	312,905	327,079	192,419	252,702	599,678	792,125	989,599	716,066	1,031,920	440,988	1,100,000	
Subtotal	23,731,507	33,824,660	26,875,904	27,874,222	20,946,860	25,389,631	28,920,856	22,636,679	32,808,358	46,140,133	43,201,251	43,320,302	49,578,623	
General Activities														
Fuel Hedge								416,344	0	0	0	0	0	
Fuel Diesel								2,000,000	0	0	0	0	0	
CNG								1,000,000	0	0	0	0	0	
Subtotal	0	0	0	0	0	0	0	3,416,344	0	0	0	0	0	
Other Departments														
Telephone (SMI only)	3,344,831	2,642,136	2,705,657	3,024,642	2,443,374	2,914,885	2,714,772	3,051,935	2,777,564	2,878,423	3,216,753	3,606,551	3,283,853	
Cellphone (various) [2]	0	0	0	0	0	15,596	218,854	421,782	445,583	546,270	943,896	628,385	783,532	*
Electricity -Hingham Pkg (Ferry)	38,142	41,508	51,326	44,311	76,060	29,388	58,118	49,640	46,050	41,289	33,052	0	45,000	
Cable (Real Estate)	3,032	3,032	3,298	2,896	3,279	4,102	3,442	2,736	2,981	1,535	0	-246	0	
Subtotal	3,386,005	2,686,676	2,760,281	3,071,849	2,522,713	2,963,970	2,995,187	3,526,093	3,272,179	3,467,517	4,193,701	4,234,690	4,112,385	
Total Bus, Ops Support, Other	31,923,457	42,121,235	36,255,842	39,844,664	31,543,264	44,211,642	54,619,392	49,124,403	63,059,839	74,106,583	67,273,743	69,907,048	76,314,083	139.1%
Increase/Decrease Year over Year:		31.9%	-13.9%	9.9%	-20.8%	40.2%	23.5%	-10.1%	28.4%	17.5%	-9.2%	3.9%	9.2%	11.6%
Commuter Rail [3]	9,434,247	9,383,356	8,685,098	10,653,727	10,143,750	16,964,621	23,031,139	23,144,700	35,044,365	34,141,785	26,263,755	31,118,367	34,591,886	266.7%
Increase/Decrease Year over Year:		-0.5%	-7.4%	22.7%	-4.8%	67.2%	35.8%	0.5%	51.4%	-2.6%	-23.1%	18.5%	11.2%	22.2%
Grand Total Authority	$41,357,704	$51,504,591	$44,940,940	$50,498,391	$41,687,013	$61,176,262	$77,650,530	$72,269,103	$98,104,204	$108,248,368	$93,537,498	$101,025,415	110,905,969	168.2%
Increase/Decrease Year over Year:		24.5%	-12.7%	12.4%	-17.4%	46.8%	26.9%	-6.9%	35.7%	10.3%	-13.6%	8.0%	9.8%	14.0%

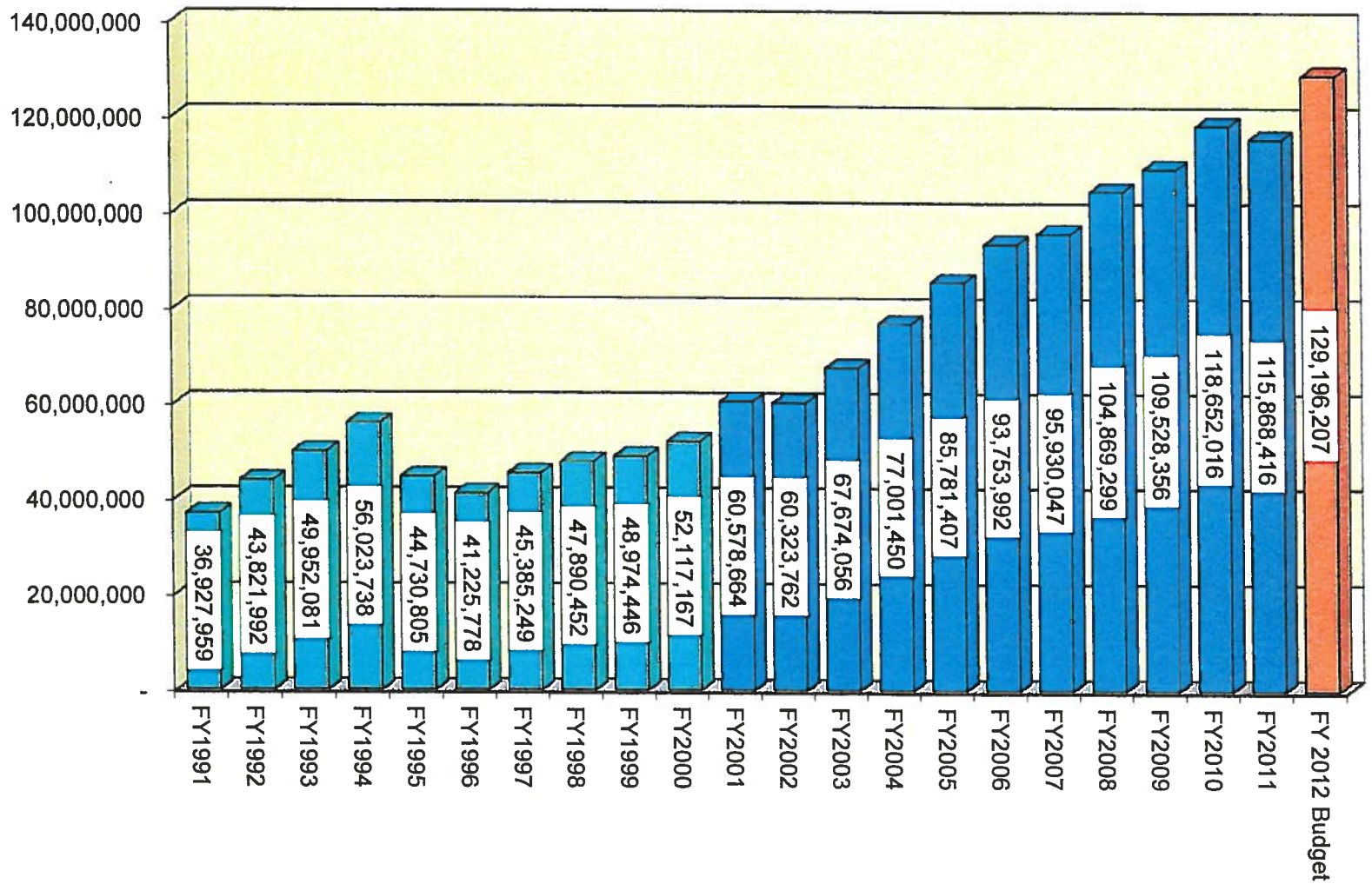
[1] FY01 was last year of the NStar contract. The new contact gave the Authority significant savings.

[2] Cellphones were included in Telephone line FY00, 01, 02, 03, 04. Some departments now pay their own, others are part of SMI cellphone costs.

[3] Commuter Rail Costs roll up to the Commuter Rail Subsidy line. All others roll to the Materials and Services line.

*FY12 Departments Pay Cell phones	
Police	57,656
SMI	461,000
bus	35,000
sub	75,823
safety	10,500
MR	3,000
AFC	39,551
ITD	26,000
OpsSupport	75,000
ADA	
Departments pay	783,532

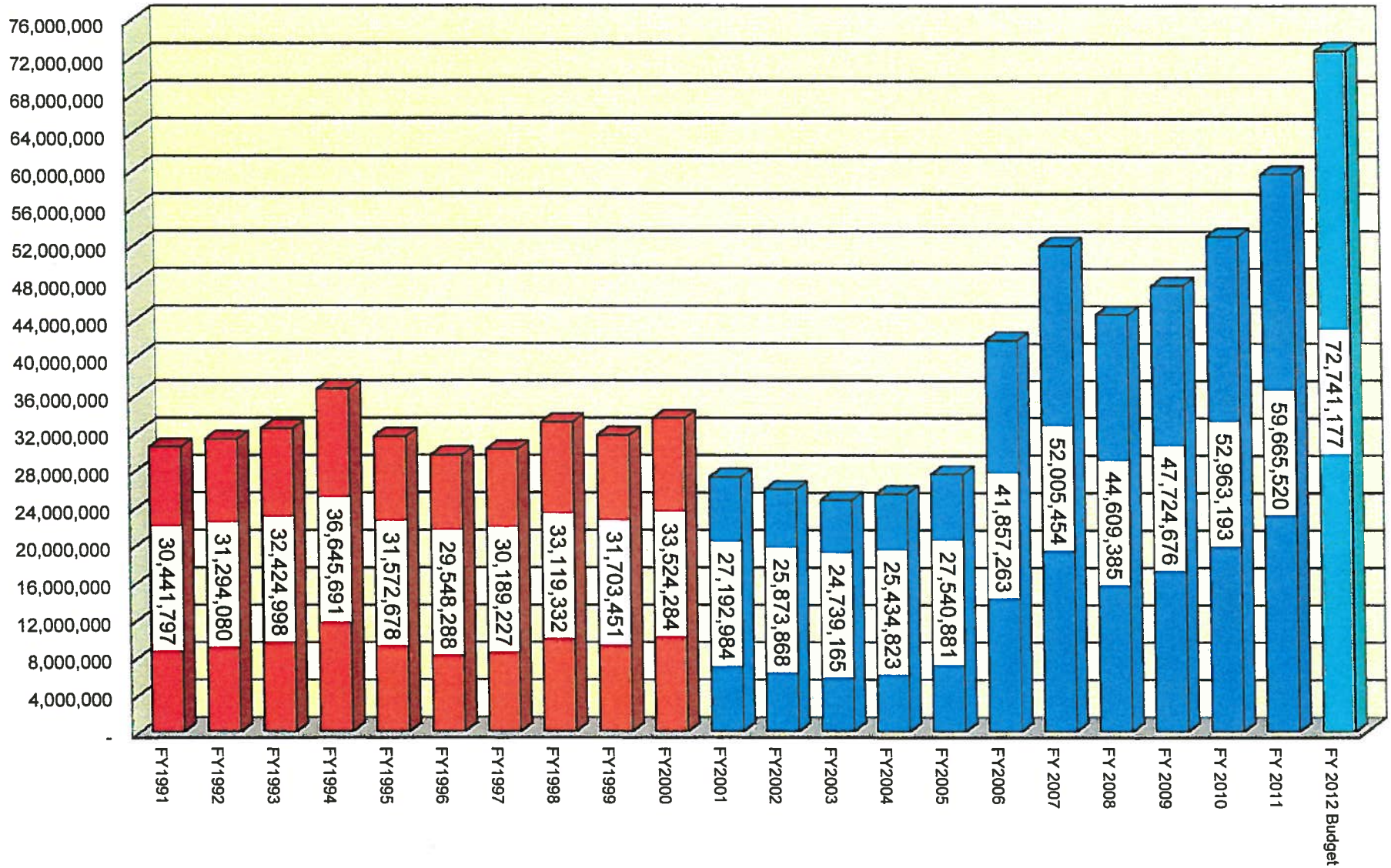
Massachusetts Bay Transportation Authority
Growth in Net Healthcare FY1991- FY2012 Budget



Blue represents Authority's finances since Forward Funding

Health Growth Chart1 2/2/2012

Massachusetts Bay Transportation Authority
Growth in Net Pensions FY1991 - FY2012 Budget



Blue represents Authority's finances since Forward Funding

PensionsGrowth Chart1 2/2/2012

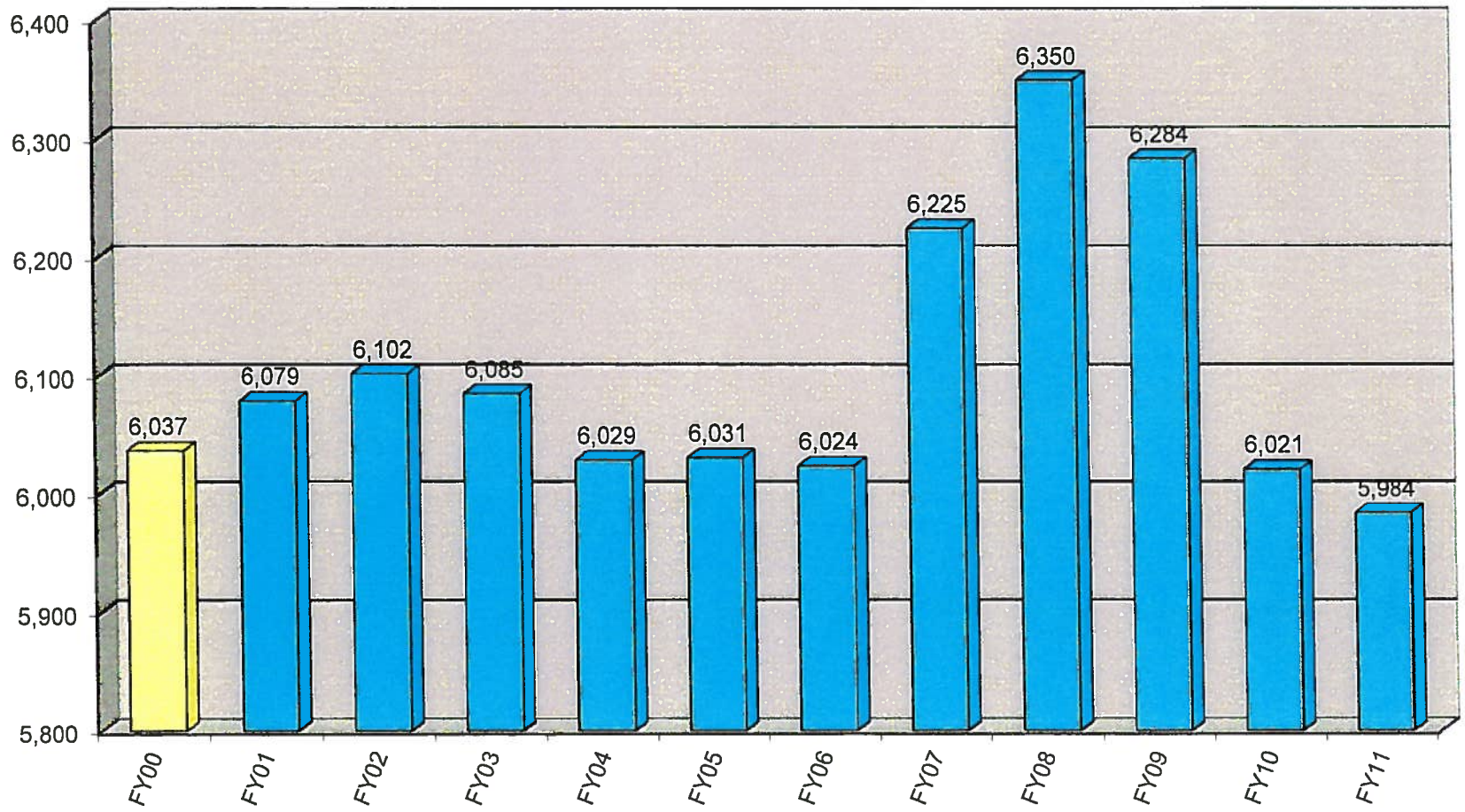
Massachusetts Bay Transportation Authority
Fringe Benefit Rates

	FY07 Actuals	FY07 Percent	FY08 Actuals	FY08 Percent	FY09 Actuals	FY09 Percent	FY10 Actuals	FY10 Percent	FY11 Actuals	FY11 Percent	FY12 Budget Budget	FY12 Budget Percent
Wages	$ 354,756,887		$ 361,508,443		$ 402,881,584		$ 396,739,644		$ 398,341,656		$ 410,938,780	
Fringe Benefits												
Pensions	48,646,761	13.71%	44,609,385	12.34%	47,724,676	11.85%	52,963,193	13.35%	59,665,520	14.98%	72,741,177	17.70%
Health	99,591,389	28.07%	104,869,299	29.01%	109,528,356	27.19%	118,652,016	29.91%	115,868,416	29.09%	129,196,207	31.44%
Life Insurance	1,614,616	0.46%	1,543,583	0.43%	1,546,281	0.38%	1,460,282	0.37%	1,328,451	0.33%	1,116,451	0.27%
Disability	63,819	0.02%	59,370	0.02%	62,333	0.02%	42,690	0.01%	23,791	0.01%	16,851	0.00%
Workers Compensation	10,662,999	3.01%	8,764,567	2.42%	9,819,754	2.44%	9,409,189	2.37%	9,432,901	2.37%	10,376,524	2.53%
Other Fringes	290,414	0.08%	194,365	0.05%	212,009	0.05%	99,473	0.03%	108,592	0.03%	237,719	0.06%
Fringe Benefits Subtotal	**160,869,998**	**45.35%**	**160,040,569**	**44.27%**	**168,893,409**	**41.92%**	**182,626,843**	**46.03%**	**186,427,671**	**46.80%**	**213,684,929**	**52.00%**
Payroll Taxes												
FICA	27,138,902	7.65%	26,467,343	7.32%	30,271,460	7.51%	29,889,210	7.53%	30,344,223	7.62%	31,436,817	7.65%
Unemployment	1,136,612	0.32%	869,093	0.24%	2,544,780	0.63%	2,000,205	0.50%	1,886,874	0.47%	1,168,764	0.28%
Payroll Taxes Subtotal	**28,275,514**	**7.97%**	**27,336,436**	**7.56%**	**32,816,240**	**8.15%**	**31,889,415**	**8.04%**	**32,231,097**	**8.09%**	**32,605,581**	**7.93%**
Without Leave time		**53.32%**		**51.83%**		**50.07%**		**54.07%**		**54.89%**		**59.93%**
Leave Time		**13.85%**		**13.85%**		**13.85%**		**13.85%**		**13.85%**		**13.85%**
Total Fringe Benefit Rate		**67.16%**		**65.68%**		**63.91%**		**67.92%**		**68.74%**		**73.78%**
Overtime Rate		50.00%		50.00%		50.00%		50.00%		50.00%		50.00%
FICA		7.65%		7.65%		7.65%		7.65%		7.65%		7.65%
Total Overtime Rate		**57.65%**		**57.65%**		**57.65%**		**57.65%**		**57.65%**		**57.65%**

Notes

The calculation of paid leave time assumes 12 paid holidays, 20 vacation days (10 years of service entitles one to 4 weeks of vacation), and 4 paid sick days. The percentage is derived by dividing 36 paid days off by 260 work days in the year. Hence, 13.9% of wages are attributable to paid leave.

MBTA Average Annual Headcount
FY00 to FY11



Notes: Operating and capital
Blue designates years since Forward Funding

Massachusetts Bay Transportation Authority

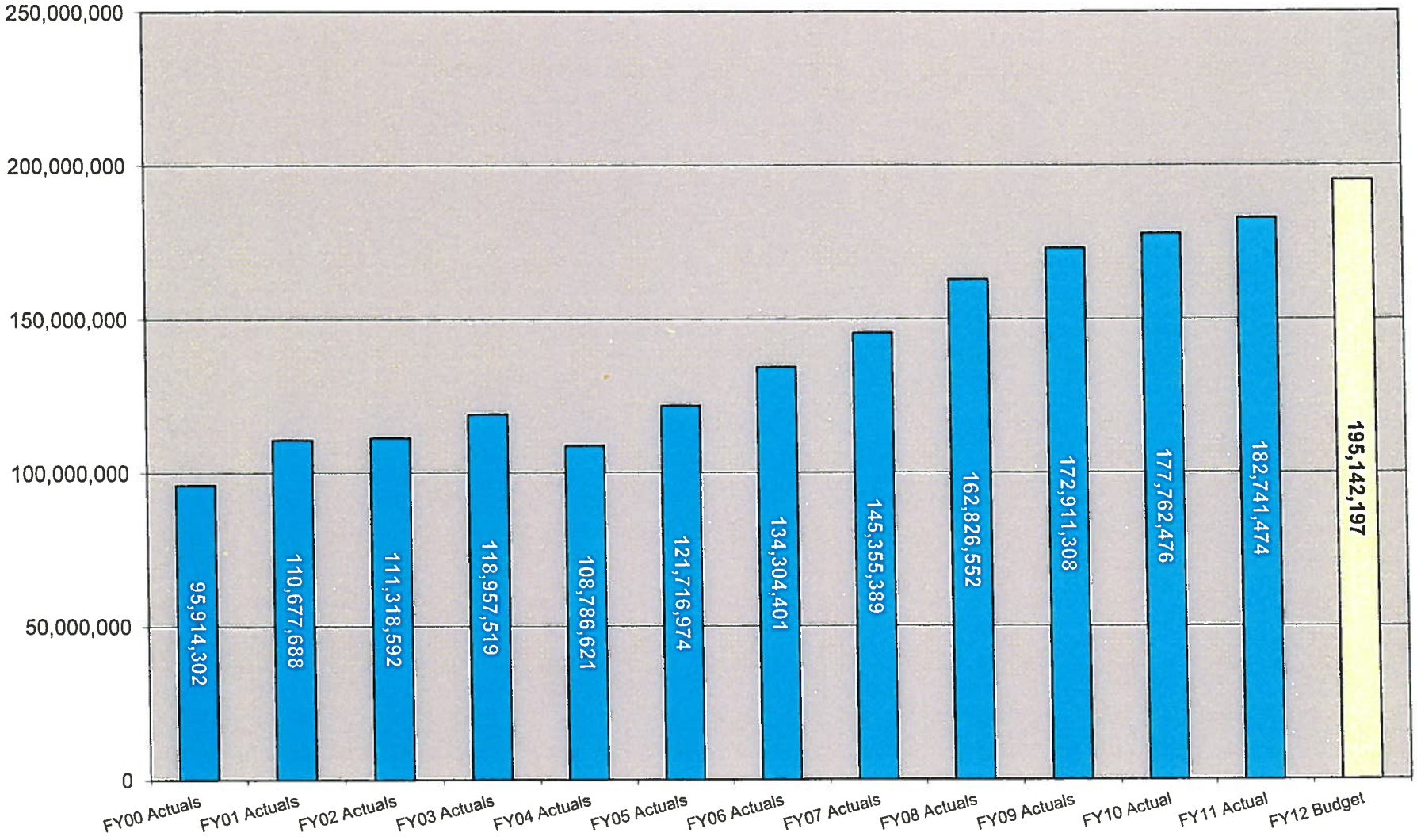
Regular and Overtime Wages: Operating Budget
FY2000--FY2011

	FY2000	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011
Regular	$267,108,358	$275,917,565	$290,135,680	$294,112,663	$294,193,173	$300,301,038	$313,211,069	$323,434,826	$337,358,908	$382,735,728	$367,223,495	$367,431,131
Overtime	16,012,498	15,175,426	17,707,752	17,601,405	25,135,290	36,888,940	34,634,578	30,229,418	24,149,536	20,145,856	29,516,149	30,910,525
Total	**$283,120,856**	**$291,092,991**	**$307,843,432**	**$311,714,068**	**$319,328,463**	**$337,189,978**	**$347,845,647**	**$353,664,244**	**$361,508,444**	**$402,881,584**	**$396,739,644**	**$398,341,656**
Overtime as % of Total Wages	5.7%	5.2%	5.8%	5.6%	7.9%	10.9%	10.0%	8.5%	6.7%	5.0%	7.4%	7.8%

Pre-Forward Funding

Common\History\Wages
MR: 2/6/12

MBTA
Materials, Supplies & Services *
FY2000 - FY2012 Budget



* Major categories include Fuel, utilities, cleaning contracts, legal services, computer technology and corrective and preventive maintenance items

Massachusetts Bay Transportation Authority

Local Service Subsidy
FY 1996 to FY 2012 Budget

Local Service	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	Budget FY2012	Increase (Decrease) over FY 1996	Average Annual Increase (Decrease)
Commuter Boat	1,064,094	1,181,309	1,264,612	1,258,295	1,137,455	748,676	1,178,011	2,186,889	1,234,591	1,944,380	2,519,120	2,823,530	3,809,347	3,384,388	3,803,302	3,762,015	4,123,820	287.5%	18.0%
Private Carrier Bus	795,246	939,663	937,294	1,619,038	945,070	955,056	983,448	880,767	945,939	1,100,847	1,254,585	1,406,385	1,541,385	1,639,008	1,664,727	1,689,741	1,769,315	122.5%	7.7%
Suburban Bus	495,679	540,754	568,500	637,274	779,910	463,399	518,049	623,539	471,799	518,496	558,893	521,907	543,228	371,066	372,900	363,849	371,000	-25.2%	-1.6%
Interdistrict Bus						1,833,243	1,810,696	1,718,061	1,524,521	1,452,953	0	0	0	0	0	0			
THE RIDE	14,807,976	18,444,345	19,914,217	20,215,628	21,450,742	24,996,256	27,641,328	29,763,248	34,150,738	38,968,771	45,188,001	49,820,245	54,720,154	62,343,208	85,346,442	96,535,973	100,815,333	580.8%	36.3%
		24.6%	8.0%	1.5%	6.1%	16.5%	10.6%	7.7%	14.7%	14.1%	16.0%	10.3%	9.8%	13.9%	36.9%	13.1%	4.4%		
Total Subsidy	**$17,162,995**	**$21,106,071**	**$22,684,623**	**$23,730,235**	**$24,313,177**	**$28,996,630**	**$32,131,532**	**$35,172,504**	**$38,327,588**	**$43,985,447**	**$49,520,599**	**$54,572,067**	**$60,614,114**	**$67,737,670**	**$91,187,371**	**$102,351,578**	**$107,079,468**	**523.9%**	**32.7%**
$ Increase over Previous Year		**3,943,076**	**1,578,552**	**1,045,612**	**582,942**	**4,683,453**	**3,134,902**	**3,040,972**	**3,155,084**	**5,657,859**	**5,535,152**	**5,051,468**	**6,042,047**	**7,123,556**	**23,449,701**	**11,164,207**	**4,727,890**		
% Increase over Previous Year		**23.0%**	**7.5%**	**4.6%**	**2.5%**	**19.3%**	**10.8%**	**9.5%**	**9.0%**	**14.8%**	**12.6%**	**10.2%**	**11.1%**	**11.8%**	**34.6%**	**12.2%**	**4.6%**		

Note: Average annual increase/decrease is calculated from FY 1996 through FY 2012 Budget with the exception of the Interdistrict Bus program.

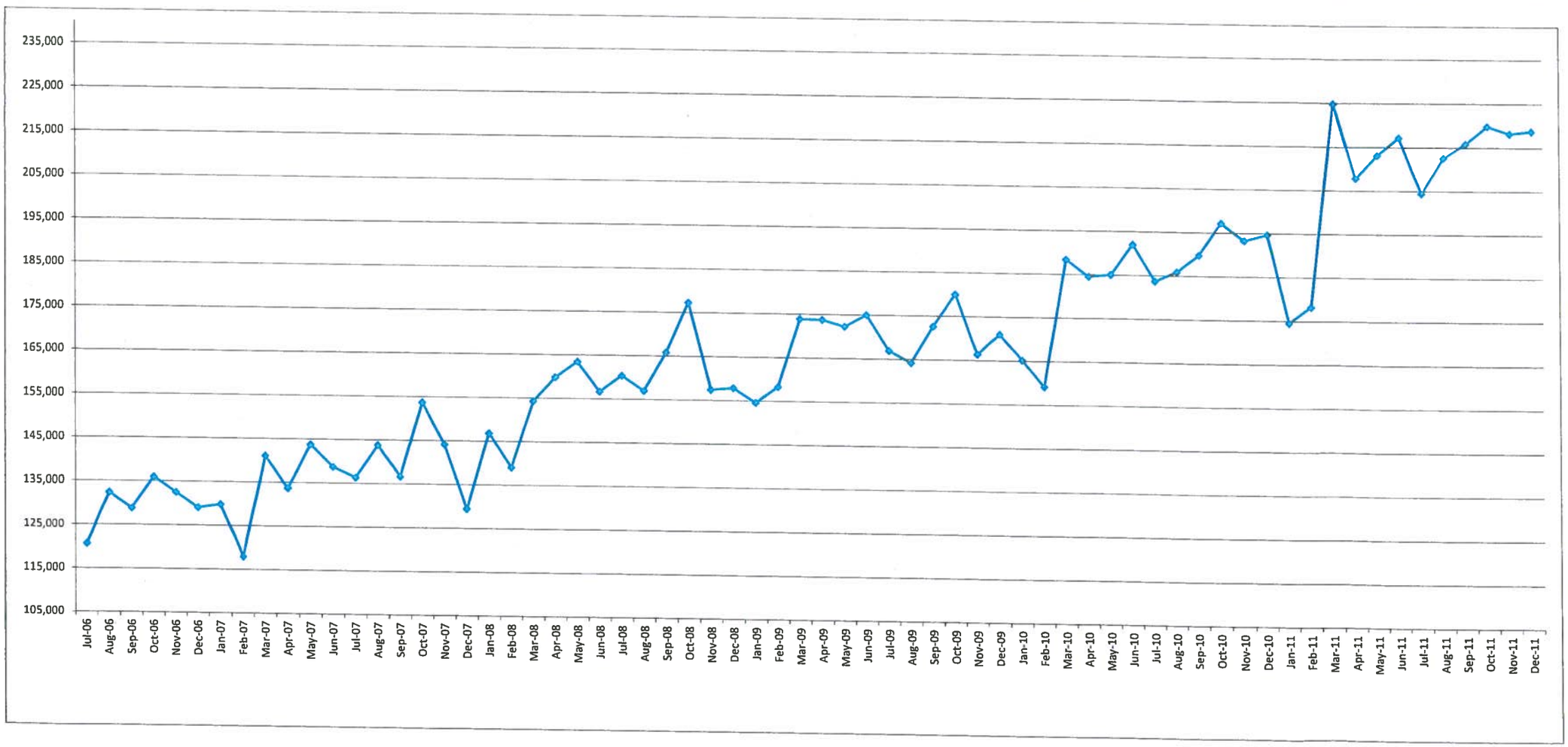
Common\History\LSSHistory (Tab LSS MR)
MR/DR 12/20/2010

THE RIDE

Completed Monthly Trip Totals

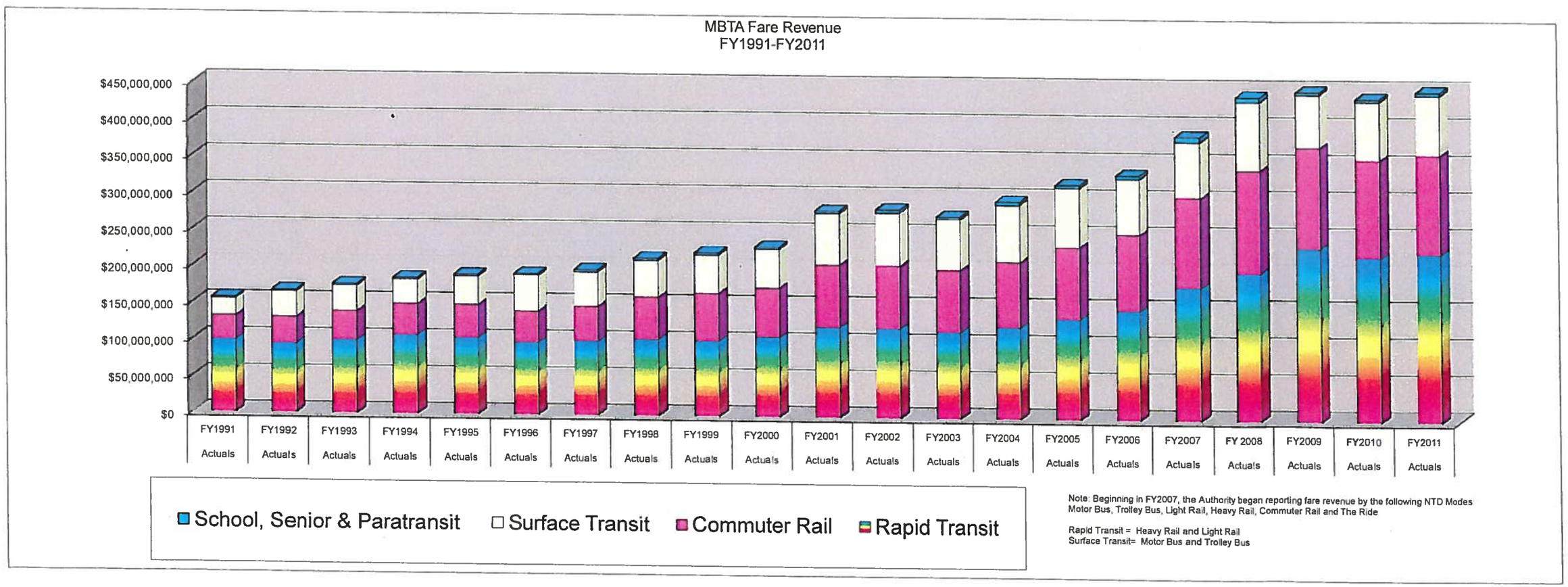
FY2000 to FY2012

FY00		FY01		FY02		FY03		FY04		FY05		FY06		FY07		FY08		FY09		FY10		FY11		FY12		FY05 vs. FY06 Variance	FY06 vs. FY07 Variance	FY07 vs. FY08 Variance	FY08 vs. FY09 Variance	FY09 vs. FY10 Variance	FY10 vs. FY11 Variance	FY11 vs. FY12 Variance
Jul-99	80,045	Jul-00	80,031	Jul-01	88,225	Jul-02	94,491	Jul-03	105,752	Jul-04	107,382	Jul-05	109,509	Jul-06	120,647	Jul-07	138,299	Jul-08	160,401	Jul-09	167,442	Jul-10	183,721	Jul-11	204,418	1.98%	10.17%	12.97%	17.68%	4.39%	9.72%	11.27%
Aug-99	86,824	Aug-00	90,238	Aug-01	91,788	Aug-02	94,534	Aug-03	103,360	Aug-04	111,383	Aug-05	120,307	Aug-06	132,364	Aug-07	143,816	Aug-08	157,008	Aug-09	164,152	Aug-10	185,863	Aug-11	212,600	8.01%	10.02%	8.65%	9.17%	4.55%	13.23%	14.39%
Sep-99	88,353	Sep-00	87,192	Sep-01	85,706	Sep-02	93,647	Sep-03	109,853	Sep-04	114,343	Sep-05	121,902	Sep-06	128,812	Sep-07	136,615	Sep-08	165,834	Sep-09	172,563	Sep-10	189,783	Sep-11	215,803	6.61%	5.67%	6.06%	21.39%	4.06%	9.98%	13.71%
Oct-99	91,202	Oct-00	92,115	Oct-01	98,050	Oct-02	103,776	Oct-03	117,159	Oct-04	115,438	Oct-05	121,480	Oct-06	136,001	Oct-07	153,694	Oct-08	177,284	Oct-09	179,994	Oct-10	197,191	Oct-11	219,853	5.23%	11.95%	13.01%	15.35%	1.53%	9.55%	11.49%
Nov-99	92,437	Nov-00	87,368	Nov-01	90,562	Nov-02	93,850	Nov-03	106,043	Nov-04	113,090	Nov-05	121,798	Nov-06	132,517	Nov-07	144,118	Nov-08	157,420	Nov-09	166,373	Nov-10	193,262	Nov-11	218,211	7.70%	8.80%	8.75%	9.23%	5.69%	16.16%	12.91%
Dec-99	92,101	Dec-00	82,495	Dec-01	85,276	Dec-02	92,991	Dec-03	106,385	Dec-04	105,368	Dec-05	119,053	Dec-06	129,095	Dec-07	129,453	Dec-08	157,861	Dec-09	171,037	Dec-10	194,664	Dec-11	218,763	12.99%	8.43%	0.28%	21.94%	8.35%	13.81%	12.38%
Jan-00	82,052	Jan-01	88,074	Jan-02	91,896	Jan-03	97,193	Jan-04	103,599	Jan-05	95,840	Jan-06	118,942	Jan-07	129,848	Jan-08	146,809	Jan-09	154,596	Jan-10	165,180	Jan-11	174,504	Jan-12		24.10%	9.17%	13.06%	5.30%	6.85%	5.64%	
Feb-00	86,903	Feb-01	81,290	Feb-02	84,238	Feb-03	87,582	Feb-04	103,115	Feb-05	104,071	Feb-06	111,329	Feb-07	117,912	Feb-08	139,050	Feb-09	158,235	Feb-10	159,172	Feb-11	178,180	Feb-12		6.97%	5.91%	17.93%	13.80%	0.59%	11.94%	
Mar-00	93,005	Mar-01	86,612	Mar-02	95,436	Mar-03	104,952	Mar-04	117,628	Mar-05	116,138	Mar-06	134,048	Mar-07	141,073	Mar-08	154,265	Mar-09	173,857	Mar-10	188,403	Mar-11	224,813	Mar-12		15.42%	5.24%	9.35%	12.70%	8.37%	19.33%	
Apr-00	83,247	Apr-01	88,563	Apr-02	96,028	Apr-03	105,140	Apr-04	111,859	Apr-05	113,846	Apr-06	120,247	Apr-07	133,692	Apr-08	159,838	Apr-09	173,757	Apr-10	184,577	Apr-11	207,826	Apr-12		5.62%	11.18%	19.56%	8.71%	6.23%	12.60%	
May-00	91,743	May-01	96,774	May-02	98,219	May-03	106,178	May-04	110,467	May-05	118,479	May-06	131,069	May-07	143,731	May-08	163,463	May-09	172,242	May-10	185,065	May-11	213,049	May-12		10.63%	9.66%	13.73%	5.37%	7.44%	15.12%	
Jun-00	87,903	Jun-01	89,883	Jun-02	91,684	Jun-03	103,785	Jun-04	114,216	Jun-05	120,328	Jun-06	129,142	Jun-07	138,690	Jun-08	156,693	Jun-09	174,994	Jun-10	192,039	Jun-11	217,110	Jun-12		7.32%	7.39%	12.98%	11.68%	9.74%	13.06%	
Total	1,055,815	Total	1,050,635	Total	1,097,108	Total	1,176,119	Total	1,309,436	Total	1,335,706	Total	1,458,824	Total	1,584,382	Total	1,764,113	Total	1,983,489	Total	2,095,997	Total	2,359,966	Total	1,289,648	9.22%	8.61%	11.34%	12.44%	5.67%	12.59%	12.68%



Massachusetts Bay Transportation Authority
Fare Revenue
FY1991 to FY2011

REVENUE	Actuals FY1991	Actuals FY1992	Actuals FY1993	Actuals FY1994	Actuals FY1995	Actuals FY1996	Actuals FY1997	Actuals FY1998	Actuals FY1999	Actuals FY2000	Actuals FY2001	Actuals FY2002	Actuals FY2003	Actuals FY2004	Actuals FY2005	Actuals FY2006	Actuals FY2007	Actuals FY 2008	Actuals FY2009	Actuals FY2010	Actuals FY2011	Average Annual Increase
Operating Fare Revenues																						
Rapid Transit	98,322,413	93,911,987	99,176,186	106,743,817	103,679,267	97,830,213	100,033,769	103,466,441	102,248,635	107,788,759	122,304,902	121,522,567	117,016,379	124,192,546	136,256,396	148,388,899	180,413,594	200,815,792	235,740,939	222,805,396	228,232,471	6.6%
Commuter Rail	32,997,071	36,363,398	39,827,707	42,602,734	45,079,659	42,707,370	47,653,409	58,005,408	65,378,414	67,535,442	85,223,784	85,144,093	84,853,863	89,083,486	98,790,037	104,137,787	123,020,901	140,617,665	137,526,370	133,495,748	135,327,041	15.5%
Surface Transit	23,361,554	34,418,432	34,660,104	33,031,411	38,825,042	48,452,635	47,064,891	49,753,560	51,949,067	52,791,159	69,950,773	72,115,128	69,081,005	78,102,548	80,080,979	75,700,371	76,117,496	92,983,968	72,182,550	79,516,470	81,167,002	12.4%
School, Senior & Paratransit	1,743,999	2,360,839	2,306,948	2,543,547	2,529,952	2,824,403	2,983,030	3,099,076	2,858,044	2,859,236	3,503,448	4,505,779	3,254,543	4,117,525	4,143,754	4,868,914	6,935,962	6,544,538	3,302,090	3,504,824	4,087,164	6.7%
Total Operating Fare Revenues:	156,425,037	167,054,656	175,970,945	184,921,509	190,113,920	191,814,620	197,735,099	214,324,485	222,434,161	230,974,595	280,982,907	283,287,567	274,205,790	295,496,105	319,271,166	333,095,971	386,487,953	440,961,963	448,751,949	439,322,438	448,813,678	9.3%
$ Increase/Decrease over Prior Year:		10,629,619	8,916,289	8,950,564	5,192,411	1,700,700	5,920,478	16,589,387	8,109,675	8,540,435	50,008,312	2,304,660	(9,081,777)	21,290,315	23,775,061	13,824,805	53,391,982	54,474,010	7,789,986	(9,429,511)	9,491,240	
Monthly Mean:	13,035,420	13,921,221	14,664,245	15,410,126	15,842,827	15,984,552	16,477,925	17,860,374	18,536,180	19,247,883	23,415,242	23,607,297	22,850,483	24,624,675	26,605,931	27,757,998	32,207,329	36,746,830	37,395,996	36,610,203	37,401,140	
% Increase over Previous Year:		6.8% Fare Increase	5.3%	5.1%	2.8%	0.9%	3.1%	8.4%	3.8%	3.8%	21.7% Fare Increase	0.8%	-3.2%	7.8% Fare Increase	8.0%	4.3%	16.0% Fare Increase	14.1%	1.8%	-2.1%	2.2%	



TAB E

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

Non-Fare Revenue Analysis

Non-Fare Revenue	FY2000 Actuals	FY2001 Actuals	FY2002 Actuals	FY2003 Actuals	FY2004 Actuals	FY2005 Actuals	FY2006 Actuals	FY2007 Actuals	FY2008 Actuals	FY2009 Actuals	FY2010 Actuals	FY2011 Actuals
Advertising												
Station & Vehicle -Systemwide	9,317,272	15,528,996	15,094,525	17,116,193	19,557,630	21,610,945	9,727,091	11,954,182	12,981,157	11,079,215	11,155,788	11,757,344
Advertising -Silverline	87,402	0	0	0	0	0	0	0	0	547,231	547,419	561,105
Station Concessions	2,187	0	0	0	0	0	0	0	0	0	795	0
Merchandise	0	7,848	932	739	0	0	0	0	0	7,915	5,591	1,563
Sub-Total Advertising	9,406,861	15,536,844	15,095,457	17,116,932	19,557,630	21,610,945	9,727,091	11,954,182	12,981,157	11,634,361	11,709,593	12,320,012
Revenue from Real Estate Operations												
Parking	9,812,601	9,844,492	9,445,085	12,338,832	14,948,004	13,857,889	16,184,713	17,148,254	20,100,315	27,113,249	30,018,649	30,042,425
South Station Parking	0	150,828	167,447	419,330	284,996	121,941	113,301	285,795	641,963	500,115	983,976	1,115,108
North Station Parking	3,062,068	3,348,601	4,362,828	4,462,726	4,280,615	3,514,502	4,722,740	4,107,586	4,865,094	4,858,174	4,685,923	4,772,675
Mystic Center Garage	49,910	97,417	3,401	-149,375	106,887	-128,534	16,053	-137,069	150,069	-28,544	28,562	-70,305
Massport Shuttle						166,377	2,001,365	2,012,357	1,997,259	2,010,460	2,023,782	2,009,967
Transit Realty Associates (TRA)			6,047,534	7,651,248	7,868,275	5,937,721	10,973,826	7,337,169	8,755,205	11,403,153	10,881,273	12,738,377
Commuter Rail ROW Access	1,081,703	926,739	1,013,420	131,435	1,062,635	986,770	986,181	371,504	205,214	932,984	95,486	288,603
128 Parking Garage	0	291,306	1,543,623	1,429,886	1,687,362	1,839,106	1,763,923	1,923,193	0	0	0	0
Other (Massport Boardings FY08 on)	0	0	152,392	-40,000	-146,148	-14,337	997,318	1,128	-740,806	-723,328	-505,938	-1,029,562
Anderson Regional Transportation Facility	0	0	0	0	-210,103	-140,873	-272,516	129,519	-120,031	302,065	259,763	204,823
Sub-Total Real Estate	14,006,282	14,659,383	22,735,730	26,244,082	29,882,523	26,140,562	37,486,904	33,179,436	35,854,282	46,368,328	48,471,476	50,072,111
Non-Operating Income												
Insurance	62,818	303,583	226,564	496,930	415,495	186,934	347,068	129,507	159,637	181,720	73,134	104,746
Property Sales	366,030	6,220,519	138,717	445,422	7,848,224	3,654,783	10,413,165	12,628,583	77,127	6,518,126	2,133,749	1,237,743
Safety Training	0	52,570	26,900	16,200	350	0	0	0	0	0	0	0
Lease Income	8,013,325	0	0	0	0	0	10,000,000	0	0	0	0	0
Other	712,746	1,751,276	4,974,174	6,003,932	236,179	349,123	2,315,353	6,078,041	1,823,429	3,837,295	1,677,740	2,647,088
Employee Pass Fee	0	0	0	0	3,025	4,070	1,145	0	136	1,834	1,625	2,089
Interest Income	5,346,197	10,686,563	5,563,211	2,587,324	2,062,669	4,361,467	3,447,601	4,843,353	6,667,974	3,228,048	1,506,708	5,117,399
Funds from Federal Government	6,453,227	6,500,000	2,224,876	1,140,131	305,100	6,614,493	10,884,751	8,035,587	8,025,720	10,000,000	28,836,501	13,587,002
Utility Reimbursements	5,110,331	2,221,903	1,850,221	1,996,312	1,772,399	1,534,660	2,206,452	2,451,926	2,307,054	2,400,539	1,734,539	1,794,716
Non-Operating Income Subtotal	26,064,674	27,736,414	15,004,663	12,686,251	12,643,441	16,705,530	39,615,535	34,166,997	19,061,077	26,167,562	35,963,996	24,490,783
Total Non-Fare Revenue	49,477,817	57,932,641	52,835,850	56,047,265	62,083,594	64,457,037	86,829,530	79,300,615	67,896,516	84,170,251	96,145,065	86,882,906

February 1, 2012

The Honorable William F. Welch
Clerk of the Senate
State House Room 335
Boston, MA 02113

Re: Massachusetts Bay Transportation Authority's Efforts to Maximize Non-Transportation Revenue

Dear Mr. Welch:

Pursuant to section 11 of chapter 161A and the reporting requirements contained therein, the Massachusetts Bay Transportation Authority (MBTA or Authority) is pleased to provide an update on the Authority's efforts to maximize non-transportation revenue.

The Authority collected $86.9 million in non-transportation revenues in FY 2011, a decrease of $9.2 million or 10% as compared to FY 2010. FY 2010 non-transportation revenues had previously increased 14% or $12 million as compared to FY 2009, primarily as a result of a temporary increase in federal operating assistance and the continued recovery of the financial and real estate markets. The FY 2011 decrease is directly attributable to a decrease of $15 million of that federal operating assistance. In FY 2010, the MBTA received $28.8 million in federal operating funds including a onetime payment of American Recovery and Reinvestment Act funds. The FY 2011 federal operating assistance revenues by comparison are $13.6 million. The MBTA continued to grow non transportation revenue collected from programs under its control. Non fare revenues not attributable to federal operating assistance increased by $6 million or 6.2% in FY 2011.

Advertising revenue totaled $12.3 million in FY 2011 an increase of 5% over FY 2010. Over the same period, revenue from real estate operations increased by 3% to $50 million.

Revenue from real estate operations, which includes parking but excludes property sales, is projected to decrease to $35.6 million in FY 2012 due primarily to a decrease in the amount of parking revenue available to the operating budget as a result of the parking revenue securitization executed in FY 2011. FY 2011 property sales totaled $1.2 million, an $800,000 decrease from 2010. The FY 2012 budget includes $45 million of

Massachusetts Bay Transportation Authority
Ten Park Plaza, Suite 3910, Boston, MA 02116
www.mbta.com

revenue from property sales and long-term leasing. This onetime and substantial increase reflects the planned sale or lease of the North Station parking garage facility.

Marketing

The Authority received $12.3 million through its advertising contract with Titan in FY 2011. This represents a 5% increase over advertising revenue collected in FY2010. The Authority does expect to continue to receive amounts in excess of the minimum annual guarantees by sharing in a higher amount of net billings and has budgeted $14.7 million of advertising revenues in the fiscal year 2012 budget.

In addition to the contract with Titan Outdoor, the MBTA also receives guaranteed advertising revenue from real estate operations on its outdoor billboard contract with Clear Channel Outdoor Inc., sponsorship agreements with Van Wagner Outdoor, Clear Channel, and Westwood Development LLC, advertising on bus shelters with CEMUSA, Inc., and advertising at the North Station Parking Garage.

Real Estate and Parking

The Authority generated $50 million in real estate operations and parking revenues in FY 2011. The Authority anticipates generating $49.3 million in gross revenue in FY 2012 from real estate operations and parking with $35.6 million available after payment of parking securitization bond debt service. Non-transportation revenue generated by the use of MBTA-owned real estate includes: sale, lease, and grant of easements of surplus parcels; leasing of land and buildings such as concession/vendor space, advertising, abutter uses, and telecommunication facilities; curing of encroachments, and licensing for the use of land and buildings such as outdoor advertising (billboards) and underground utilities/fiber optics.

Real Estate:

- Non-transportation revenue generated by the sale, lease, or licensing of MBTA-owned real estate has averaged over $18.74 million per year since forward funding was enacted (FY 2001 through FY 2011).

- Since forward funding was enacted, over 950 new leases and licenses have been granted bringing the current total annual rental income to almost $15.2 million. The disposition of Authority property, either by sale, long term lease, or easement, has generated an average of over $6.4 million in non-fare revenue annually.

- Currently, the combined vending and ATM program generates approximately $571,000 per year. A reoffering of the entire ATM program will occur in 2012.

- Pursuant to the expanded MBTA contract with Cemusa, Inc. for a bus shelter-advertising program, approximately 200 bus shelters and bicycle racks have been installed and maintained with a value of approximately $3 million at no cost to the MBTA. MBTA is also receiving 45% of gross advertising revenues from the bus shelter-advertising program for the MBTA-owned shelter sites and 22.5% of such revenue for the municipally-owned shelter sites. In addition, the Cemusa shelters are serviced and maintained at no cost to the MBTA. This program adds to the MBTA's bus shelter inventory, provides a needed amenity to the ridership and generates approximately $425,000 per year in additional revenue to the Authority.

- The expansion of the Subway wireless program is currently under construction by Insite Wireless. This program will expand to all underground stations the technology to allow the use of wireless devices in tunnels, improving customer service and the safety and security of the system. This program is currently producing a revenue stream of approximately $385,000 per year for phases one and two. As new stations are added, the license fees will increase accordingly.

- The Authority and its outdoor advertising contractor, Clear Channel, produce over $1.277 million in revenue from existing outdoor advertising locations. Clear Channel completed construction on eight new billboards generating over $678,000 in additional fees. The Authority also approved an amendment to the contract to approve the conversion of up to eighteen static billboards to digital which when completed will produce $1.38 million in additional annual revenues.

- The sponsorship program on certain Authority-owned real estate, such as vent shafts and the South Station Bus Terminal, is contributing $1.2 million annually to non-fare revenue.

- In FY11 MassDOT closed on the acquisition of certain rights of way from CSX to be operated by the MBTA. MBTA Real Estate has been managing these rights of way since acquisition and is currently working on curing encroachments and updating leases and licenses for utility, telecommunications, and other uses. Approximately 400 leases and licenses are currently being managed.

Additional efforts are planned in FY 2012 and beyond to continue to maximize non-transportation revenue from the Authority's real estate assets. These efforts include:

- Identifying new property sale and leasing opportunities including air rights over existing facilities and rights-of-way.

- Working closely with other state agencies (MassHousing, MassDevelopment, and MassDOT) to cultivate transit-oriented development (TOD) projects.

Parking:

In FY 2011, net revenues from parking totaled $30 million. In addition to more efficient and professional parking management, the MBTA has introduced new processes to provide customer convenience and increase revenues.

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Fiscal Efficiencies:

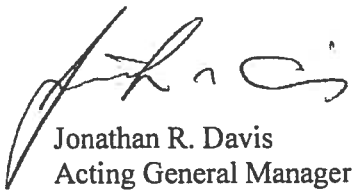
The MBTA's conservative financial management and strong credit ratings have provided the Authority with uninterrupted access to the capital markets and the ability to fund its capital program at relatively low interest rates. The MBTA actively manages its debt portfolio. Debt management includes defeasance of debt, refunding or restructuring prior debt and deploying hedge agreements used to manage certain financial uncertainties, such as the purchase of fuel.

Credit rating agencies have continued to rate MBTA's credit as one of the highest among transit properties in the country. The Authority's Assessment and Sales Tax bonds are rated Aa1 and AAA from Moody's and Standard & Poor's respectively. Underlying its strong credit ratings is the MBTA's continued success in achieving

management efficiencies. Strong credit ratings are also critical to the Authority's ongoing ability to obtain lower borrowing costs and reduce future debt service expenses.

In conclusion, the Authority will continue to explore every opportunity to achieve growth in non-transportation revenues. With the continued support from the MBTA Board of Directors, we expect to achieve the Authority's goals and objectives for non-transportation revenues.

Sincerely,



Jonathan R. Davis
Acting General Manager and
Chief Financial Officer

February 1, 2012

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Clerk of the House
State House Room 145
Boston, MA 02113

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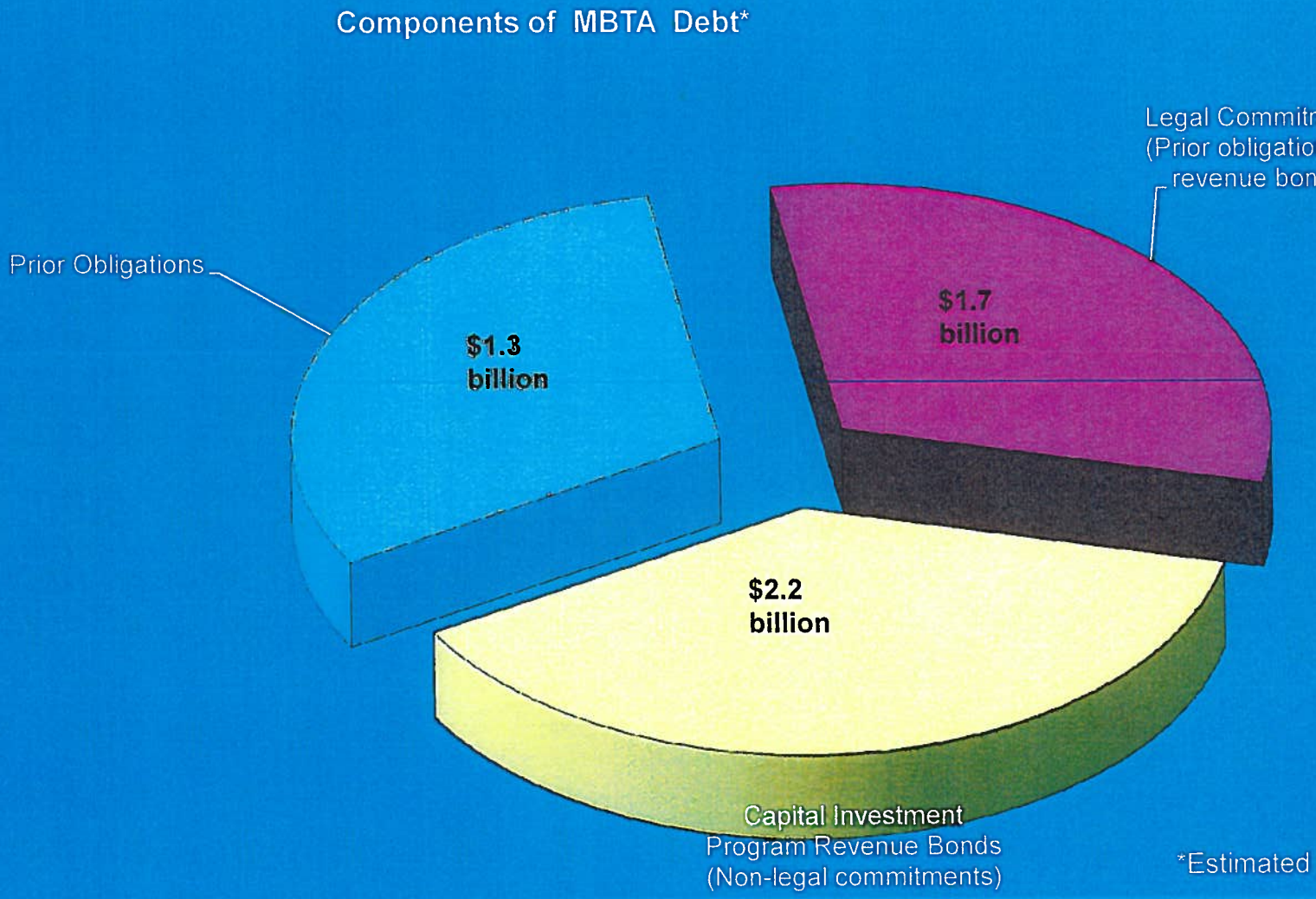
Sincerely,

Jonathan R. Davis
Acting General Manager and
Chief Financial Officer

TAB F

Massachusetts Bay Transportation Authority

MBTA Outstanding Debt – $5.2 billion



	Prior Obligations			Sales Tax Bonds			Assessment Bonds			All Debt
Fiscal Year (7/1)	Principal	Interest	Debt Service	Principal	Interest	Debt Service	Principal	Interest	Debt Service	Total Debt Service
2012	96,161,737	37,459,219	133,620,956	34,325,000	184,225,090	218,550,090	16,535,000	27,804,664	44,339,664	396,510,709
2013	114,157,169	32,351,458	146,508,627	88,275,000	183,118,134	271,393,134	1,390,000	30,031,330	31,421,330	449,323,090
2014	94,150,000	25,709,140	119,859,140	106,310,000	179,186,363	285,496,363	4,925,000	29,982,680	34,907,680	440,263,183
2015	68,735,000	19,966,027	88,701,027	129,875,000	173,774,029	303,649,029	4,265,000	29,727,730	33,992,730	426,342,786
2016	23,450,000	15,865,785	39,315,785	187,140,000	166,982,769	354,122,769	2,420,000	29,535,142	31,955,142	425,393,696
2017	9,630,000	14,363,225	23,993,225	191,345,000	157,337,172	348,682,172	2,190,000	29,419,987	31,609,987	404,285,384
2018	17,315,000	13,711,700	31,026,700	205,325,000	147,605,998	352,930,998	32,595,000	29,313,607	61,908,607	445,866,305
2019	18,840,000	12,507,675	31,347,675	215,370,000	137,224,745	352,594,745	34,240,000	27,717,026	61,957,026	445,899,446
2020	19,095,000	11,203,050	30,298,050	225,265,000	126,321,797	351,586,797	36,170,000	26,031,351	62,201,351	444,086,198
2021	20,420,000	9,881,400	30,301,400	243,604,669	125,497,878	369,102,547	22,205,000	24,225,341	46,430,341	445,834,288
2022	10,955,000	8,467,825	19,422,825	186,400,524	114,756,580	301,157,104	10,595,000	23,125,385	33,720,385	354,300,314
2023	10,740,000	7,714,700	18,454,700	240,923,646	106,905,229	347,828,875	7,755,000	22,612,122	30,367,122	396,650,697
2024	11,495,000	6,962,900	18,457,900	195,091,405	96,160,952	291,252,357	23,570,000	22,234,066	45,804,066	355,514,323
2025	12,300,000	6,158,250	18,458,250	184,399,255	87,861,990	272,261,245	24,190,000	21,121,050	45,311,050	336,030,545
2026	13,160,000	5,297,250	18,457,250	193,648,169	80,061,956	273,710,125	26,895,000	19,891,750	46,786,750	338,954,125
2027	14,080,000	4,376,050	18,456,050	182,700,772	71,714,009	254,414,781	28,345,000	18,491,163	46,836,163	319,706,993
2028	15,065,000	3,390,450	18,455,450	163,283,982	63,506,098	226,790,080	15,385,000	17,015,038	32,400,038	277,645,567
2029	16,120,000	2,335,900	18,455,900	165,214,896	56,105,678	221,320,574	45,370,000	16,229,000	61,599,000	301,375,474
2030	17,250,000	1,207,500	18,457,500	149,319,541	48,520,784	197,840,325	47,735,000	13,847,075	61,582,075	277,879,900
2031	-	-	-	123,573,838	41,768,064	165,341,902	54,000,000	11,340,988	65,340,988	230,682,890
2032	-	-	-	97,773,360	36,452,927	134,226,287	57,095,000	8,505,988	65,600,988	199,827,275
2033	-	-	-	85,393,396	32,346,444	117,739,840	63,615,000	5,639,750	69,254,750	186,994,590
2034	-	-	-	132,078,658	28,882,744	160,961,402	15,975,000	2,437,463	18,412,463	179,373,865
2035	-	-	-	47,686,762	22,987,213	70,673,975	35,310,000	1,598,775	36,908,775	107,582,750
2036	-	-	-	33,924,614	21,500,901	55,425,515	-	-	-	55,425,515
2037	-	-	-	35,047,272	20,686,295	55,733,567	-	-	-	55,733,567
2038	-	-	-	31,345,000	3,130,119	34,475,119	-	-	-	34,475,119
2039	-	-	-	32,865,000	1,962,532	34,827,532	-	-	-	34,827,532
2040	-	-	-	19,345,000	737,983	20,082,983	-	-	-	20,082,983
										-
Total	**603,118,906**	**238,929,503**	**842,048,409**	**3,926,849,759**	**2,517,322,473**	**6,444,172,232**	**612,770,000**	**487,878,469**	**1,100,648,469**	**8,386,869,109**

Notes:

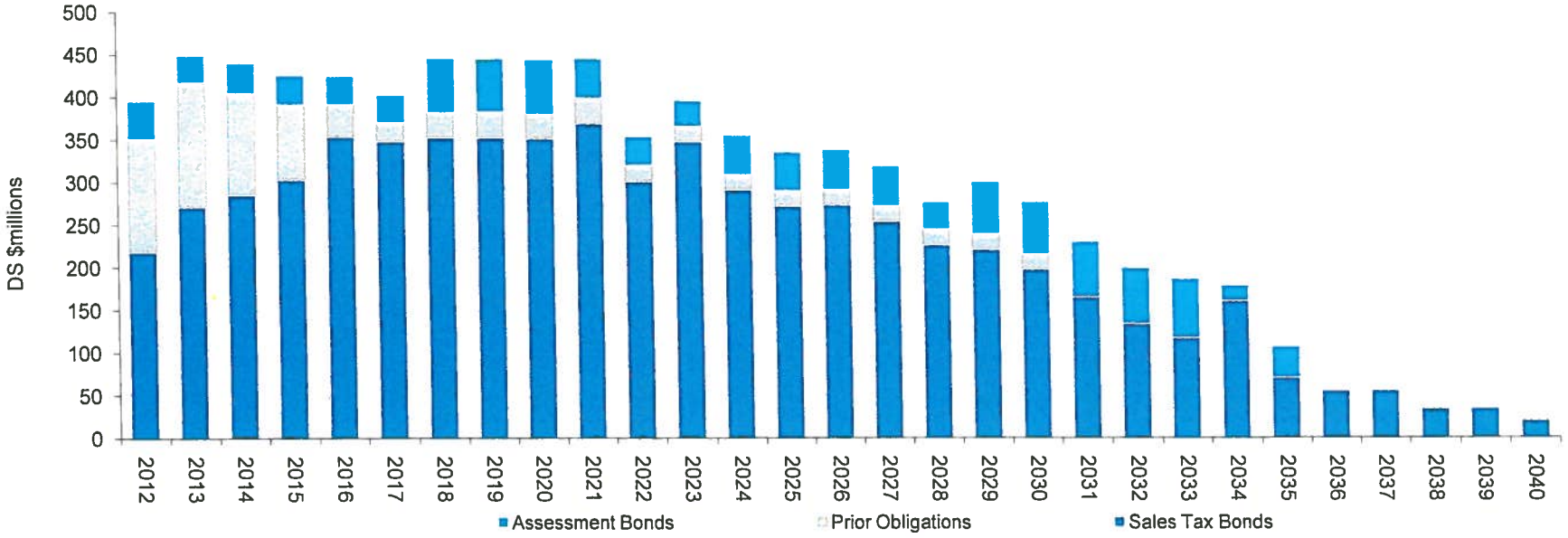
Includes debt service net of the Federal Subsidy on BABs (Series 2009C and 2010D)

Includes the $93,370,000 principal amount of the Senior Sales Tax Bonds, 2003 Series B

Assumes a rate of 4.96% with respect to the 2010 Series A bonds unhedged portion, 5.61% on the hedged portion

Debt service reflects savings from 2011 parking system transaction. DSF money associated with refunded debt service due on 7/1/11 will be released in FY2012.

Total Principal	5,142,738,665
Total Interest	3,244,130,444
Total Debt Service	8,386,869,109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Assessment Bonds
Prior Obligations
Sales Tax Bonds

Existing Indebtedness	Principal Amount Outstanding as of July 1, 2011 ($mil.)	Last Maturity Date	Bond Type
Prior Obligations	$603	2030	Mostly General Transportation System Bonds (Commonwealth full faith and credit)
Sales Tax Bonds	$3,927	2040	Revenue Bonds
Assessment Bonds	$613	2035	Revenue Bonds
Total	**$5,143**		

Legal Commitments
($ in millions)

Commitment	Project Budget	Sources of Funds: Federal Funds	Sources of Funds: Other Funding	Sources of Funds: MBTA Bond Share	Life-to-Date Spending	Balance Unspent	% Spent	Status
MBTA Project Commitments								
400 New Buses	$ 89.70	$ 66.70	$ -	$ 23.00	$ 89.70	$0.00	100.0%	Completed
Lynn Station, Bus Station, Parking	47.70	2.50	3.50	41.70	47.70	0.00	100.0%	Completed
North Station Improvements	18.00	0.00	0.00	18.00	18.00	0.00	100.0%	Completed
Red Line Rolling Stock	156.50	0.00	0.00	156.50	156.50	0.00	100.0%	Completed
South Station/Track 12	1.50	0.00	0.00	1.50	1.50	0.00	100.0%	Completed
Water Transportation Study	1.30	0.00	0.00	1.30	1.30	0.00	100.0%	Completed
Urban Ring Study	2.60	0.00	0.00	2.60	2.60	0.00	100.0%	Completed
North Shore Transportation Study	1.70	0.00	0.00	1.70	1.70	0.00	100.0%	Completed
Bus Retrofits	1.60	1.30	0.00	0.30	1.60	0.00	100.0%	Completed
South Station Bus Terminal	128.50	34.30	0.00	94.20	128.47	0.03	100.0%	Completed [1]
Old Colony CR Restoration	602.00	437.60	0.00	164.40	598.02	3.98	99.3%	Completed [1]
Worcester CR Extension	99.90	0.00	0.00	99.90	99.08	0.82	99.2%	Completed [1]
20,000 Add'l Parking Spaces	94.20	26.00	0.00	68.20	92.50	1.70	98.2%	Completed [1]
North/South Rail Link Study	4.80	0.00	4.70	0.10	4.70	0.10	97.9%	Completed [1]
Newburyport CR Extension	61.17	0.00	0.00	61.17	59.87	1.30	97.9%	Completed [1]
Washington Street Replacement Service [2]	115.30	0.00	77.70	37.60	108.06	7.24	93.7%	Completed [1]
South Boston Piers Transit (Silver Line Ph. II)	600.92	481.00	0.00	120.00	565.65	35.27	94.1%	Completed [1]
Alternative Fuel Purchase (358 CNG buses)	145.30	100.80	0.00	44.50	131.61	13.69	90.6%	Completed
Blue Line Modernization	578.80	315.20	0.00	263.60	296.71	282.09	51.3%	Under Construction
Procurement 260 ECD Buses	98.60	54.08	0.00	44.52	46.52	52.08	47.2%	Delivery Underway
Greenbush Commuter Rail Line	479.12	0.00	0.00	479.12	218.71	260.41	45.6%	Under Construction
Orange Line Signal Improvements	84.20	67.36	0.00	16.84	16.32	67.88	19.4%	Under Construction
Fairmount Corridor Improvements	37.31	0.00	0.00	37.31	1.89	35.41	5.1%	Underway
New Orange Line Vehicles	15.00	12.00	0.00	3.00	1.66	13.34	11.1%	Underway
Total MBTA Project Commitments	**$ 3,465.71**	**$ 1,598.84**	**$ 85.90**	**$ 1,781.06**	**$ 2,690.38**	**$ 775.34**	**77.6%**	
Other Commitments [3]								
Silver Line Phase III	$ 773.17				$ 17.09		2.2%	Design Underway
Green Line Arborway Restoration	95.00				1.85		1.9%	Design Underway
Green Line Extension to Medford Hillside	461.00				0.11		0.0%	Planning Study
Red Line-Blue Line Connector	237.00				0.00		0.0%	Planning Study
Total Other Commitments	**$ 1,566.17**	**$ -**	**$ -**	**$ -**	**$ 19.05**	**$ -**		

Notes:
(1) Construction completed.
(2) Assumes other funding fully expended.
(3) Listed bugets are preliminary cost estimates, subject to change.

TAB G

Comparison of MBTA net operating cost (subsidy) per passenger by mode with peer agencies. Source: 2010 NTD data

Metro Area	Agency	Fare Revenues Earned	Total Operating Expenses	Unlinked Passenger Trips	Net Operating Cost / Unlinked Passenger Trip	Average fare / Unlinked Passenger Trip	Fare Recovery Ratio
Heavy Rail							
New Jersey	PATH	$ 104,673,000	$ 297,889,695	82,994,189	$2.33	$1.30	35%
New Jersey	PATCO	$ 22,057,817	$ 44,898,029	10,108,981	$2.26	$2.20	49%
Atlanta	MARTA	$ 58,775,169	$ 171,509,427	77,732,006	$1.45	$0.80	34%
San Francisco	BART	$ 331,361,008	$ 463,074,086	108,297,950	$1.22	$3.10	72%
Los Angeles	LACMTA	$ 34,983,345	$ 90,320,275	47,905,917	$1.16	$0.70	39%
Boston	MBTA	$ 153,168,117	$ 306,460,723	139,039,529	$1.10	$1.10	50%
Washington, D.C.	WMATA	$ 487,832,729	$ 787,299,552	287,304,340	$1.04	$1.70	62%
Chicago	CTA	$ 239,349,891	$ 451,039,566	210,849,074	$1.00	$1.10	53%
Philadelphia	SEPTA	$ 84,909,232	$ 166,097,224	95,229,240	$0.85	$0.90	51%
New York City	NYCT	$ 2,398,466,039	$ 3,345,934,576	2,439,158,966	$0.39	$1.00	72%
Light Rail							
New Jersey	NJ Transit	$ 16,385,252	$ 95,596,913	15,578,508	$5.08	$1.10	17%
Seattle	King County	$ 288,470	$ 2,281,393	520,933	$3.83	$0.60	13%
Los Angeles	LACMTA	$ 30,725,008	$ 167,914,954	46,409,075	$2.96	$0.70	18%
San Francisco	MUNI	$ 38,087,880	$ 169,225,292	49,396,925	$2.65	$0.80	23%
New Jersey	NJ Transit	$ 4,715,062	$ 18,595,074	5,912,680	$2.35	$0.80	25%
Philadelphia	SEPTA	$ 25,790,879	$ 62,804,028	29,445,764	$1.26	$0.90	41%
Boston	MBTA	$ 69,637,279	$ 140,761,337	65,471,593	$1.09	$1.10	49%

Comparison of MBTA net operating cost (subsidy) per passenger by mode with peer agencies. Source: 2010 NTD data

Metro Area	Agency	Fare Revenues Earned	Total Operating Expenses	Unlinked Passenger Trips	Net Operating Cost / Unlinked Passenger Trip	Average fare / Unlinked Passenger Trip	Fare Recovery Ratio
Motor Bus, Direct-Operated							
San Francisco	AC Transit	$ 53,236,385	$ 299,691,000	61,390,737	$4.01	$0.90	18%
Washington, D.C.	WMATA	$ 105,689,552	$ 544,160,730	123,847,193	$3.54	$0.90	19%
New York City	MTA Bus	$ 167,953,513	$ 557,085,004	120,237,039	$3.24	$1.40	30%
Seattle	King County	$ 99,604,752	$ 379,189,938	87,470,767	$3.20	$1.10	26%
New Jersey	NJ Transit	$ 303,804,966	$ 705,700,477	150,512,148	$2.67	$2.00	43%
Atlanta	MARTA	$ 47,317,774	$ 212,963,676	68,008,889	$2.44	$0.70	22%
Boston	MBTA	$ 77,360,442	$ 335,275,969	107,071,648	$2.41	$0.70	23%
Philadelphia	SEPTA	$ 156,535,308	$ 550,023,201	178,114,894	$2.21	$0.90	28%
San Francisco	MUNI	$ 70,635,973	$ 243,149,950	91,609,190	$1.88	$0.80	29%
Los Angeles	LACMTA	$ 243,652,671	$ 908,173,677	353,046,474	$1.88	$0.70	27%
New York City	NYCT	$ 838,969,230	$ 2,290,455,502	829,179,926	$1.75	$1.00	37%
Chicago	CTA	$ 271,642,600	$ 710,902,330	306,023,976	$1.44	$0.90	38%
New Jersey	NJ Transit	$ 7,225,037	$ 6,859,760	4,428,428	($0.08)	$1.60	105%
Demand Response							
New York City	NYCT	$ 14,097,151	$ 463,532,150	5,957,189	$75.44	$2.40	3%
New Jersey	NJ Transit	$ 1,749,235	$ 58,298,915	923,303	$61.25	$1.90	3%
Seattle	King County	$ 308,539	$ 56,008,586	1,177,175	$47.32	$0.30	1%
San Francisco	AC Transit	$ 2,118,589	$ 31,290,662	710,951	$41.03	$3.00	7%
Boston	MBTA	$ 3,504,823	$ 87,289,966	2,095,998	$39.97	$1.70	4%
Chicago	PACE	$ 7,936,956	$ 111,738,831	2,603,150	$39.88	$3.00	7%
Washington, D.C.	WMATA	$ 3,766,701	$ 84,189,600	2,121,847	$37.90	$1.80	4%
Atlanta	MARTA	$ 1,007,390	$ 18,613,195	508,219	$34.64	$2.00	5%
Los Angeles	Access Services	$ 5,000,714	$ 89,833,812	2,777,037	$30.55	$1.80	6%
Philadelphia	SEPTA	$ 6,182,119	$ 47,771,144	1,778,334	$23.39	$3.50	13%
San Francisco	MUNI	$ 837,936	$ 9,462,647	513,900	$16.78	$1.60	9%

Comparison of MBTA net operating cost (subsidy) per passenger by mode with peer agencies. Source: 2010 NTD data

Metro Area	Agency	Fare Revenues Earned	Total Operating Expenses	Unlinked Passenger Trips	Net Operating Cost / Unlinked Passenger Trip	Average fare / Unlinked Passenger Trip	Fare Recovery Ratio
Commuter Rail							
New York City	MTA LIRR	$ 523,235,055	$ 1,074,655,096	98,373,179	$5.61	$5.30	49%
New Jersey	NJ Transit	$ 427,420,432	$ 838,542,100	82,223,534	$5.00	$5.20	51%
New York City	MetroNorth	$ 526,690,796	$ 888,802,846	80,699,548	$4.49	$6.50	59%
Boston	MBTA	$ 133,495,748	$ 280,287,152	36,909,924	$3.98	$3.60	48%
Philadelphia	SEPTA	$ 121,745,348	$ 236,410,333	36,805,684	$3.12	$3.30	51%
Ferry Boat							
New York City	NYC DOT	$ 229,412	$ 1,102,412	41,365	$21.10	$5.50	21%
New York City	MetroNorth	$ 176,815	$ 3,671,649	174,352	$20.04	$1.00	5%
New York City	NYC DOT	$ -	$ 134,364,389	21,466,170	$6.26	$0.00	0%
Seattle	King County	$ 444,807	$ 1,523,203	153,620	$7.02	$2.90	29%
Boston	MBTA	$ 5,711,433	$ 9,891,657	1,290,556	$3.24	$4.40	58%
New Jersey	PATH	$ 8,397,901	$ 8,809,728	1,440,128	$0.29	$5.80	95%
Trolley Bus							
Boston	MBTA	$ 2,156,028	$ 17,025,889	3,124,729	$4.76	$0.70	13%
Seattle	King County	$ 20,112,498	$ 58,164,044	20,721,095	$1.84	$1.00	35%
San Francisco	MUNI	$ 51,635,995	$ 147,949,471	66,967,743	$1.44	$0.80	35%
Philadelphia	SEPTA	$ 4,933,707	$ 12,057,292	5,510,376	$1.29	$0.90	41%
Motor Bus, Purchased							
New Jersey	NJ Transit	$ 11,677,865	$ 72,357,263	11,712,227	$5.18	$1.00	16%
Seattle	King County	$ 11,109,150	$ 7,659,725	817,030	($4.22)	$13.60	145%
Los Angeles	LACMTA	$ 7,066,135	$ 37,815,878	12,929,008	$2.38	$0.50	19%
Washington, D.C.	WMATA	$ 2,870,138	$ 13,292,019	4,596,694	$2.27	$0.60	22%
Boston	MBTA	$ 674,044	$ 2,812,373	1,056,358	$2.02	$0.60	24%
Los Angeles	LADOT	$ 9,296,030	$ 63,699,495	30,341,013	$1.79	$0.30	15%

TAB H

FY 2011 Average Daily Ridership by Commuter Rail Line

	Weekday after 10PM	Weekday all day	Saturday all day	Sunday all day
Newburyport	52	17,291	3,256	2,686
Rockport	476	7,160	3,494	2,423
Fitchburg	171	9,685	2,952	2,230
Lowell	400	12,378	3,195	2,424
Haverhill	319	9,685	2,533	2,398
Providence	439	19,478	5,801	3,213
Stoughton	72	7,549	N/A	N/A
Fairmount	4	986	N/A	N/A
Franklin	312	13,870	2,775	1,685
Greenbush	51	5,439	837	790
Kingston/Plymouth	61	6,893	1,123	865
Middleboro/Lakeville	92	7,476	1,453	1,697
Needham	79	6,936	936	N/A
Worcester	258	15,110	2,854	2,355
TOTALS:	2,786	139,936	31,209	22,766
# of days/yr	255	255	53	57
Annual Total	710,430	35,683,680	1,654,077	1,297,662

TAB I

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

MBTA EFFICIENCIES AND COST SAVINGS

June 13, 2011

Introduction

Since the advent of "forward funding" in fiscal year 2001, the Authority has made great strides in enacting efficiencies and cost savings measures. These cost efficiencies, however, have been insufficient to contain the dramatic rise in operating expenses, which have far outpaced inflation. The Authority has experienced many of the cost increases (e.g. healthcare and energy) that all businesses and consumers have but the Authority is unique in that many of its costs are driven by the need to provide high service levels at reasonable fares.

One has only to compare major expense categories at the Authority with inflation. While the Consumer Price Index is not a perfect proxy for MBTA price/cost escalation, it is nonetheless instructive to compare changes over time even though service demands have increased. Between July 2000, the first month of forward funding, and March 2011, inflation in the Boston area increased **33%**.[1] In comparison, total operating expenses increased **65%**--a $480.0 million increase from $736.8 million in FY 2001 to $1.216 billion in FY 2011. Driving the 65% increase in operating expenses were the following:

- Purchased local service expenses (largely THE RIDE) increased **230.1%** ($67.7 million) from $29.0 million in FY 2001 to $95.7 million in FY 2011. In addition to normal cost inflation for the vendors, ridership doubled from 1,050,635 million trips in FY 2001 to 2,095,997 million trips in FY 2010.

  Paratransit services offered through THE RIDE are federally mandated and since the Authority started offering the service in 1977, the number of ADA eligible paratransit customers has increased dramatically to over 70,000 today. The service area is approximately 729 square miles with a service area population in excess of 2.5 million people.

- Employee benefits increased **86.0%** ($85.5 million) from $99.4 million in FY 2001 to $184.9 million in FY 2011. Two of the largest benefits components—pensions and healthcare—accounted for most of the increase. Pension costs rose **115.2%** ($31.3 million) from $27.2 million in FY 2001 to $58.5 million in FY 2011. Healthcare costs rose **87.7%** ($53.2 million) from $60.1 million in FY 2001 to $113.7 million in FY 2011.

  Pensions and healthcare were two of the areas addressed by Transportation Reform in 2009 and the Authority is in the process of moving all employees into the Group

[1] Boston CPI-U: July 2000—183.2 and March 2011—242.8

Insurance Commission health care plans. Upon the ratification of a new pension agreement, the Authority will begin to see pension savings over time as new employees will be subject to age (55) and years of service (25) requirements for pensions.

- Purchased commuter rail expenses, including fuel costs, increased **74.2%** ($128.0 million) from $172.5 million in FY 2001 to $300.5 million in FY 2011. In addition to normal business cost inflation, **revenue vehicle miles increased 7.7%** from 21,832,809 miles in 2000 to 23,516,370 in 2010. Commuter rail is procured through a competitive fixed price contract but fuel costs are a variable cost subject to world supply and demand.

- Materials, services, and supplies, which include non-commuter rail fuel and energy costs, rose **69.3%** ($76.7 million) from $110.7 million in FY 2001 to $187.4 million in FY 2011. In addition to fluctuating fuel and energy costs, the procurements from this line item have been greatly affected by the maintenance demands of an aging fleet, which in the case of Orange and Red Line cars, are long overdue for replacement.

The only large expense item which tracked reasonably close to inflation was wages which rose 36.2% ($105.2 million) from $291.1 million in FY 2001 to $396.3 million in FY 2011. Between July 1, 2000 and July 1, 2009, unionized employees received annual increases compounding to 35.6% during a period in which service revenue miles increased.

In addition to the growth in operating expenses, sales tax revenue has performed less than expected at the beginning of "forward funding" requiring higher and more frequent fare increases to partially compensate for this lower revenue. As the chart below indicates, actual sales tax receipts have declined over the last ten years. The Authority does benefit from a guarantee which exceeded actual sales tax by $130 million in Fiscal 2010. Significant escalation of operating costs has left the Authority increasingly unable to respond to ridership growth and the maintenance demands of an aging fleet without drawing upon reserves, deferring debt payments, and the Commonwealth taking on a larger funding commitment of $160 million in contract assistance, which is subject to appropriation on an annual basis. The Authority continues to be unable to fund a more pay-go capital program to ease the debt burden and support a higher level of state of good repair capital spending for system modernization.

In two ways, the Authority has been fortunate compared with its peers because it receives dedicated revenues (sales tax and assessments)[2] and, as a result of Transportation Reform in 2009, now receives contract assistance from the Commonwealth in the amount of $160 million annually to support vital transportation services. Nonetheless, in constructing a budget for fiscal year 2011, the Authority was faced with a $74 million deficit and the deficit facing the Authority for fiscal year 2012 grew to $127 million. Deficits in future years are

[2] $917 million in FY 2010 and FY 2011 and $929 million in the FY 2012 budget

projected to grow from $192 million in fiscal year 2013 to $344 million in fiscal year 2016. Even when all of the parts of Transportation Reform are implemented and the Authority is able to move forward with the securitization of its parking assets, the fiscal year 2013 budget will have a projected deficit of $156 million.

The following lists some of the Authority's management achievements which have served the agency well to this point. However, there are limits on the extent to which achievements like these can continue to compensate for increasing service demands and inflationary pressures outside the Authority's control, the inability to pay down debt as planned, an increasing need for state of good repair investment, and the huge structural deficit facing the Authority. Without new revenue sources or significant debt relief, the future is bleak for public transportation in Massachusetts.

Labor Costs

Overall Headcount at the MBTA

Labor is the largest cost component in the Authority's operating budgets. The Authority has been particularly diligent in minimizing headcount growth as this is critical to cost containment. In the fiscal year 2011 budget, wages, fringe benefits, and payroll taxes account for 50% of total operating expenses.[3] As the historical budgeted headcount chart below indicates, the MBTA's operating and capital funded budgeted headcount has been in excess of 6,000 employees but under 7,000 employees over the last 19 years.

Budgeted headcount reached a high point of 6,957 in FY 1994 but has dropped by 668 employees (9.6%) to the 6,289 positions in the FY 2011 budget.[4] Despite expansions in service over the past 19 years, the budgeted headcount has remained low from historical highs. FY 2011 has the lowest budgeted headcount since FY 2008. The total reduction of 668 positions between FY94 and FY11 is worth approximately $43 million at an assumed annual salary of $65,000. Savings in fringe benefits costs and payroll taxes are in addition to that.

Even in the more recent years in which budgeted headcount has crept up to meet greater service needs, the Authority has been cautious about filling vacancies in order to meet budgetary targets. The chart in Tab A—*Historical Headcount Budget vs. Actuals*—shows that the Authority kept significant numbers of positions vacant over the 12 year period depicted. Vacancies in most years have averaged from approximately 200 to 300 positions. The chart below graphically shows the number of unfilled positions by year:

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[3] In the FY 2011 budget, wages are $396.3 million, fringe benefits $184.9 million, and payroll taxes $31.5 million. Total operating expenses are $1.2 billion.

[4] The current FY 2012 budget request carries a 12 position reduction for a combined operating and capital budget headcount of 6,277.

MBTA Headcount by Functional Area: Administrative vs. Operations

In addition to lowering headcount over the 19 year span depicted in the headcount charts, the Authority has reallocated headcount from administrative and support functions to operations. The headcount charts under Tab B—*Total Historical Headcount by Department FY92—FY11*—provide an overview of historical headcount and a breakdown of MBTA departments into functional areas. The MBTA's budgetary focus in these increasingly difficult financial times has been to reallocate scarce resources from administrative (non-service related) areas to the operations groups providing direct service to our customers. The regrouping of departments into the six functional areas below bears this out. While all functional groups have seen a reduction in headcount, the largest headcount reductions have been sustained by the non-operations groups. Whereas the operations group comprised 78.4% of total Authority headcount in FY92, today they comprise 90.7% of the Authority workforce.

1. Departments with an Employee Focus (Diversity, Human Resources, Labor Relations, and Occupational Health)—these departments comprise 1.2% of the FY11 budgeted headcount with 74 employees.

   This cluster of departments has sustained a **28.8% cut** in headcount (30 employees) from their high of 104 employees in FY99 to their current headcount of 74.

2. Departments with a Finance and Procurement Focus (Budget, Compliance and Reporting, Materials, Treasurer/Controller, and Vehicle Procurement)—these departments comprise 3.0% of the FY11 budgeted headcount with 188 employees, of which 103 are in Treasurer/Controller.

   This cluster of departments has sustained a 76.7% cut in headcount (618 employees) from their high of 806 employees in FY93 to their current headcount of 188. However, it is important to note that there were reorganizations within these departments over time. In FY 1993 there was a Revenue Department which oversaw all of the Collectors. These positions were transferred to Systemwide Modernization/AFC in FY 2007 and then to Subway in FY 2008. Accounting for these transfers, this cluster of departments has sustained an adjusted **33.6%** cut in their headcount.

3. Departments with an External Communications Focus (Customer Support, Intergovernmental Affairs, Marketing, and Public Affairs)—these departments comprise 0.8% of the FY11 budgeted headcount with 48 employees, of which 34 are in the Customer Support Call Center.

   This cluster of departments has sustained a **17.2% cut** in headcount (10 employees) from their high of 58 employees in FY94 to their current headcount of 48.

4. Departments with an Asset Construction, Planning, and Management Focus (Design & Construction, Environmental Affairs, Planning, and Real Estate)—these departments comprise 3.2% of the FY11 budgeted headcount with 199 employees, of which 178 are in Design & Construction.

   This cluster of departments has sustained a **52.4% cut** in headcount (219 employees) from their high of 418 employees in FY92 to their current headcount of 199.

5. Departments with a Customer Service Focus Encompassing Transportation, Asset Maintenance, Safety and Security (Bus, Chief Operating Officer, Commuter Rail, Office of Transportation Access, Operations Support, Operations Service Development, Police, Private Transportation, System-wide Maintenance & Improvements, System Safety, System-wide Accessibility, System-wide Modernization, and Subway)—these departments comprise 90.7% of the FY11 budgeted headcount with 5,704 employees, of which 2,379 are in Bus and 1,949 are in Subway.

   This cluster of departments has sustained, not surprisingly, the smallest percentage cut of the group with a **4.5% cut** in headcount (270 employees) from their high of 5,974 employees in FY09 to their current headcount of 5,704. What this also shows is the increased emphasis of funding operations at the expense of all other areas during the MBTA's lean years. This cluster comprised 78.4% of total Authority headcount in FY92 compared with 90.7% today.

6. Departments with a Corporate Focus (General Manager, Interagency, Information Technology, and Law)—these departments comprise 1.2% of the FY11 budgeted headcount with 76 employees, of which 41 are in IT.

   This cluster of departments has sustained a **50.6% cut** in headcount (78 employees) from their high of 154 employees in FY93 to their current headcount of 76.

While the reallocation of the workforce from administrative and support staff to operations has been a financial necessity, it is doubtful that the Authority could generate significant savings in the future without compromising many of the critically important administrative and support functions. A recent review by the MBTA Advisory Board of the Federal Transit Administration's National Transit Database (NTD) information from 2007 found that compared with its peers (the 15 largest transit properties ranked by unlinked trips), the MBTA had the lowest ratio of administrative employees to total employees:

Percentage of Administrative Employees to Total Employees

City/Property	Rank by Unlinked Trips	Rank by Administrative Employees %
Boston/MBTA	**5**	**5.17%**

Washington/WMATA	4	6.61%
New York/NYCTA	1	6.87%
Philadelphia/SEPTA	6	7.19%
San Francisco/MUNI	8	7.19%
Chicago/CTA	2	7.22%
Seattle/King County Metro	10	7.74%
Los Angeles/LACMTA	3	7.96%
Miami/MDT	11	9.12%
Baltimore/MdTA	13	9.12%
San Francisco/BART	12	13.09%
Houston/Harris County Metro	14	13.76%
Oregon/Tri-Met	15	15.01%
New Jersey/NJT	7	15.05%
Atlanta/MARTA	9	15.69%

MBTA Headcount Productivity

While the MBTA has made significant cost structure inroads in its 668 position reduction since FY94, this savings only tells part of the story. The Authority has produced significantly more output with fewer people. The National Transit Database (NTD) reports (see Tab C) provide insight into this achievement in their tracking of four industry standard performance measures for MBTA service below:

NTD Productivity Measure	1995	2009	% Change
Annual passenger miles	1,386,187,235	1,843,855,012	33.0%
Annual unlinked trips	321,885,416	367,247,601	14.1%
Annual vehicle revenue miles	74,447,896	93,994,720	26.3%
Annual vehicle revenue hours	4,410,863	6,441,612	46.0%
MBTA Budgeted Headcount	6,602 (FY95)	6,289 (FY11)	**(4.7%)**

Despite a 4.7% reduction in budgeted headcount between fiscal years 1995 and 2011, the Authority has made substantial, double digit gains in all four major indices: passenger miles, unlinked trips, vehicle revenue miles, and vehicle revenue hours. Even though the Authority's operating expenses have increased over this 17 year period, the NTD data shows that the Authority has been providing more service. Budget increases have not been driven by headcount increases but rather by normal business and inflationary escalation in costs of all expenditure items in the budget as well as increases in service as the chart below shows:

Note: National Transit Database has not published the 2010 Annual Vehicle Revenue Miles.

Overtime Costs

In addition to reducing headcount, the Authority has monitored the use of overtime and has produced a significant savings in overtime over the last five years. While there is some relationship between overtime use and vacancies, the Authority has balanced the two in order to create the greatest value in total wage dollars. Total operating budget overtime has fallen four out of the past five years from a high of $36.9 million in FY 2005 as the following chart indicates:

MBTA Annual Operating Budget Overtime

FY 2005	**$36,888,940**	**High**
FY 2006	34,634,578	
FY 2007	30,229,418	
FY 2008	24,149,535	
FY 2009	**20,145,855**	**Low**
FY 2010	29,516,149	

Overall Reduction from 5 Year High: 20% or 4% per year

The overtime reduction is even more noteworthy given that during this period the unionized workforce received collectively bargained wage increases of 3% in FY 2005, 4% in FY 2006, 3% in both FY 2007 and FY 2008, and 4% in FY 2009. These wage increases, which compound to 18.2%, mask some of the real achievement in controlling overtime as a portion of the overtime cost is attributable to higher wage costs and not necessarily more overtime hours.

The persistent focus on overtime and headcount control resulted in the Authority under spending its wage budget three out of the past 5 years:

MBTA Historical Operating Wages
FY2005 - FY2010

	Actual	Budget	Variance
FY 2005	$337,189,978	$330,428,857	($6,761,121)
FY 2006	347,845,647	343,313,908	(4,531,739)
FY 2007	353,664,245	354,756,887	1,092,642
FY 2008	361,508,443	358,513,203	(2,995,240)
FY 2009	402,881,584	411,542,419	8,660,835
FY 2010	396,739,644	400,613,524	3,873,880

Straight-time versus Overtime Spending

In FY 2005, the Authority's overtime spending of $36.9 million represented 10.9% of total wages. The significance of the following reduction of overtime as a percentage of total wages is that the Authority has been able to produce more hours of service by paying straight-time instead of overtime:

MBTA Overtime Cost as a Percentage of Total Wages

FY 2005	**10.9%**	**High**
FY 2006	10.0%	
FY 2007	8.5%	
FY 2008	6.7%	
FY 2009	**5.0%**	**Low**
FY 2010	7.4%	
Mean:	8.1%	

While there are seasonal and operational reasons why overtime will fluctuate from year to year, the Authority is trying to replicate the 5% ratio it achieved in FY 2009. As service demands increase, however, and the workforce numbers stay static, it is difficult to do so.

Group Health Insurance

Health insurance is the most costly fringe benefit. Group insurance comprises 9.4% of the Authority's total operating expenses in the FY 2011 budget.[5] Beginning in the early 90s, the cost of healthcare rose from 15% of wage expenses ($36.9m/$246.3m) in FY 1991 to a high of 30% of wage expenses in FY 2010 ($118.7m/$396.7m). Healthcare expenses increased 221% over this period or 11.6% per year.

Until the passage of Transportation Reform legislation in 2009, group health insurance was a benefit negotiated with MBTA labor unions. Both co-insurance contributions and plan design, including deductibles and co-pays, were established by collective bargaining. MBTA employees had the following co-insurance amounts before the legislative change (see chart below). Unionized employees' co-insurance amounts change to 20% or 25% depending upon date of hire under Transportation Reform only after their expired collective bargaining agreements are renegotiated.

MBTA Employee Co-insurance Amounts Prior to Transportation Reform

Unionized employees	15%

[5] The FY 2011 healthcare budget is $113.7 million; wages are $396.3 million; total operating expenses are $1.2 billion.

Non-union employees hired prior to July 1, 2003	20%
Non-union employees hired since July 1, 2003	25%

While unionized employees' co-insurance was equal to Commonwealth employees (15%) in 2003, the Authority imposed higher co-insurance amounts than the Commonwealth on its non-union employees beginning in July 2003 by assessing 20% and 25% co-insurance.

For many years, Authority retirees received free healthcare. The Authority concluded an interest arbitration in 2008 with its largest union, Local 589, and received a historic concession. The arbitrator imposed a 10% co-insurance on Authority retirees after July 7, 2008.

In addition to retiree co-insurance, the arbitrator imposed a number of plan design changes:

- Office visits from $5 to $20
- Emergency room visits from $25 to $50
- Prescription drugs (34 day supply) from $3 generic and $4 brand name to $5 generic, $15 preferred brand, and $20 non-preferred brand
- Prescription drugs by mail (90 day supply) from $5 generic and brand name to $10 generic, $30 preferred brand, and $40 non-preferred brand

Labor Relations estimated savings to the Authority during the two remaining years of the collective bargaining agreements to be $5.6 million for FY 2009 and $6.6 million for FY 2010. Savings in retiree health would continue to rise as the retirees with 100% healthcare are replaced by retirees paying co-insurance.

The healthcare landscape at the Authority changed dramatically with Transportation Reform. Healthcare is no longer a mandatory subject of bargaining and the MBTA workforce and retirees will have its coinsurance amounts, plans, and plan design determined by the Group Insurance Commission (GIC). As collective bargaining agreements expire, the MBTA workforce and retirees formerly affiliated with those workforces will migrate from MBTA plans to GIC plans. The transfer process to date appears below:

MBTA GIC Participation

Date of Transfer	Employee Group/Union		Number of Employees
January 1, 2010	Non-union employees		235
July 1, 2010	Locals 104	Electrical Workers	74
	Local 600	Inspectors	307
	Lodge 264	Machinists	396
July 1, 2011	Local 105	Technical Engineers	111
	Local 453	Managers	322

Local 651	Blacksmiths	8
Local 717	Electrical Workers	40
Building and Construction Trades (multiple trade unions)		389

Notes: Retirees affiliated with the employee groups joined or will join the GIC on these dates. Employee count is as of February 15, 2011.

The GIC savings for the groups of employees listed above are expected to total $7.1 million in FY 2012. The Authority anticipates $31 million in savings annually when all the unions and their retirees have transferred to the GIC.

Pensions

Much has been written in recent years about the high cost of public employee pensions. These pensions, which are almost always defined benefit plans, have burdened government with almost uncontrollable costs and when added to rising costs of health insurance, have created a crisis in public sector compensation. The Authority does not participate in Chapter 32 funds but rather negotiates two defined benefit plans: the MBTA Retirement Fund and the MBTA Police Association Retirement Plan.[6]

Pension costs at the Authority are driven by changes in compensation (contributions are a percentage of salary), negotiated pension improvements, the actuarial performance of the plan, and pension eligibility requirements. While the pension cost in the FY 2011 budget is $58.5 million, pension expenses as a percentage of total operating expenses have remained remarkably constant over the past twenty years. Pensions in FY 1991 represented 5.5% of total operating expenses and in FY 2010 represented 4.8%. During this twenty year period they ranged from as low as 3.0% of operating expenses to as high as 5.9%. Pensions experienced an average annual increase of 3.9% vs. 5.9% for operating expenses between FY 1991 and FY 2010.

Nonetheless, pensions expressed as a percentage of wages during this period ranged from a low 7.9% in FY 2003 to a high of 14.7% in FY 2007. Pensions as a percentage of wages in the FY 2011 budget are 14.8%. Their average annual increase (3.9%) has outpaced wages which have grown by 3.2% annually since FY 1991.

The Commonwealth in its Transportation Reform legislation in 2009 established an eligibility requirement for retirement in the Authority's MBTA Retirement Fund. Instead of the existing early retirement eligibility of 23 years of service, the new legislation imposed a 25 years of service and age 55 requirement for new hires. This new requirement is not in force yet because the pension agreement which expired June 30, 2010 has not been renegotiated. When it is, the Authority will, over the next 25 years, begin to see a modest amelioration of its pension costs.

[6] The Authority also offers a defined contribution plan to certain unionized employees and non-union employees electing not to participate in the MBTA Retirement Fund.

Workers' Compensation

The Authority has experienced dramatic savings in workers' compensation over the past twenty years. Workers' compensation actually cost the Authority slightly less in FY 2010 than in FY 1991 as the chart below indicates:

The relatively flat costs are also evident in relevant budget comparisons over the past twenty years. Workers' compensation represented 1.7% of total operating expenses in FY 1991 and 0.8% in FY 2010. As a percentage of wages, workers' compensation represented 3.9% in FY 1991 and 2.4% in FY 2010.

The Workers' Compensation Department continues to experience the benefits of its cost containment management style, which was introduced over a decade ago, as it improves its investigative techniques both internally and externally. The cumulative effect of the Department's aggressive investigation of workers compensation claims has realized a constant reduction in the number of industrial accident claims as the chart below illustrates over a ten year period:

Workers' Compensation Injuries between FY 2000—FY 2010

Year	Reported Lost Time Injuries	Reported Medical Only Injuries
FY 2000	559	1,044
FY 2005	442	997
FY 2010	349	919
Percentage Decrease	**37.6%**	**12.0%**

Internally, the Department investigates claims in conjunction with the injured employee's area supervisor(s) and witnesses, Safety Department, Human Resources Department, Police Department, Labor Relations and Payroll. The institution of the MBTA's Attendance Policy has also proven to benefit the reduction in lost time from work. In recent years, the ability to have access to the Authority's security videotapes on busses and in stations has also proven to be of great benefit in determining the validity of an employee's injury.

Externally, the Department continues to investigate claims utilizing the resources of experienced private investigators. The Department also continues a working relationship with the Massachusetts Department of Revenue and the MBTA's Retirement Board in pursuing validation of legitimate claims and ensuring that the workers compensation offset, which the Authority received in the Transportation Reform Legislation, is applied.

The Department underwent a major transition in late September and early October 2010 in claims processing. After twenty years utilizing the same software to run the electronic claims system, the Department, in conjunction with Information Technology,

upgraded and designed its own program in PeopleSoft to improve its claims processing and communications within the MBTA.

Materials, Services, and Supplies

Controlling Energy Costs

The Authority is largely held captive by escalating energy costs, which have increased 126.2% (12.6% annually) since FY 2000—from $41.4 million in FY 2000 to $93.5 million in FY 2010 (see Tab D—*Fuel and Utilities by Department FY2000—FY2011*). Nonetheless, the Authority has achieved some success in controlling the risk inherent in energy costs.

Fuel Hedges

As a large consumer of fuel and energy, the Authority faces significant price volatility in the fuel and energy markets. In an effort to reduce that risk, the Authority actively hedges fuel costs, primarily diesel and natural gas, in order to create cost certainty and reduce the impact of fuel price volatility on the operating budget. For example, although the Authority was adversely affected by price increases in the commodities markets during FY 2008, partial fuel hedges on diesel mitigated these price increases by over $8 million. In addition, the Authority locked in prices for natural gas for FY 2008, eliminating the risk of price increases for that fuel. The Authority also hedged 100% of diesel consumption in FY 2009 and was able to secure a fixed price for compressed natural gas for September 2008 through June 2009. In FY 2010, the MBTA hedged 50% of the diesel volume through a financial hedge and 100% of the natural gas supply through a fixed rate contract with the supplier.

For FY 2011, the MBTA hedged 100% of diesel volume through four financial hedges at an average price of $2.07/gallon insulating the budget from the recent increase in oil and diesel fuel. Natural gas is not hedged for this fiscal year but continues to be priced at historic lows.

There are no hedges in place for FY 2012, although the MBTA continues to monitor the market and may enter into a hedge on diesel and/or natural gas either before or during FY 2012.

Electricity

The Authority is also the largest consumer of electricity in the Commonwealth. In FY 2008, the Authority's fixed price contract, which was below the market rate, expired. A similar contract was not available, so a new contract was entered into pegging the price of electricity to natural gas. The Authority manages this contract by locking in future prices as market conditions warrant.

Compressed Natural Gas Tax Credits

In 2001, Congress passed a tax credit to encourage the use of CNG in fleets. In an effort to increase non-fare revenue and offset rising fuel prices, the Authority successfully applied for and received over $7.6 million in refunds. That tax credit expired in the end of

2009 but Congress in the Middle Class Tax Relief Act of 2010 extended two key incentives for natural gas vehicles through 2011: (1) the 50 cent per gallon tax credit for compressed and liquefied natural gas when used as a vehicle fuel and (2) the investment tax credit for alternative vehicle refueling property, including natural gas stations.

The natural gas tax credit for vehicle fuel use resulted in $2 million retroactive to 2010 and $2 million in 2011. The investment tax credit for alternative vehicle refueling property covers 30% of the cost or $30,000, whichever is less.

Environmental Compliance

Over the course of the past several years, the Environmental Department has implemented a number of programs that were designed to meet environmental compliance requirements and/or reduce impacts. Many of these programs have the serendipitous effect of reducing the operating costs at facilities. Many of the reductions in operating costs are specifically quantifiable. The majority of these programs were the direct result of the MBTA's Environmental Management System (EMS), where the Environmental Department audited facilities and spent significant time examining how our operating facilities perform their day to day activities so as to find ways to reduce impacts and improve environmental efficiencies. These audits resulted in plans and programs to reduce impacts and correspondingly, reduce costs.

Waste Disposal

One of the cost saving ideas that came out of these audits involved how the Authority disposes of waste. The MBTA typically pays outside vendors to haul away materials, either as solid waste or, when necessary, as hazardous waste (which is typically more expensive). Much of the MBTA's waste, however, has a value to other parties. Because of this value, the Authority found ways to have someone take the material away for free or, in certain cases, pay the MBTA for the waste products. Examples follow:

a. **Electronic Recycling** (e.g., computers, printers, electronic equipment, etc.) Electronic waste cannot, by law, go into the trash and so the MBTA typically spent money to pay a disposal firm to take the material away. As an example, the Authority recently paid $1,400 to have a contractor remove 12 pallets of computers and monitors. Those materials are often resold and reused by the disposal firm. The Authority determined that it could offer this material to an electronics recycling firm to avoid disposal costs and save money. So far in FY 2011, staff has recycled almost 75,000 lbs of nickel cadmium batteries, computers, and appliances that were either generated by the MBTA or picked up along the right of way. Staff estimates that this electronic recycling saved the MBTA $34,000. The amount disposed of represented a small amount of the MBTA's ongoing electronic disposal needs, so this program is being expanded as much as possible.

b. **Scrap Metal**
The Authority has placed scrap metal dumpsters at facilities so that this material could be segregated from the rest of the trash. When not segregated, the Authority pays for someone to take it away as solid waste (typically at a rate of $85/ton). With scrap metal recycling in place, someone now takes it away for free due to its value. For example, previously, brake drums, which weigh up to 100 lbs and which the Authority uses hundreds of a year, would be thrown in the trash and taken away as solid waste, which we typically pay by the pound. These drums are now placed in the scrap metal dumpsters and go off as recycled waste.

c. **Rail Cars**
Old Maintenance of Way vehicles (tampers, prime movers, etc.) were sitting on site at facilities in violation of the storm water regulations. After the EMS audits, staff was able to have a company take them away and pay the Authority $46,000 for the scrap.

d. **Waste Oil**
Previously, the Authority paid a nominal amount to dispose of used waste oil ($1 per year). As of January 2010, a firm now pays the MBTA $0.35/gallon for used waste oil. Staff anticipates generating about $20,000 this calendar year from this change.

e. **Newspaper Recycling**
In 2006, the Authority initiated a newspaper recycling system with Abitibi. Abitibi provides the Authority with large bins for customers as well as cleaning crews for the disposal of newspapers. Abitibi pays the Authority a small amount for placing the bins on the property. More importantly, however, without the recycling, the Authority would have to pay to have these papers taken away as a solid waste—a cost the Authority now avoids. To date, the Authority has avoided the cost of nearly 3,500 tons of newspaper disposal which would normally be sent off site at a rate of $85 to $95/ton.

Energy Conservation

Greater emphasis is being placed on energy management, where the MBTA focuses on reducing its consumption as well as generating its own electricity where possible.

a. **Utility-Based Energy Conservation Programs**
Utilizing the utility-based energy conservation programs, the MBTA, in CY 2011, performed $550,000 worth of energy upgrades, 70% of these costs were paid by the local utility. The upgrades (predominantly lighting upgrades) were performed at five facilities (two bus garages, Police Headquarters and two office buildings). The estimated annual energy savings are 1.6 million kilowatt-hours per year of electricity avoided which translates to an annual savings of $206,000/year.

b. **Renewable Energy Systems**
Renewable energy systems are going in place at Kingston and Bridgewater (wind turbines). Assuming a modest increase in the cost of electricity (3% per year), a 100 kilowatt turbine at Kingston is anticipated to save the Authority $800,000 over a 20 year period while the Bridgewater turbine will save $2 million over a similar timeframe. The turbines are funded 100% by outside sources.

c. **Design Standards for Energy and Water Consumption**
New design standards for energy and water consumption are implemented in design and construction projects. Wastewater recycling and solar energy are part of the Orient Heights project about to go to bid. A geothermal exchange system for heating is part of the Hingham Intermodal facility about to be bid as well. These environmental design standards focus on building facilities that consume less electricity or water and as such, result in lower operating costs in the new facility.

Hazardous Remediation and Materials Management

During construction, as well as during track and systems maintenance, the MBTA generates large amounts of soil and spoils (debris, ballast, etc.) that is frequently characterized as a hazardous waste and therefore must be handled and disposed of at a premium. The Environmental Department has established standard specs and protocols to minimize the cost of soil and hazardous material disposal, including:

a. **Rewriting Construction Specifications**
Staff is rewriting contract specification to require contractors to re-use as much material as possible on site, and when offsite disposal is needed, mandate the least costly disposal option. For example, 1,000 tons of soil and debris were left on site at Orient Heights Yard. Instead of paying for offsite disposal of materials at $50/ton, we reused the material as backfill on construction contracts. This is now a standard specification for Design and Construction and an increased practice of Systemwide Maintenance & Improvements (SMI)—a division of Engineering & Maintenance.

b. **Use Limitations**
The MBTA has been more aggressive about finding ways to limit the amount of money spent on property cleanup while at the same time meeting compliance requirements. Activities in Use Limitations (AUL), which place a restriction on the future use of the property, have become common. If a parcel is used as a maintenance facility, and is likely to be a maintenance facility for some time, it makes sense to restrict the future use of the site, so that we do not have to clean it up as much. AUL's have been placed on twenty sites, saving hundreds of thousands of dollars in clean up costs as compared to leaving the properties unrestricted.

c. **Cost Recovery**
Much of the Authority's contaminated property was contaminated by the prior owner (typically former railroad companies). We have begun seeking cost recovery from these entities to pay for the costs we expend to clean up contamination caused by them. To date, we have received $2.35 million from the prior owner of Readville Yard.

Effective Contract Management/Less Reliance on Consultants

Standard practices were put in place to try to find more cost effective ways to perform our compliance responsibilities, using fewer outside consultants, and using consultants more efficiently. For example:

a. **Audits**
The EMS requires that independent third party, outside audits be performed on each of our facilities to ensure compliance once every three years. This would typically be performed by consultants at an estimated cost of $1.5 to $2 million per three year audit. Instead, the MBTA is utilizing the EMS Consortium at UMASS/Lowell to perform the work at a cost of $40,000.

b. **Environmental Inspections**
Training staff to perform environmental inspections as opposed to outside consultants (when in-house inspections are allowable) has been cost effective. Additionally, the Authority has coordinated training with MassDOT Highway Division to combine training that both agencies need (e.g., Environmental Compliance, Hazardous Materials, Underground Storage Tanks, Hazardous Waste Manifests, and Environmental Management, etc.). The MBTA provides training slots to the Highway Division employees and they do the same for us so as to not duplicate the expense of the required training.

c. **Spill Standards**
Establishing new formatting and standards for spill plans and other documents that can be reviewed and updated in house has been cost effective. Previously, all spill plans were developed and updated by consultants. A spill plan is needed for 14 maintenance facilities and 38 Power Substations. An update by a consultant would typically cost $10,000 to $15,000 per facility every three years.

Outside Funding Sources for Emissions Remediation

The Environmental Department has been seeking outside grants to support much of the work needed by the Authority to reduce its emissions. To date the Authority has received the following:

- $1,100,000 from the 2009 EPA Diesel Emission Reduction Assistance Program (DERA) for locomotive upgrades to reduce idling

- $150,000 from 2008 DERA Funding for improvements to the locomotives

- $800,000 from 2010 DERA Funding for locomotive upgrades

- $2.5 million from the Federal Transit Administration (FTA) for renewable energy

- $300,000 dollars from the Attorney General's Office (AG) for locomotive improvements. These funds were the result of a multi-state settlement with a power company. These funds are available to come to the MBTA as a result of fines and penalties that the EPA imposed on other parties (typically private parties) due to compliance violations, in lieu of paying a monetary fine. The MBTA works with EPA, the Massachusetts Department of Environmental Protection (DEP), and the AG to be positioned to have our projects funded as a project in lieu of penalties from these private entities.

- FTA EMS Grant – The Environmental Department applied for and received two separate grants from FTA for the EMS training. The grant provided extensive training over the course of three years to 16 employees. Given that the EMS is a requirement of a judicial consent decree, if this training wasn't paid for by FTA, we would have had to hire consultants to develop an extensive training program for these same employees.

Environmental Recommendations for FY 2012 and the Future

Through the course of the EMS and other programs, the Environmental Department believes there are opportunities to expand these programs or develop other programs. These opportunities include the following:

a. **Scrap Recycling**
Create a more comprehensive scrap recycling program at all of the facilities that includes segregating into material types to maximize values. Currently scrap precious metals (e.g., wheel truing scraps) are thrown in the same dumpster as lower value scraps. If they were segregated, they would have a greater value.

In general, most of the scrap and waste recycling initiatives described above can be expanded. Electronic waste is abundant and is constantly being generated or picked up off the right of way. Old vehicles and other materials described above are stored to some degree at most facilities. Scrap metal is constantly being generated as well. Old or broken windshields from buses currently go in the trash, but we may be able to recycle these through a glass recycling company. There are hundreds of these very heavy windshields every year that we pay to dispose of as solid waste. More comprehensive recycling programs can be developed that could maximize the amount of materials we recycle as scrap. As part of a comprehensive program, better quantification and invoicing of the waste stream by the vendor should be implemented to track cost avoidance.

b. **Energy, Water and Fuel Metering**
Currently tracking of fuel and utility usage is accomplished through invoicing data (we total up information provided on invoices) there are few if any meters at facilities. If electricity and/or water were metered, we would be able to identify unusual spikes in usage that could then be rectified. We could also identify illegal tie-ins. Additionally, we could review resource intensive operations to find alternatives that require less energy. On a very old, and very energy intensive system like the MBTA, there are certain to be many opportunities to reduce energy costs, but a lack of information on specific usage makes that difficult if not impossible. This holds true for electricity, water, fuel usage as well as steam and natural gas.

c. **Fuel Switch**
Currently, Bus Operations uses #1 Ultra-Low Sulfur Diesel (ULSD) which is a high grade, very light blend of diesel. The Environmental Department believes that switching to #2 ULSD would result in the same emissions, have the same operating characteristics on the buses, yet cost approximately $0.15/gallon to $0.20/gallon less than #1 ULSD (the differential between the two fuels fluctuates across the year but it appears that this is the average range conservatively). Bus Operations currently uses approximately 11 million gallons of fuel annually, so the cost savings would be $1.65 million to $2.2 million per year.

In the 1970's and 1980's, diesel engines would have a difficult time starting in cold weather when using #2 diesel. Engines and filters frequently needed additional maintenance as well. Advances and changes in the fuels have resolved these issues and there is now little difference in the operating characteristics when using #2 ULSD. Other large transit agencies, particularly in cold weather cities like New York, Buffalo and Minneapolis, currently use #2 ULSD and have not had issues.

The General Manager authorized a fuel switch pilot program at one garage during the 4th quarter of FY 2011. If the pilot demonstrates that the switch will not affect engine performance and the ability to make pull outs, the Authority will make the switch at all garages.

Engineering and Maintenance
Power and Transit Facilities Past, Current and Future Efficiencies

The following represents cost savings, efficiencies and short term opportunities identified by the Power and Transit Facilities Division of Engineering & Maintenance:

Natural Gas Cost Savings

On April 6, 2006, the MBTA issued a contract to Amerada Hess to supply natural gas to Power and Transit Facilities (PTF) and Bus Operations over a five-year period, at a total

cost of $57,238,080. Of this total, the amount of $20,033,328 was allocated to PTF for system-wide building and facility heating. This contract is for a basis price with the price to be settled in the natural gas spot market. At the time of the award this was the preferred alternative of obtaining natural gas through the regional supplier Keyspan. This offered the MBTA an immediate savings of **$3,000,000**.

Conversion from Oil Heat to Natural Gas at MBTA Facilities

The mechanical maintenance department has been systematically converting MBTA facilities that utilize oil heating systems to ones that use more efficient natural gas heating systems. Over the past 2 ½ years, they have converted Lynn and Quincy Bus Garages as well as the Orient Heights Car House. Executing these conversions is not only more environmentally friendly but it has resulted in significant savings to the MBTA totaling **$648,482** over that time period.

Light Fixture Retrofits

Power and Transit Facilities embarked on a joint effort pilot program with the MBTA Environmental Affairs department and NStar to take advantage of rebate programs in place for the retrofit of inefficient light fixtures. Locations in the pilot program include Quincy, Cabot, Charlestown, Lynn and 500 Arborway. Measurable consumption information is available for 500 Arborway thus far with savings data to come in the near future for other retrofit locations.

Under this program the MBTA was responsible for 37% of the project cost. Since the completion of the project in August 2010, the electricity cost for 500 Arborway has dropped by an average of 24%, roughly **$2,700** per month, and **$32,400** per year. At this rate of savings, the project cost to the MBTA will be paid off in October 2011. Building off of the success of this project, PTF is working closely with the Environmental Department to roll out a full scale system wide initiative to address all MBTA buildings and facilities with anticipated annual savings in the **$300,000 to $500,000** range.

Wholesale Electricity Contract "Blend and Extend" Strategy

In FY 2011 wholesale electricity prices have been very advantageous. Currently the MBTA has hedged over 90% of the price allowing just a small portion of the price to benefit from this favorable market. PTF has proposed a "blend and extend" strategy. In this scenario, the new supplier would buy down the price for the last two years of the remaining contract in exchange for a higher price in the last three years of an overall five year contract keeping the average amount over the new five year term less than what the MBTA is currently paying. If this plan is approved and executed it could save the MBTA **$8.6 million** through December 31, 2012.

Quick Order System for Electrical Component Supplies

To ensure expedient receipt of electrical components to maintain carhouses, garages, stations, and buildings throughout the Authority, the MBTA has employed a Q-Order, or Quick Order, procurement system. This is a purchasing tool that allows authorized employees of designated user departments to order directly from a supplier.

The Materials Management Department awards a single, blanket style contract, with a price ceiling. Pricing and item numbers are firmly established at the onset of the contract as a result of the procurement process. After contract start-up, user departments order individual items as needed from the supplier under separate releases. This feature eliminates the need to issue single requisitions and wait for individual purchase orders. Items routinely ordered include lamps, terminals, conduit, wire, cable, fittings, fuses, circuit breakers, ballasts, electric heaters, and safety switches. Operations Support and Signals and Communications field personnel use these parts during routine maintenance calls.

The low bidder (GEXPRO) on the current electrical component supply contract offers a **63.25%** discount compared to industry standards for wholesale electrical components and supplies. Because of this discount, the Authority is able to buy electrical supplies with an annual book value of $884,354 on a budget of $325,000 for electrical supplies, thus saving **$559,354** annually.

Scrap Metal Revenue Account

In October of 2010 the Engineering and Maintenance Directorate embarked on an initiative to utilize revenue received from scrap metal generated by Power and Transit Facilities and Systemwide Maintenance & Improvements. These revenues have been specifically earmarked to fund high priority vehicles. The first such purchase will support the procurement of two specialized work vehicles for the Bus Stop Sign repair team at a total cost of $52,752.

There are multiple benefits to this program. First, these vehicle purchases will come at no additional cost to the MBTA in the current or future fiscal years. Secondly, this allows E & M to proactively address the greatest needs in its aging non-revenue vehicle fleet. Finally, E & M employees now have a tangible incentive to ensure every piece of scrap metal is disposed of properly to ensure the greatest possible revenues.

It is anticipated that the annual revenues will be in the range of **$150,000 to $200,000** annually. This results in a savings as vehicle and equipment purchases will not be expended against current or future operating budgets.

Lumber and Hardware Supply

PTF supervisory personnel have met with suppliers approved under the state blanket to make the procurement process for lumber and related hardware more efficient and less costly. Working in conjunction with the MBTA Materials Procurement department, PTF has

negotiated a **31% discount** (versus retail) with Curtis-Newton Lumber of Dedham, MA to supply lumber and materials to our Transit Facilities department. With a budgeted annual amount of $150,000, it equates to an annual book value of $217,391. The 31% discount results in an annual savings of **$67,391.**

Total Power and Transit Facilities Savings

A two year savings summary for the initiatives described herein appears below:

2 YEAR SAVINGS SUMMARY FOR POWER AND TRANSIT FACILITIES		
TYPE	DESCRIPTION	AMOUNT
UTILITY	NATURAL GAS COST	$2,250,457
UTILITY	CONVERSION OF OIL HEAT LOCATIONS	$648,483
UTILITY	LIGHT FIXTURE RETRO FITS	$550,000
UTILITY	WHOLESALE ELECTRICITY "BLEND AND EXTEND"	$8,600,000
MATERIALS	QUICK ORDER SYSTEM FOR ELECTRICAL SUPPLIES	$1,120,000
EQUIPMENT	NON REVENUE VEHICLES	$350,000
MATERIALS	LUMBER AND HARDWARE SUPPLY	$130,000
	TOTAL SAVINGS	$13,648,940

Engineering and Maintenance
Systemwide Maintenance & Improvements Past, Current and Future Efficiencies

Station Cleaning

The scope of cleaning functions for all stations and facilities is being revised to maximize efficiencies by introducing a geographic approach to bidding the cleaning contracts. The new scope will take into account economies of scale when combining stations and facility cleaning areas to better align the responsibilities of cleaning and help monitor compliance in a more efficient manner. The projected savings could be as high as 10% which could yield savings of **$3 million** annually.

In-House Radio Maintenance

SMI is conducting a pilot program to provide an in-house capability to repair and maintain two-way radios versus contracting with a third party service provider. SMI is in the process of hiring seven technicians and the pilot program is projected to net annual savings of **$625,000.**

Switch to Internet Protocol (IP) Phones

This 45 High Street pilot program focuses on the potential to substitute 110 ISDN phones at 45 High Street with Internet Protocol (IP) phones for a projected savings annually of **$59,400**. Should the pilot program prove successful, SMI will investigate expanding it at other MBTA networked locations.

Merging Cell Phone Minutes for MBTA, MASSDOT and MASSPORT

Merging all cell phone minutes affords an opportunity to earn significant savings for both Verizon and Sprint cell phone minute usage allowances. The potential exists for savings in the neighborhood of **8 – 10%** off what each agency is currently paying for cell phone expenditures on an annual basis.

Capital Budget Savings Initiatives

Telecommunication Revamping of Voicemail System

In the near future the MBTA's Communications Division will explore the opportunity to replace the current voicemail system with an internet based system which would afford "independence" from the Verizon and other telecomm companies' expensive usage based voicemail systems. The one-time capital expenditure would free the MBTA from further rapidly increasing operational costs to maintain a leased system from a provider such as Verizon.

Eliminate Metro 4 X 4 Contract Training

The training contractor trained Local 589 equipment operators to properly operate and repair the $2.2M Metro 4 X 4 tamper machine purchased recently by the MBTA. Savings are projected to be **$200,000** annually.

Authoritywide Vendor Savings

The MBTA formally started a vendor cost reduction initiative in December 2009. Departments were asked to approach suppliers of materials, supplies and services to ask for a discount in prices and fees. The request was comprehensive and included suppliers of materials, contracted services, and consultants in the areas of engineering, architecture, accounting and financial services, IT services, actuarial support, legal services, risk insurance, health insurance, and property management fees.

The requests were reasonably well received and the response rate was in line with what would be expected from companies and firms doing substantial business with an entity as large as the MBTA. For example, Contract Administration sent out letters to 54 architectural and engineering firms asking for each consultant to voluntarily concede the

typically allowable 4% salary escalation for the duration of calendar year 2010. Of the 54 firms, 43 responded with 37 agreeing to the 4%, 5 agreeing with conditions, and 3 declining to participate.

The MBTA Law Department received a 5% reduction in law firm service agreement fees from 14 firms. The MBTA Real Estate Department received 10% discounts in consulting and legal fees and $150,000 over three years in management fees. The MBTA Treasurer Controller's risk management team negotiated over $600,000 in premium reductions over the last two fiscal years during their annual insurance policy renewals for their major coverages (property, liability, and terrorism). The MBTA Materials Department sent out 120 letters requesting a 4% reduction in prices and has received affirmative responses from 20 so far with reductions ranging from 2% to 6.3%.

In total, the Authority has achieved savings with its vendors in the amount of $10.5 million through FY 2016 distributed by year as follows:

MBTA Vendor Savings

FY 2009	$0.8 million	FY 2013	$1.1 million
FY 2010	$2.0 million	FY 2014	$1.0 million
FY 2011	$2.2 million	FY 2015	$1.0 million
FY 2012	$1.3 million	FY 2016	$0.9 million

Service Improvements and Operational Efficiencies

Service Improvements

The Authority has made a number of service improvements over the past several years including Greenbush commuter rail service, expansion of trips from Framingham to Worcester, key bus routes, new vehicles (buses, Blue Line cars, and Green Line cars), two car trains on all Green Line service, and adding RADs (run as directed) on both the Green Line and Red Line to cope with the crowding that the recent growth in ridership has produced. While increased fares through higher ridership have paid for a small portion of the increased costs, the service improvements have created budgetary challenges. Operations estimated that the cost of meeting increased ridership demand would be approximately $16 million higher in FY 2009 (and in subsequent years) than in FY 2008.

The Authority, at the time of the last fare increase, initiated a comprehensive service improvement program for the Key Bus Route network at the beginning of 2007. The Key Bus Route network was designed to complement the MBTA's light and heavy rail system and to ensure that all high-demand corridors had access to frequent transit service seven days a week. The primary goals of the Key Bus Route Improvement Program were to reduce crowding, improve service reliability, and to improve a customer's experience with updated schedules at bus stops and new shelters. The Authority made service enhancements on another group of high ridership bus routes which built upon the substantial improvements to the original Key Bus Routes.

Operational Efficiencies

In order to accommodate service improvements within budgetary constraints, the Operations Directorate has made a number of scheduling and assignment changes which have in the aggregate have produced substantial savings (largely wages) to the Authority (see Tab E—*MBTA Operations Directorate Cost Savings Initiatives*). The list begins in FY 2006 and extends through FY 2012. In total, the savings over seven years total $90.3 million—an average of $12.9 million a year. Reduction in staff is 155 positions.

In addition to the introduction of single person train operation (SPTO) which the MBTA first introduced on the Blue Line in 1996 and the Orange Line in 2010, Operations will be introducing SPTO on the Red Line in FY 2012. This will save $1.3 million on an annual basis.

Systemwide Modernization/Automated Fare Collection

The rollout of AFC in January 2007 provided the Authority with a dramatic cost reduction in labor. In the era of tokens as fare media, the MBTA had approximately 400 collectors assigned to subway stations. At current wage rates, this was a cost of $24 million

annually in wages alone. While the Authority initially retained most of the collectors, assigning them instead as customer service agents (CSAs), the Authority saw a reduction in their ranks through attrition from 2007 to 2011. Whereas there were 379 CSAs in January 2007, the Authority currently employs approximately 200. The wage cost for these CSAs is $11.7 million—a savings of **$12.3 million** over the use of collectors.

The Automated Fare Collection (AFC) Department is constantly looking at strategies to save on spending and different business models to realize savings for the Authority. The report in Tab F—*Systemwide Modernization/Automated Fare Collection Cost Reductions/Avoidance, Efficiencies, and Productivity Improvements*—illustrates important advances in the Corporate Pass Program, Retail Sales Program, and Web Programs (e-Commerce site and MyCharlie). The department has also produced savings in consumables and spare parts for AFC equipment, repair services, smartcard procurement, and Bill of Rights claims. The net savings to the AFC Department over this time period is **$2.1 million**.

Design & Construction Project Analysis Review of Transit Stations

In the past 10 years, the MBTA has been involved in multiple transit accessibility and refurbishment projects, all of which involved work in stations that are 75 + years old. In addition, all of these projects required upgrades and extensions to utilities buried in century old Boston streets with sketchy information on the actual utility locations. Recent projects such as Kenmore, State, Ashmont, Arlington, Copley, and Maverick Station Projects are typical examples of the nature and scope of this effort.

The major emphasis of these projects was to make the stations accessible. Based on available funding at the time, some upgrades to station elements and amenities were included. In some instances, however, Ashmont in particular, project budgets required that project finishes and other station amenities be deferred to a later date, and work performed in phases, with the thought that as funds became available, the upgrades to the station amenities would be added to the project scope.

For this group of station contracts, there were also several significant events during the progress of the work that occurred that could not have been fully anticipated at the time of the original awards. These events—implementation of Automated Fare Collection (AFC) and the MBTA entering into a settlement agreement with the Boston Center for Independent Living (BCIL)—caused significant changes to the project scopes as well as schedule changes.

Of greater impact, all of the construction work was performed while the stations remained open for service throughout the entire construction phase. This required a systematic piecemeal approach to the performance of construction activities to maintain service for MBTA customers. A phased construction approach limits the area available to the contractor to perform construction activities, resulting in a longer overall construction timeframe. When hidden and latent conditions are discovered during the work (e.g. during

demolition), the result is greater impacts to cost and schedule, due to the lack of flexibility to work in other areas while the issue is being resolved.

Cost / Schedule Performance Analysis Metrics

The MBTA Design & Construction department has performed an in-house review of the last 10+ years of transit construction projects. The analysis statistically determined the performance of transit station projects, summarized the risk trends common to transit station construction projects, and formulated risk avoidance strategies to preclude recurrence.

Twenty-two transit station projects were separately analyzed. Performance statistics were developed relative to cost and schedule as well as a summary of the associated risk trends. A summary of the results follows:

Cost Analysis Metrics

The cost analysis identified that transit station projects exhibit the highest amount of increase in construction costs of any project that the MBTA performs. Other types of projects performed by the MBTA include bridges, commuter rail upgrades, maintenance facilities, etc. On average, transit station construction exhibited a 24.67% increase in cost, ranging from a low of 5.09% to a high of 73.45%.

Schedule Analysis Metrics

The schedule analysis identified that transit station projects, on average, exhibit schedule growth impacts of 80.36%, much more than any other type of project performed by the MBTA. Ranging from a low of -0.34% to a high of a 324% increase in planned schedule performance was calculated.

Major Drivers for Cost and Schedule Growth

The major reasons for the increase in project cost and schedule delays resulted from:

1. Budget considerations
2. Additions / Modifications to Project Scope
3. Differing Site Conditions
4. Work in stations open for operations
5. MBTA driven changes

Budget Considerations

Oftentimes, project funding is not available to completely address the total scope of work required to renovate the station. As a result, the station renovation is performed in phases, with work performed by different contractors. Performing work in this manner results in extended construction durations due to having to put out multiple contracts, and higher overall costs due to the time value of money. An example of this is Ashmont Station. Due to

funding issues, the station renovation was segmented with the initial contract providing a basic accessible station, followed by a station finishes contract.

Additions / Modifications to Project Scope

During the execution of the construction contract, additional scope elements are frequently requested and provided. Added scope elements can originate from a number of sources, and usually have an impact on costs and overall schedule duration. Contracts that have had significant additions/modifications to project scope are Kenmore, State, Arlington, Copley, Ashmont, and Maverick.

Differing Site Conditions

Differing site conditions represent a major driver of cost and schedule. Working in 75+ year old stations with unknown conditions behind walls, floors, and ceilings is one source of differing site conditions. It is not practical to demolish areas of the stations in advance of the construction contract to obtain certainty of the existing conditions. Record drawings are relied upon to provide this information. Over the years, modifications to the stations have been made, to maintain operations, which were not recorded on as-built documents. In addition, materials that require special handling such as lead and asbestos are frequently discovered behind covered up areas in greater quantities than expected. Selective demolition during the design phase is not always conclusive and does not always prevent the discovery of differing conditions during the construction phase.

Outside the station, utility locations are often unclear from utility as-built drawings. In many instances, the discovery of undocumented utilities during construction requires a complete utility re-design resulting in significant delays to the schedule and increased costs. Projects that have experienced these types of issues are State Street, Kenmore, Arlington/ Copley, and Maverick.

Work in Stations Open for Operations

All of the recent transit station construction projects were performed while maintaining the station open to service MBTA customers. In order to perform work in this manner, severe restrictions are placed on the contractor that limits the work that they can perform. A construction staging plan is developed to advance the work in a piecemeal fashion so as to not impact the normal operations of the station. Work that can't be conducted during normal hours of operations is required to be performed at night on non-revenue time, or on weekends with a bus diversion in place. Planned night work and weekend diversion work is subject to weather conditions, and ongoing operational issues that may prevent the planned weekend diversion from taking place, resulting in construction schedule delays.

MBTA Driven Changes

In the past, there was a lack of close coordination with other MBTA departments. The Design and Construction Project staff and Design Engineers needed to interface with

other departments such as Operations, Safety, and Environmental to identify the needs of each department to ensure that the finished project was efficient and optimal for operations. Issues or concerns were often not picked up in time and had to be addressed with change orders during the construction phase rather than during the design phase. MBTA Design & Construction Senior Management identified this as a problem and has created the Project Development Group (PDG) approach to project development. The PDG is a committee of all MBTA Departments with review and approval authority over the station designs. No project is bid now without approval of all affected Departments. The implementation of PDGs has already proven to be and will continue to play a vital role in improving the Station Modernization program for the MBTA.

Recommendations

1. Continue the use of Project Development Groups.

2. Employ alternate project delivery methods for projects such as Design-Build and Construction Management at Risk, in addition to the standard design-bid-build method currently in use at the MBTA.

3. Consider the temporary closure of stations during the performance of the major construction activities to achieve benefits in cost, and to reduce the extended construction durations required with an open station.

4. Obtain necessary funding to be able to address all of the station elements under a single contract rather than in a phased approach.

5. Pursue a policy of strict adherence to the contract scope and defer added scope elements.

6. Require additional condition assessments including test pits, utility survey and sub surface examinations. Utilize utility specialists to identify conditions that may not be easily identified on as-built drawings that may potentially be seen using other advanced technological methods (i.e. 3-Dimensional Imaging). Place a value on providing more resources up front in design to ensure a cost/schedule return on investment in the construction phase.

7. Continue the expansion of the projects controls initiatives that have been put in place over the last 3 years to better control project costs and schedule.

Current MBTA Project Controls in Place

The following is a summary of the project controls that have been instituted over the last three years at the MBTA to improve oversight of the Design and the Construction Management functions. This oversight has been initiated to better control and monitor contracts with design consultants as well as with construction contractors. In addition, a number of added future Project controls initiatives are being developed to further enhance MBTA oversight and better assure that projects are completed on time and on budget.

The MBTA already has many of the most essential aspects of project controls in place and is actively using these as tools to manage projects. First and foremost, over a year ago, we created an internal MBTA position for a Project Controls Manager. In this role, the Project Controls Manager has direct oversight of our project controls functions and the staff of outside consultants to accomplish the objectives of the MBTA.

The establishment of an internal Project Controls Group was recommended in the February 2010 FTA review of the MBTA Design and Construction Department. The MBTA is in the process of adding two additional staff to support this effort. Discussions with personnel of the MassDOT Accelerated Bridge Program (ABP) indicate that the establishment of an in-house Project Controls Management Group was a requirement of the Accelerated Bridge Program legislation, which stipulates that an internal project controls function be established.

Design Phase Project Controls

The MBTA:

- Requires designers to provide monthly design schedule updates, providing coordination tools between the sub-consultants, stakeholders, and the MBTA departments.
- Requires designers to provide "bottoms up" cost estimates at each design stage.
- Requires that contract time determination studies be provided by the designer using the cost estimates as a basis.
- Has implemented a senior level construction cost estimate review session in which the designer and the estimator present key aspects to the MBTA.
- Has started to implement risk management evaluations on some of the key projects.
- Has implemented a Cost Estimate Reconciliation Workshop comparing two cost estimates.
- Has a program for reporting design project monthly progress, via a monthly update report prepared by the Project Manager, that includes a definition of the project scope, cost and schedule status, design amendment status information, cost exposures, major work completed, major work in progress, and a definition of pending issues.

Construction Phase Project Controls

The MBTA:

- Requires cost and resource loaded Critical Path Method (CPM) schedules as a requirement from the contractor and for these schedules to be submitted monthly. This requirement has existed in the MBTA specifications for over four years now, but has only within the last 2-3 years been supported by monthly reviews from schedule consultants, and coordinated by the MBTA Project Controls Manager.

- Utilizes construction scheduling professionals to assist Resident Engineers and Project Managers in schedule reviews, claims support, and contractor negotiation support.
- Insists that contractors use Primavera (or approved equal) for all schedule submittals, even for the smallest of contracts.
- Utilizes construction scheduling tools to evaluate schedule recovery efforts on many of their key projects.
- Utilizes access restraints and interim contract milestones on projects.
- Has implemented a VECP requirement into their construction specifications.
- Has implemented a requirement for the escrow of bid documents on construction contracts to assist in the resolution of claims.
- Has implemented change order and claims training.
- Documents "lessons learned" from past projects and communicates these lessons to project managers and support staff.
- Has a program for reporting construction project monthly progress, via a monthly update report prepared by the project manager, that includes a definition of the project scope, cost and schedule status, claims and change order status information, cost exposures, a forecast of the potential construction and overall project cost, major work completed, major work in progress, and a definition of pending issues.

Future MBTA Project Controls Initiatives

Future MBTA design phase project control initiatives include:

- A claims avoidance review process on selected projects.
- An enhanced constructability review on selected projects and reach out to other transit related personal to take part in a focused design review for constructability.
- An earned value design development reporting system that monitors and tracks design consultant progress on a monthly basis. This process will also include a configuration management element to document scope modifications made during the design phase.
- Expanding the use of value engineering to require for all projects in excess of $2 million.
- A risk management process that will factor in multiple risk factors to provide statistically relevant project cost ranges for establishing construction and project budgets.

Future Construction Phase Project Controls Initiatives

Future MBTA Construction phase project control initiatives include:

- Working with MassDOT to develop a standard documentation control and work-flow process.
- Completion of the construction project trend reports that are in process to analyze cost and schedule drivers on projects completed in the last 10 years. This information is being sorted by facility type (e.g. commuter rail projects, station projects, bridge projects, maintenance facilities, etc.) to provide type specific information.
- Receipt copies of applicable studies that the ABP PCU is generating (like the escalation studies, bid result studies, the project labor agreement paper, etc.). MBTA to share copies of their analysis of projects results including bid results, engineer's estimates, project cost and schedule performance and the trending analysis currently being performed of the time and cost factors.
- Evaluating the possibility of utilizing the ABP Quarterly Report to report on overall Capital Plan.
- Evaluating the use of the already prepared MassDOT schedule training manuals to train resident engineers about the important elements of schedule controls. These manuals will be revised to accommodate MBTA specific elements.
- Including controls in the CMS system to prevent the payment of unit price and allowance items when the associated work items exceed the original unit or allowance quantity until authorization is approved by the appropriate level of management.
- Development of an integrated data base reporting system that interfaces with our current CMS system. This system will provide a consistent method for reporting the status of all projects in Design and Construction and allow posting of the current project status on the MBTA website.

MBTA DEBT PROFILE

Introduction

The MBTA's debt burden is approximately $5.5 billion in outstanding principal (a total of $8.5 billion in principal and interest), which consumes approximately 30% of its revenues annually. Outstanding principal is comprised of $1.65 billion of Prior Obligation Debt (debt inherited at the start of Forward Funding), $1.67 billion in legal transit commitments related to the Central Artery/Tunnel project and $2.18 billion in MBTA Capital Investment Program Revenue Bonds. As a result of this debt burden, and the lack of revenues available to it, the MBTA has been unable to transition to a capital investment program that relies less upon debt and more upon pay-as-you go funding.

Credit Structure

The MBTA credit structure was designed to provide access to the capital markets even under adverse conditions. Specifically, MBTA's credit structure is based upon a gross pledge of its revenues, meaning it pays debt service (or bondholders) first before any other of its costs. It issues bonds on the basis of two revenue sources; dedicated sales tax receipts and assessments collected from its member communities. Both revenue sources are established by legislation and contain provisions that guarantee a floor below which neither revenue source to the MBTA can legally fall. This structure enables the MBTA to enjoy very strong credit ratings for both of these types of credits. Strong and stable credit ratings have allowed the Authority continued and seamless access to the financial markets, even through times of severe financial distress, for example during the years following the meltdown of the financial markets after the collapse of Lehman Brothers in September 2008. In addition, strong credit ratings allow the MBTA to issue debt at very cost effective interest rates, as well as to have refinanced high interest rate debt at lower rates for interest cost savings. In fact, due to historically low interest rates over the past decade, the MBTA was able to successfully refinance much of its portfolio of high interest rate debt at lower rates, which generated significant interest cost savings for the Authority. However, although the Authority continues to monitor the marketplace, it has availed itself of most if not all of the opportunity to replace higher cost with lower cost debt. Further, while interest rates have been at historically low levels for many years, they are generally anticipated to begin to rise again in the near future.

Capital Investment Program

The MBTA faces significant capital investment costs related to maintaining its existing infrastructure and equipment. The Authority spends $470 million annually just to maintain a minimum investment in state of good repair, which does not address an existing backlog of approximately $4.5 billion of state of good repair projects. Without debt relief or a more extensive pay-as-you-go capital funding program, the Authority will not be able to afford to invest funds in many of the projects in its Capital Investment Program, including the backlog of state of good repair projects. Further, if current conditions persist, the MBTA

will continue to face further increases to its backlog of state of good repair projects, and, potentially, an unacceptable deterioration of its infrastructure.

Debt Restructuring

While the Authority has restructured some of its debt in recent years to close annual budget deficits, the size of the MBTA's budget deficits in subsequent years are projected to be increasingly significant. Therefore, in order to preserve current levels of transit services, including maintenance of equipment and infrastructure, the MBTA will have few, if any, other options than to restructure more and more of its debt to balance its budget. Restructuring debt means taking existing debt and issuing new debt that effectively serves to stretch out the maturity of the old debt, reducing annual payments in the nearer term, but clearly adding to the size of the payments necessary over the longer term to pay off the same amount of debt. This is an expensive financial option, and it also increases the Authority's overall debt burden, without contributing at all towards generating funds for additional investment in its system. Restructuring of debt is not to be confused with the refinancing of debt (mentioned above) where, as described, the Authority refunded higher cost debt with lower cost debt for annual interest rate savings, resulting in a reduction of the debt burden, and which did generate additional funds that became available for investment in the system. In the current marketplace, and given that interest rates are expected to rise, restructuring debt will add appreciably to the Authority's already overwhelming debt burden. However, absent new sources of revenue, future fare increases or significant cuts in service, the Authority may have no other choice if it is to preserve current levels of transit services and maintain a state of good repair of its infrastructure.

Future Efficiencies

In addition to the annual ongoing savings described herein, the Authority is studying or planning for future efficiencies:

Single Person Train Operation

Single person train operation on the D Line of the Green Line could yield an annual savings of **$3.2 million**.

In-house Radio Project

Taking the repair and maintenance of two-way radios in-house is expected to net **$0.6 million** annually in savings.

Paratransit Services

The Authority's paratransit service THE RIDE has increased 504% since FY 1996 or 33.6% per year. The program cost $14.8 million in FY 1996 and is $89.5 million in FY 2011. The MBTA Office of Transportation Access (OTA) is planning several cost reduction strategies of which two follow.

In-Person Assessments

The OTA is preparing to implement in-person functional assessments for ADA paratransit eligibility determination in FY 2012, which would replace the current paper application process and reduce the growth in paratransit costs. The concept is that in-person assessments dissuade ineligible applicants from beginning the interview process, and that interviews, and especially functional assessments, are more effective than paper applications in determining eligibility. Among individuals who become eligible for ADA paratransit service, the interview process is better at determining the full extent of a customer's abilities. This makes it practical to grant conditional eligibility for customers who may only need paratransit sometimes, such as summer/winter, night-time, inaccessible trips, etc. Estimates of savings range from **$0.7 to $2.9 million** annually in the first full year of implementation due to reduced service demand. Assuming a January 1, 2012 start, savings may range from **$0.35 to $1.45 million** in FY 2012.

Optimization of Run Structures

The OTA is also looking at optimization of run structures, which improves productivity and can reduce operating costs. However, the savings would accrue to the carrier, and would require a negotiated agreement for the MBTA to share in any cost saving. This has the potential to save operators between **$2.7 and $5.4 million** annually, and splitting this amount 50/50 or other appropriate split could save the MBTA a sizeable amount.

Other Paratransit Considerations for the Future

The MBTA is evaluating a number of cost reduction strategies for THE RIDE paratransit program. Potential strategies include program changes to divert customers off of high-priced paratransit trips onto lower-priced alternatives, revenue increases, and larger changes to the procurement process and to how the paratransit service is managed. Potential concepts include:

- Expansion of free fares on fixed-route services for THE RIDE customers
- Travel training
- Implementing a taxi subsidy program
- Increasing THE RIDE fares consistent with ADA paratransit limits
- Revising the procurement process
- Revising contractual provisions
- Exploring net cost reduction of a centralized call center
- Coordinating human services transportation in a way that permits Medicaid reimbursement of paratransit costs

Daily Operations Resource Management (DORM) Project

The Daily Operations Resource Management (DORM) project will modernize the way transportation district offices are operated at the MBTA, moving from manual, decentralized processes to standardized, technology-supported processes designed to improve accountability and efficiency. It is expected to save **$1.4 million** annually.

DORM will be implemented in phases. Phase 1 will automate the "daily operations" of the district offices. Today, district offices manage the workforce and the daily duties mainly on paper. Many of the tasks involve repetitiously preparing the same lists in different places for reporting. Having to manually transfer information in this fashion can lead to errors and causes transportation supervisors to spend less time managing transportation and more time dealing with paperwork. The process is complicated by the need to carefully comply with intricate work rules (contractual, safety, and operational) when assigning work to employees. The DORM system will ensure that these rules are applied consistently and that work (overtime or otherwise) is always assigned in the most cost-effective way possible.

Phase 2 will upgrade the current work selection ("pick") system. The current system is obsolete, making simple programming changes cumbersome and costly. Another benefit to updating the pick system is that it will enable the development of a fully automated, self-service pick, which is the goal of phase 3. Depending on the implementation details, operators will be able to select their work from a kiosk or from home, reducing staffing requirements associated with the pick process significantly.

DORM Anticipated Costs and Savings (in FY11 dollars)

	FY12	FY13	FY14	FY15	Annually	Through FY20
Phase 1 - Daily Operations						
Bus	$ 670,707	$ 670,707				
Subway		$ 775,707	$ 775,707			
Phase 2 - Work Selection/Bidding/Pick		$ 298,357	$ 596,713	$ 298,357		
Phase 3 - Self-Service Pick			$ 425,000	$ 1,275,000		
Total Procurement Costs	$ 670,707	$ 1,744,770	$ 1,797,420	$ 1,573,357	$ -	$ 5,786,252
Direct pick-related cost reduction through automation				$ (557,500)	$(1,115,000)	$ (6,132,500)
Potential reduction in overtime (conservative estimate based on peer agency experience)		$ (332,830)	$ (597,014)	$ (597,014)	$ (597,014)	$ (4,511,928)
Additional costs to operate and maintain centralized pick system				$ 346,450	$ 346,450	$ 2,078,700
Net (Savings)/Cost					$(1,365,564)	$ (2,779,476)

Status: A request for proposals has been developed for phases 1 and 2. A federal grant application has been submitted for the Bus Operations implementation of phase 1. If funds are secured by the end of Q3 of FY11, a contract will be awarded by Q3 of FY12.

MBTA/MassDOT Collaboration on Efficiencies

With the passage of Transportation Reform, Secretary and Chief Executive Officer Jeffrey Mullan created a Committee on Budget and Efficiencies in January 2011 to identify and realize programmatic efficiencies and cost savings wherever possible at MassDOT and the MBTA. The primary purpose of the Committee is to ensure that MassDOT and the MBTA are utilizing resources and personnel in the most productive and cost-effective manner possible.

The Secretary created number of program specific focus teams which are charged with proposing concrete recommendations. These focus teams include MBTA members in the following areas:

- IT, Telecommunications, and Radio Services and Systems
- Human Resources and Labor Relations
- Procurement
- Construction and Design
- Real Estate and Right of Way
- Environmental
- Facilities and Buildings
- MBTA, MassDOT, and RTA Operations
- Legal
- Finance
- Police

- Workforce Resizing
- Electronic Signature and Discounts
- Interoperability

The focus groups will be finalizing proposals in the 3rd and 4th quarter of FY 2011 in order to execute costs savings in FY 2012. The following contains some examples of areas explored by this Committee through one focus team:

Real Estate and Right of Way Budget and Efficiencies Group

The Real Estate and Right of Way Budget and Efficiencies Group has recommended the following areas where increased efficiencies and budget savings could be realized:

Legal Costs
The MBTA currently spends hundreds of thousands of dollars annually on outside legal counsel for representation on its complicated real estate transactions. MassDOT has adopted the former Turnpike Authority's practice of requiring the designated developer to pay for the third party costs incurred by MassDOT, though it can be argued that these costs are factored into bids and are not completely transferred to the developers. The MBTA has adopted this practice in some instances, but both MassDOT and the MBTA could realize additional savings by hiring more in-house legal counsel to handle real estate development transactions. MassDOT currently employs one full time lawyer devoted solely to this work, and has displaced significant outside legal expenses. The MBTA does not have any in-house real estate attorneys.

Consultants
MassDOT and the MBTA could benefit by using a common list of outside counsel and other consultants (appraisers, surveyors, financial, etc.) both in terms of the easier coordination between agencies that would result, and also by realizing reduced bids through the expected volume of the combined agencies' work.

Utility Rents
Both the former Turnpike Authority and the MBTA charge market rates for utility easements. The charges should be coordinated and equalized. MassDOT should charge the same rates, as this was not done in the past, and the transactions should be centrally administered. The MBTA utilizes the "Bank's Report" which has established rates for utility occupancies. This saves time and resources with not having to conduct an appraisal for each project. The MBTA can make the Report available to other MassDOT divisions.

Right of Way (ROW) Database
The MBTA has a sophisticated ROW database system. The Turnpike Authority's system is as comprehensive, if not as user-friendly. MassDOT's system is not currently as up to date as the MBTA's system. The MBTA can make available its

ROW database system "LandTracker" for use by other MassDOT divisions, enabling MassDOT to more efficiently identify assets for potential development.

As other focus groups report on activities and MassDOT develops an efficiencies inventory, all agencies in the MassDOT family should benefit from cost savings in the future.

Legislative Assistance for Tort Reform

The Authority has tried unsuccessfully over the years to obtain legislative limitations on compensatory damages awards on claims against the Authority. This situation remains the same today for all claims of "serious bodily injury" against the MBTA.

In 2009, the MBTA did receive limited relief for tort claims. In the Transportation Reform Act of 2009, the MBTA was placed within the statutory protection of Chapter 258. This offered protection for claims of a non-serious nature ($100,000 cap), the elimination of pre and post judgment interest, the elimination of punitive damages claims, and certain procedural protections. Unfortunately, the legislation did not accord full protection of Chapter 258 as received by every other governmental entity covered by the statute. Instead the legislation specifically stated that claims of "serious bodily injury" (a broadly inclusive term) are not subject to any cap on compensable damages whatsoever. The result has been that the number of multi-million dollar judgments against the MBTA has remained intact and all such future claims are possible.

Legislation treating the MBTA in the same fashion as all other Chapter 258 defendants is warranted and critical both in terms of a need for similar treatment and for budgetary planning and cost control. While the additional protections accorded to the MBTA under the new legislation offer limited protection, the loophole for "serious bodily injury" claims will continue to cause significant budgetary uncertainty in the future.

Over the 16 year period between FY 1995 and FY 2010, the Authority has spent an average of $9.0 million a year for tort claims. Because of the daunting fiscal times the Authority faces, legislative relief providing full Chapter 258 tort reform would facilitate much needed assistance to the MBTA's operating budget.

Conclusion

Notwithstanding the many achievements to control costs and the ability to implement some of the future efficiencies noted above, the Authority will not be able to balance its budget in the near future given its debt situation and pressing operating and maintenance needs. The ongoing requirement to pay for service and to fund state of good repair spending to support such service cannot be maintained solely through cost controls and additional efficiencies.

As stated in the introduction, deficits in future years are projected to grow from $192 million in FY 2013 to $344 million in FY 2016 (see Tab G—*MBTA Pro Forma FY12—FY16*). This situation was well documented in the November 1, 2009 *MBTA Review* by David D'Alessandro et al, in which he provided a "frank assessment of the MBTA's condition." He concluded that there were no quick fixes as the report excerpts from p. 31 show:

> *There is no question that the MBTA is an expensive and complex system. It requires large expenditures just to continue operating. Any thought that these problems can be addressed primarily through expense reductions is misguided.*
>
> *It makes little sense to continue expanding the system when the MBTA cannot maintain the existing one.*
>
> *If there is any chance for the MBTA to begin to close its deficit gap, there is little question that* ***secure*** *new revenue sources will have to be developed over time.*

The D'Alessandro report also concluded that the MBTA had done much to help alleviate its financial situation as the report excerpt from p. 29 shows:

> *Contrary to not trying, we found evidence that the MBTA did make some hard expense choices. Across-the-board cuts were routinely made to departmental budgets. Periodic layoffs and hiring freezes restrained headcount. Individual managers took pride in eliminating inefficiencies and redundancies, while embracing a new organizational ethic of customer service. Yet in the end, they could not pare staff below the number needed to move hundreds or thousands of riders across hundreds of routes each workday. Add the complexity and cost of sustaining the system's aging infrastructure, and it became evident that the cost inflation and savings assumptions in the Finance Plan were never tested against the daily grind.*

Without new revenue sources or significant debt relief, the future is uncertain for public transportation in Massachusetts. The MBTA is too valuable an economic asset to permit any further deterioration of its quality or condition.

Common\Efficiencies Report June 2011\MBTA Efficiencies and Cost Savings June 2011 Final
June 13, 2011

TAB J

MBTA Menu of Service Reductions - By Total Riders Impacted, Largest to Smallest

DRAFT

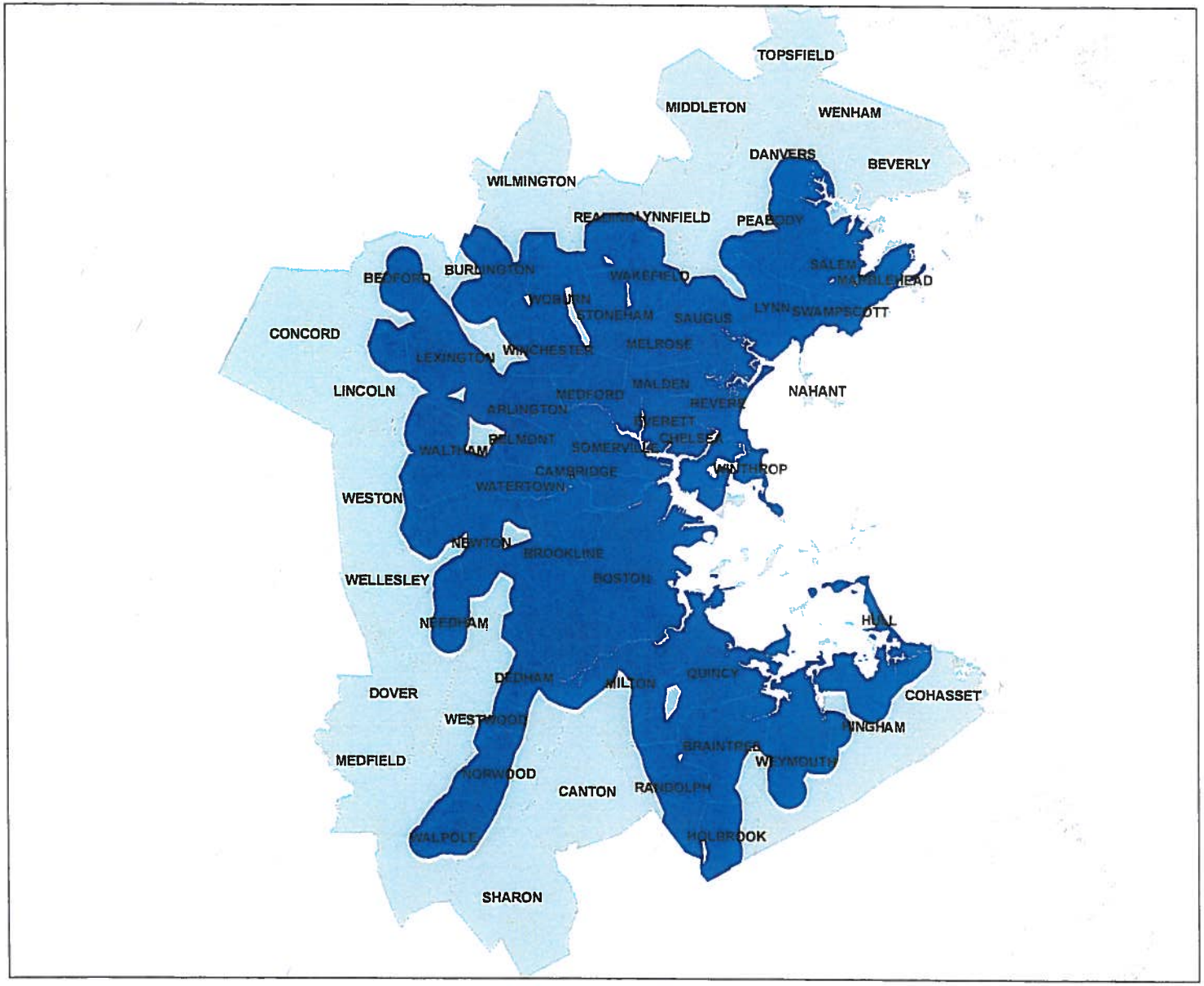
Potential Service Reductions - Each item on this sheet is independent of others; however, the separate fare increase and RIDE operational savings projections would need to be recalculated if all of the service reductions are not implemented.	Mode	Projected Annual Riders Impacted	Cumulative Riders Not Impacted if these Service Reductions are not Implemented	Projected Annual Gross Operating Savings to MBTA	Cumulative Gross Operating Savings Not Achieved if these Service Reductions are not implemented	Projected Annual Lost Fare Revenue (Incl. in Fare Increase projections)	Projected Annual Net Savings to MBTA	Projected MBTA Jobs Lost	Projected Net Savings per Rider Impacted
Eliminate all Saturday service.	Commuter Rail	1,654,077	1,654,077	$ 6,411,593	$ 6,411,593	$ 5,028,394	$ 1,383,199	0	$ 0.84
Eliminate all Sunday service.	Commuter Rail	1,297,662	2,951,739	$ 6,273,058	$ 12,684,651	$ 3,944,892	$ 2,328,166	0	$ 1.79
Eliminate weekday subsidy to all routes F1, F2, F2H, and F4. (Fare revenue is kept by ferry service providers).	Ferry	1,140,035	4,091,774	$ 3,413,269	$ 16,097,920	$ -	$ 3,413,269	0	$ 2.99
Eliminate routes which are between 3.0-3.5X system-average subsidy per pax • Weekday Routes 4, 436, 448, 449, 465, 554 • Saturday Routes 33, 72, 78, 136, 171, 211, 230, 436, 465, 504, 553 • Sunday Routes 43, 78, 136, 137, 201, 202, 211, 230, 431	Bus	996,770	5,088,544	$ 5,798,231	$ 21,896,151	$ 1,177,141	$ 4,621,090	38	$ 4.64
Eliminate all weekday service after 10 PM.	Commuter Rail	710,430	5,798,974	$ 5,489,281	$ 27,385,432	$ 2,159,707	$ 3,329,574	0	$ 4.69
Eliminate routes which are between 3.5-4X system-average subsidy per pax • Weekday Routes 52, 170, 354, 555, CT3 • No Saturday Routes	Bus	618,352	6,417,326	$ 4,190,432	$ 31,575,864	$ 1,032,963	$ 3,157,469	27	$ 5.11
Eliminate routes with >4X system-average subsidy per pax • Weekday Routes 48, 217, 325, 351, 355, 439, 451, 468, 500 • Saturday Routes 48, 52, 245, 451, 554 • Sunday Routes 18, 37/38, 245, 436	Bus	523,604	6,940,930	$ 3,511,786	$ 35,087,650	$ 690,433	$ 2,821,353	22	$ 5.39
Eliminate Saturday E Branch (Assumes that all E branch riders will divert to Route 39 bus with lower fare, and that another branch will serve N Station - Lechmere)	Subway / Light Rail	376,208	7,317,138	$ 800,577	$ 35,888,227	$ 127,911	$ 672,666	6	$ 1.79
Eliminate Sunday E Branch (Assumes that all E branch riders will divert to Route 39 bus with lower fare, and that another branch will serve N Station - Lechmere)	Subway / Light Rail	230,956	7,548,094	$ 717,670	$ 36,605,897	$ 76,793	$ 640,877	6	$ 2.77
Eliminate Suburban Bus Program subsidies to Bedford, Boston (Mission Hill), Beverly, Burlington, Dedham, and Lexington. (Only MBTA costs are shown).	Bus	156,229	7,704,323	$ 371,000	$ 36,976,897	$ -	$ 371,000	0	$ 2.37
Eliminate Saturday Mattapan High-Speed Line service.	Subway / Light Rail	153,045	7,857,368	$ 215,203	$ 37,192,100	$ 110,192	$ 105,011	2	$ 0.69
Eliminate Sunday Mattapan High-Speed Line service.	Subway / Light Rail	82,766	7,940,134	$ 207,277	$ 37,399,377	$ 59,592	$ 147,685	2	$ 1.78
Eliminate subsidy to F4 Charlestown route on Saturdays. (Fare revenue is kept by ferry service providers).	Ferry	52,150	7,992,284	$ 42,500	$ 37,441,877	$ -	$ 42,500	0	$ 0.81
Eliminate subsidy to F4 Charlestown route on Sundays. (Fare revenue is kept by ferry service providers).	Ferry	46,386	8,038,670	$ 45,900	$ 37,487,777	$ -	$ 45,900	0	$ 0.99
Eliminate Private Carrier Bus Program in Canton and Medford (Fare revenue is kept by bus service providers).	Bus	45,183	8,083,853	$ 267,345	$ 37,755,122	$ -	$ 267,345	0	$ 5.92
Eliminate subsidy to F2 Quincy route on Saturdays. (Fare revenue is kept by ferry service providers).	Ferry	42,029	8,125,882	$ 95,400	$ 37,850,522	$ -	$ 95,400	0	$ 2.27
Eliminate subsidy to F2 Quincy route on Sundays. (Fare revenue is kept by ferry service providers).	Ferry	28,567	8,154,449	$ 79,500	$ 37,930,022	$ -	$ 79,500	0	$ 2.78

MBTA Menu of Service Reductions - By Total Riders Impacted, Largest to Smallest

DRAFT

Potential Service Reductions - Each item on this sheet is independent of others; however, the separate fare increase and RIDE operational savings projections would need to be recalculated if all of the service reductions are not implemented.	Mode	Projected Annual Riders Impacted	Cumulative Riders Not Impacted if these Service Reductions are not Implemented	Projected Annual Gross Operating Savings to MBTA	Cumulative Gross Operating Savings Not Achieved if these Service Reductions are not Implemented	Projected Annual Lost Fare Revenue (incl. in Fare increase projections)	Projected Annual Net Savings to MBTA	Projected MBTA Jobs Lost	Projected Net Savings per Rider Impacted
Eliminate routes which serve Long Island Health Campus and Shattuck Hospital (Routes 275/276/277) - no ridership counts have been conducted	Bus		8,154,449	$ 1,049,296	$ 38,979,318	$ -	$ 1,049,296	6	
TOTALS:		8,154,449		$ 38,979,318		$ 14,408,018	$ 24,571,300	109	$ 3.01

TAB K



DRAFT: 1/13/2012

Scenario 1, Part B: RIDE Service Area: $14.9-Million Savings in Operating Costs, 0.3-Million Annual Trips Affected

Increase RIDE base fares to 2x CharlieTicket fixed-route base price, and institute $12 premium fares for non-ADA (outside of fixed-route service area, before/after hours, or same day) trips ($14.9m, 0.3m trips)

Service Area:
Existing: 706 sq. mi.
Proposed:
ADA area: 359 sq. mi. (51%)
Premium area: 347 sq. mi. (49%)

2011 Actual Pick-Up and Drop-Off Locations:
Existing: 5,663,810
Proposed:
ADA area: 5,201,622 (92%)
Premium area: 462,188 (8%)

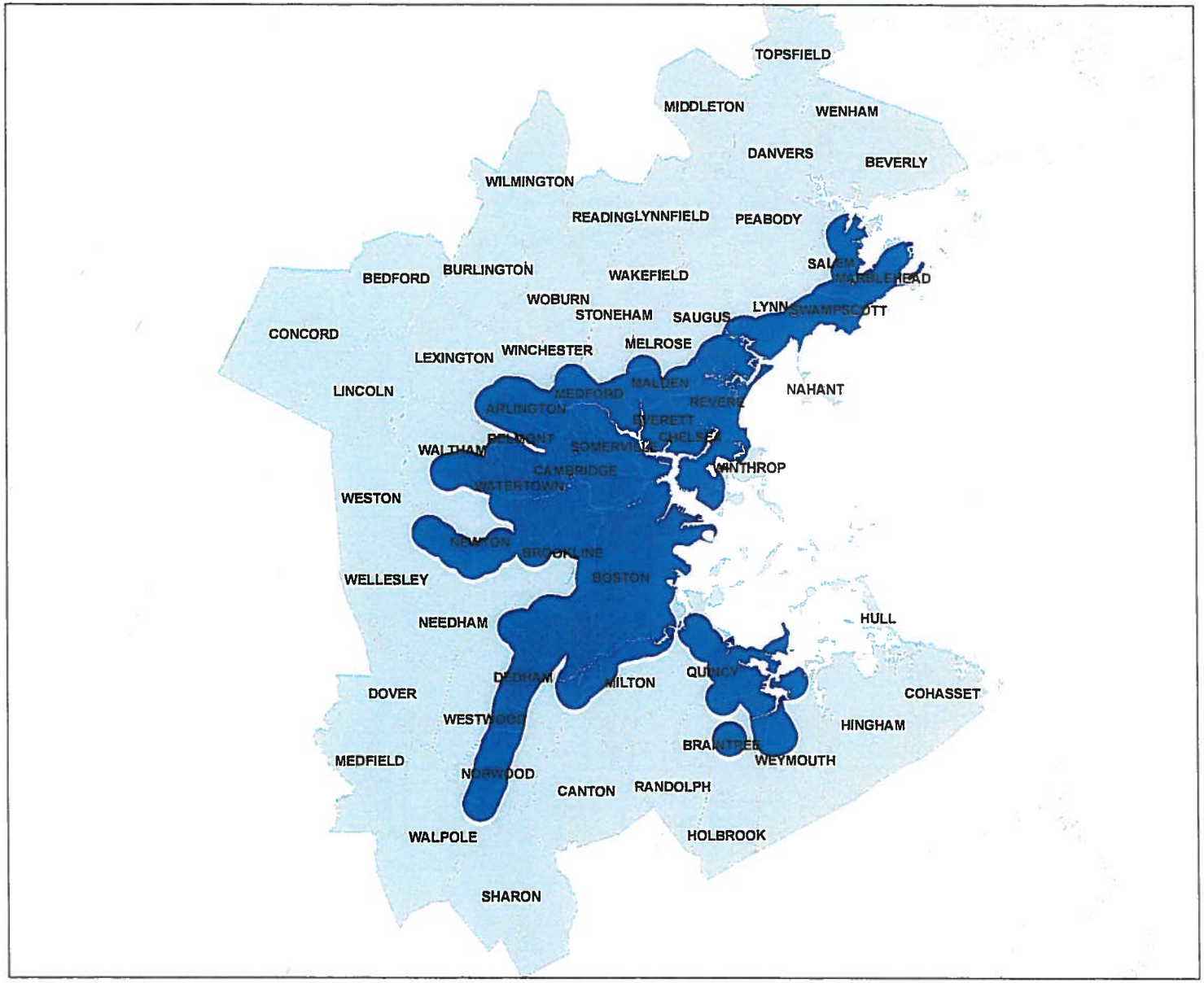
Legend

Town boundary
ADA Service Area
Premium Service Area

N

0 3 6 12 Miles

BOSTON REGION MPO



DRAFT: 1/13/2012

Scenario 2, Part B: RIDE Service Area: $7.1-Million Savings in Operating Costs, 0.7-Million Annual Trips Affected

Increase RIDE base fares to 2x CharlieTicket fixed-route base price, and institute $5 premium fares for non-ADA (outside of fixed-route service area, before/after hours, or same day) trips ($7.1m, 0.7m trips)

Service Area:
Existing: 706 sq. mi.
Proposed:
ADA area: 212 sq. mi. (30%)
Premium area: 494 sq. mi. (70%)

2011 Actual Pick-Up and Drop-Off Locations:
Existing: 5,663,810
Proposed:
ADA area: 4,096,513 (72%)
Premium area: 1,567,297 (28%)

Legend

Town boundary
ADA Service Area
Premium Service Area

N

0 3 6 12 Miles

BOSTON REGION MPO

TAB L

Transportation Finance Commission Scorecard

In 2007, the Transportation Finance Commission (TFC) recommended a series of twenty-two reforms in the delivery of transportation services. The following scorecard provides information on the status of each reform recommendation and the steps MassDOT has either completed or is in the process of completing to make this reform a reality. Where appropriate, it is also noted which reforms have not been implemented and why. MassDOT has completed or is in the process of completing 90 percent of TFC's recommendations.

Legend:

 Reform completed

 Reform in progress

 Reform not authorized or started

Principle	TFC Reform Recommendation	Status	MassDOT Comments
1	Road and bridge investment should be selected and advanced based on rational criteria		In fiscal year 2010, both MassDOT and MBTA published Capital Investment Plans (CIP) as well as federally mandated State Transportation Investment Plans (STIP), which are approved through the Metropolitan Planning Organization (MPO) process. These documents reflect the work of hundreds of professionals that evaluate state, regional and local transportation priorities within a criteria based selection process that is fiscally constrained. In addition, MassDOT has launched the second phase of the "We Move Massachusetts" planning study that will develop a new framework for the evaluation and selection of transportation projects based on a common set of criteria.
2	The Executive Office of Transportation and Public Works (EOTPW) should utilize alternative procurement methods and Public-Private Partnerships (P3s).		Both the Act and the Accelerated Bridge Program allow MassDOT to use alternative procurements such as design / build or private-public partnerships (PPP) to deliver projects on time and under budget. The Act also provides autonomy from state procurement rules to save money in procurement while upholding the strictest ethical and legal standards. A recent procurement for road salt with the Commonwealth's Operational Services Division using new, innovative processes saved MassDOT nearly $9 million. MassDOT continues to look for promising PPP opportunities.
3	The use of private flagmen should be allowed on road and bridge projects.		Since 2008, MassDOT has used flagmen on hundreds of projects located across the Commonwealth. To date this program has saved $15.5 million dollars; savings that are reinvested into additional construction and maintenance projects.

Principle	TFC Reform Recommendation	Status	MassDOT Comments
4	Responsibility for the Department of Conservation and Recreation's parkways and bridges should be transferred to MassHighway.		The Act transferred 8 parkways (McGrath and O'Brien Highways in the cities of Cambridge and Somerville, the Carrol Parkway, Middlesex Avenue in the city of Medford, William Casey highway overpass in the Jamaica Plain section of the city of Boston, Columbia Road in the South Boston section of the city of Boston, Morton Street in Boston and Gallivan Boulevard in the Dorchester section of the city of Boston) and all vehicular bridges from DCR to MassDOT. A study is underway, as required by the Act, to determine the benefits and barriers of transferring the remaining parkways from DCR to MassDOT.
5	Maintenance responsibilities of I-395, I-84, and I-291 should be transferred to the Massachusetts Turnpike Authority.		MassDOT's Highway Division is now responsible for the management and maintenance of all state highways, including the Turnpike and feeder roads such as I-291. This was a core tenet of the Act.
6	EOTPW should establish the position of Private Project Ombudsman.		MassDOT has assigned a staff member the role of managing a Public Private Development Unit and has assigned senior members of the department to coordinate economic development initiatives with the Executive Office of Housing and Economic Development.
7	The Commonwealth should end the practice of using bonded funds for operating personnel and expenses.		The Act requires MassDOT to develop a plan to convert salaries and benefits of all bond employees by July 1, 2012. Since 2007, MassDOT has worked with the Legislature and others, including the TFC, to identify options to remove employees and other operating expenses from the bond. $2 million in the fiscal year 2009 budget was provided to transfer an estimated 50 FTEs from bond to operating. MassDOT is committed to looking for ways to reduce our reliance on the capital budget for operating expenses and awaits the opportunity to work with the Legislative Special Commission established on this issue. .
8	The Commonwealth should improve the predictability of highway funding and coordination of projects funded by multiple entities.		With the establishment of the Commonwealth Transportation Fund (CTF) and the Massachusetts Transportation Trust Fund (MTTF) in the Act and the development of the first-ever highway Capital Investment Plan (CIP), the reliability of ensuring that transportation revenues are available for transportation expenses has become reality. However, the state budget crisis as well as uncertainty at the federal level on how to address shortfalls in the Highway Trust Fund continues to threaten the predictability of

Principle	TFC Reform Recommendation	Status	MassDOT Comments
			highway and transit funding. MassDOT is working with the Executive Office of Administration and Finance, the United States Department of Transportation and others (e.g. AASHTO) on this issue. MassDOT's Chief Executive Officer and centralized planning office has ensured the highest level of project coordination is occurring between all modes, including the MBTA and MassDOT.
9	The rate of growth of MBTA fringe benefits costs should be reduced.		TFC recommended a number of options to reduce the cost of health insurance benefits at the MBTA. The recommendations of the TFC and the initiatives of the Act are very different. A requirement of the Act is that upon the expiration of collective bargaining agreements, employees at the MBTA will be transferred to the Commonwealth's Group Insurance Commission (GIC). Employees at the former Turnpike Authority have been transferred to GIC. The Act also fundamentally changed the MBTA's pension system for new employees by eliminating the 23-year and out provision prospectively. Despite its differences in recommendations, the Act meets the spirit of TFC's recommendation by leading to significant savings while providing employees with high-quality, affordable health care.
10	The unnecessary constraints on MBTA management should be removed.		This principle was not addressed in the Act and the issue may be addressed through collective bargaining.
11	The MBTA needs to fully fund its state of good repair program. This goal can and should be achieved by the Commonwealth assuming the debt from Central Artery/Tunnel transit commitments.		The current MBTA CIP allocates 95 percent of available funding to the state of good repair. Further, the MBTA secured $439 million in federal ARRA and TIGER funds, much of which has been directed towards state of good repair projects. This translates into more maintenance and construction projects, improving on time service reliability, customer safety and comfort. The assumption by the Commonwealth of Central Artery / Tunnel transit debt was not addressed in the Act, but remains under consideration by

Principle	TFC Reform Recommendation	Status	MassDOT Comments
			MassDOT. MassDOT anticipates having discussions with both ANF and the Legislature on options to use available revenues to fund debt associated with the Central Artery / Tunnel transit commitments.
12	The Commonwealth should pay for all MBTA capital expansions and before committing to a project, the MBTA should demonstrate that adequate revenues are in place to operate and maintain the expansions.		The Commonwealth is providing funding for all planned MBTA expansion projects, including the Green Line extension and South Coast Rail. Assumption of all capital expenses would require legislation to change how both the MBTA and Commonwealth's transportation capital projects are financed. Since the passage of the Act, the MBTA Board, MassDOT CEO and MBTA General Manager have worked to ensure that the MBTA CIP is fiscally-constrained in order to ensure that adequate resources are available to meet projected capital and operating expenses.
13	Regional Transit Authorities should be forward-funded.		The Act requires forward funding of the Regional Transit Authorities by July 1, 2011. This issue is currently under review and is a priority of MassDOT should revenues become available for this estimated $65 million commitment. In the interim, MassDOT has worked with the RTAs to ensure that federal toll credit funds are available for local transit projects.
14	The RTAs' 2.5 percent per year cap on operating cost growth should be eliminated.		RTAs are now funded from the MassDOT operating budget, which has no statutory requirement to cap expenses. MassDOT's goal of using performance based metrics tied to budgets will ensure that operating costs are managed effectively.
15	RTAs should be allowed to borrow with the full faith and credit of the Commonwealth.		The RTAs were provided the opportunity to borrow with the full faith and credit of the Commonwealth as part of the fiscal year 2009, Section 65 of Ch. 182 of the Acts of 2008.
16	Secretary of Transportation should exercise a stronger coordinating role with respect to RTAs.		This is a core tenet of the Act. The Secretary of Transportation, in cooperation with the Rail & Transit Administrator, has taken a greater role in working with Regional Transit Authorities, including prioritizing the needs of these partners in the CIP, STIP and statewide Rail and Transit Plan.

Principle	TFC Reform Recommendation	Status	MassDOT Comments
17	The Secretary of Transportation should have the authority to coordinate all aspects of Commonwealth transportation.		The enactment of the 2009 Act vested the Secretary of Transportation with new powers and an expanded role as Chief Executive Officer of MassDOT in addition to continuing as a member of the Massport Board. The Secretary of Transportation is the elected Chair of the Massport Board. The Secretary also oversees the MBTA through the MassDOT Rail and Transit Administrator and the joint boards of the MBTA and MassDOT. As CEO, the Secretary is able to set a coordinated transportation agenda and ensure budgets, plans and operational policies align. The Secretary is positioned to implement a cohesive transportation system for the Commonwealth, including comprehensive financial plans.
18	The CEO of each Massachusetts transportation agency should institute a rigorous performance evaluation process.		MassDOT has created an Office of Performance Management to provide reports on the effectiveness of all programs. MassDOT has adopted the first ever strategic plan for Massachusetts, which includes specific goals for the organization. MassDOT also participates in the Commonwealth's Performance, Accountability and Transparency Program. MBTA is using its T-Stats and T-Map initiatives for both program and employee performance evaluations. TFC also recommended a 1%, or 100 person, reduction of the transportation agencies workforce. Since the passage of the Act, MBTA and MassDOT have reduced headcount by over 100 persons.
19	All Massachusetts transportation agencies should have the same $100,000 tort liability limit as municipalities.		The Act provided that all MassDOT divisions would be under the Massachusetts Tort Claims Act (Chapter 258). However, the MBTA was excluded from the $100,000 cap for all serious bodily injuries. In order to provide the same level of tort liability as municipalities, further legislative action is required. MassDOT is proposing amendments to allow for this same level of liability in an upcoming mini-reform legislative package.
20	The vast majority of our funds for the foreseeable future should be devoted to maintenance and rehabilitation.		The MBTA, MassDOT and Commonwealth CIPs and STIP have increased funding for maintenance and rehabilitation of transportation assets. The Patrick Administration's Accelerated Bridge Program will contribute $3 billion dollars towards rehabilitating structurally deficient bridges. As previously discussed, the current MBTA CIP (FY12 – 16) allocates 95 percent of available funding to the state of good repair.

Principle	TFC Reform Recommendation	Status	MassDOT Comments
21	Transfer the Tobin Bridge from Massport to the Metropolitan Highway System (MHS).		On January 1, 2010 the Tobin Memorial Bridge was transferred from Massport to MassDOT. The bridge is now part of the Metropolitan Highway System.
22	Transportation user fees must be dedicated to transportation.		The passage of the Act implemented this reform recommendation. The Commonwealth Transportation Fund (CTF) collects gas tax, registry fees and sales tax to fund debt service associated with MassDOT's capital program for bridges, roads, airports and rails systems as well as costs related to the operation of the MBTA, RTAs and MassDOT. MassDOT collects tolls, rents and other revenues for use on the debt service of the former Turnpike, operations of MassDOT's divisions and programs and pay go capital. MBTA and RTA fares, assessments and other revenues remain with those authorities.