

Public Policy Considerations in Financing the MBTA

Presentation to the
Regional Transportation Advisory Council

December 14, 2011

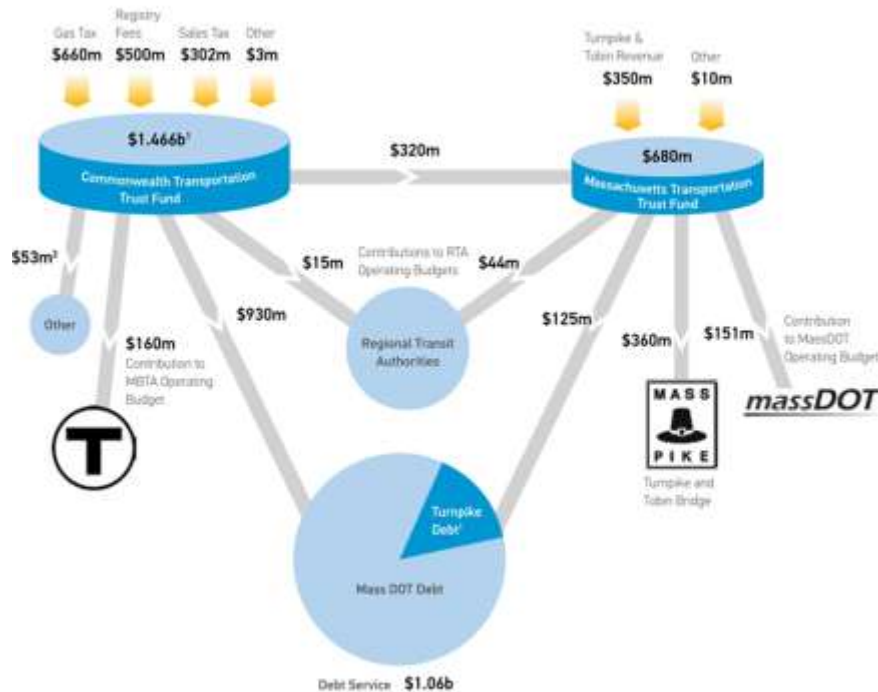
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Associate Director
Dukakis Center for Urban and Regional Policy



Transportation finance is complicated

FIGURE 3
State Funding for Transportation Operations

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



SOURCE: FF 2012 MassDOT Budget Hearing, January 3, 2011
 1. CTF total includes excise tax factor (FF 2012 MassDOT Budget Hearing, January 3, 2011).
 2. Revenue for snow and ice removal.
 3. This debt refers to the Turnpike Highway System portion of the Turnpike.

MAXED OUT

MASSACHUSETTS TRANSPORTATION AT A FINANCING CROSSROAD
 A Primer from Transportation for Massachusetts (T4MA)

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

OCTOBER 2011

Available on the website of
 Transportation for Massachusetts
www.t4ma.org

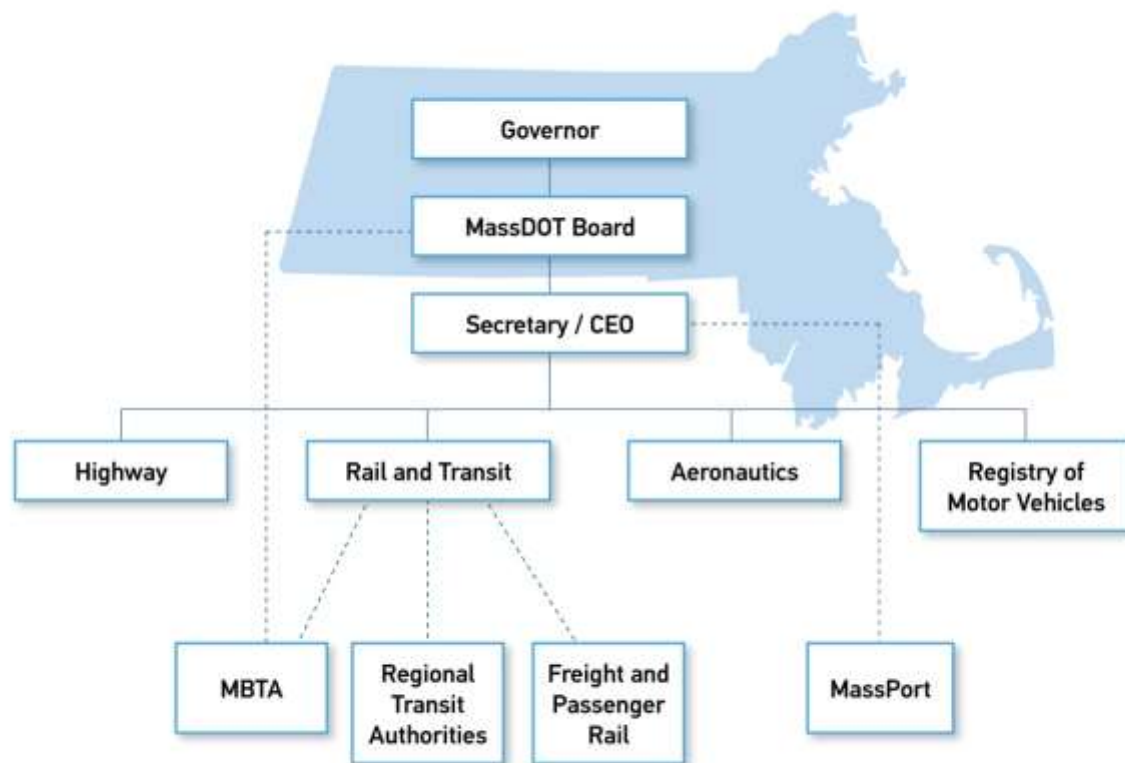


The MBTA is an independent authority . . .

- Since “Forward Funding” legislation was enacted in 2000, the MBTA
 - Receives dedicated funding (from 1 cent of the sales tax)
 - Must balance its budget every year with available revenues
- The MBTA has two budgets
 - Operating budget, which must pay for both
 - Operating Costs
 - Debt Service
 - Capital budget, which must pay for both
 - Maintenance and “State of Good Repair”
 - Enhancements and expansions

... But is also part of MassDOT

FIGURE 2



SOURCE: MassDOT Fiscal Year 2011 Transportation Budget in Plain English

Source: *Maxed Out*

The MBTA faces multiple financial challenges

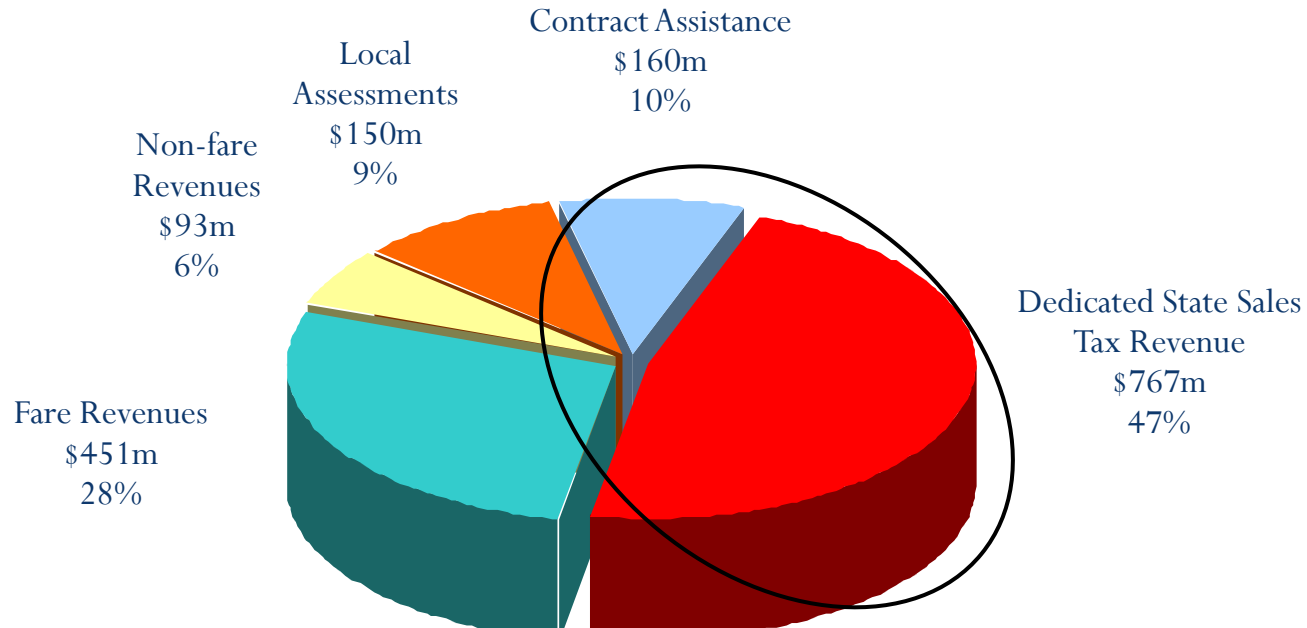
- The MBTA needs to simultaneously
 - Operate its system
 - Pay debt service
 - Maintain the system in a “State of Good Repair”
 - Invest strategically in enhancing and expanding the current system
- The MBTA is facing challenges in each of these four areas

“FY12 marks another year of major structural and cyclical deficits at the MBTA. The causes of this deficit are multiple, and the fault rests not with management, structure, or a lack of innovation. The fault of the MBTA’s operating deficit clearly lies with past failures of public policy, and present failures to address these issues. Debt, increased costs to operate ancient equipment, overly generous compensation for some employees, expansion, and service levels out of sync with current land use and demographic patterns lie at the heart of the MBTA’s multi-billion dollar, multi-year structural and cyclical operating and capital deficits.”

MBTA Advisory Board

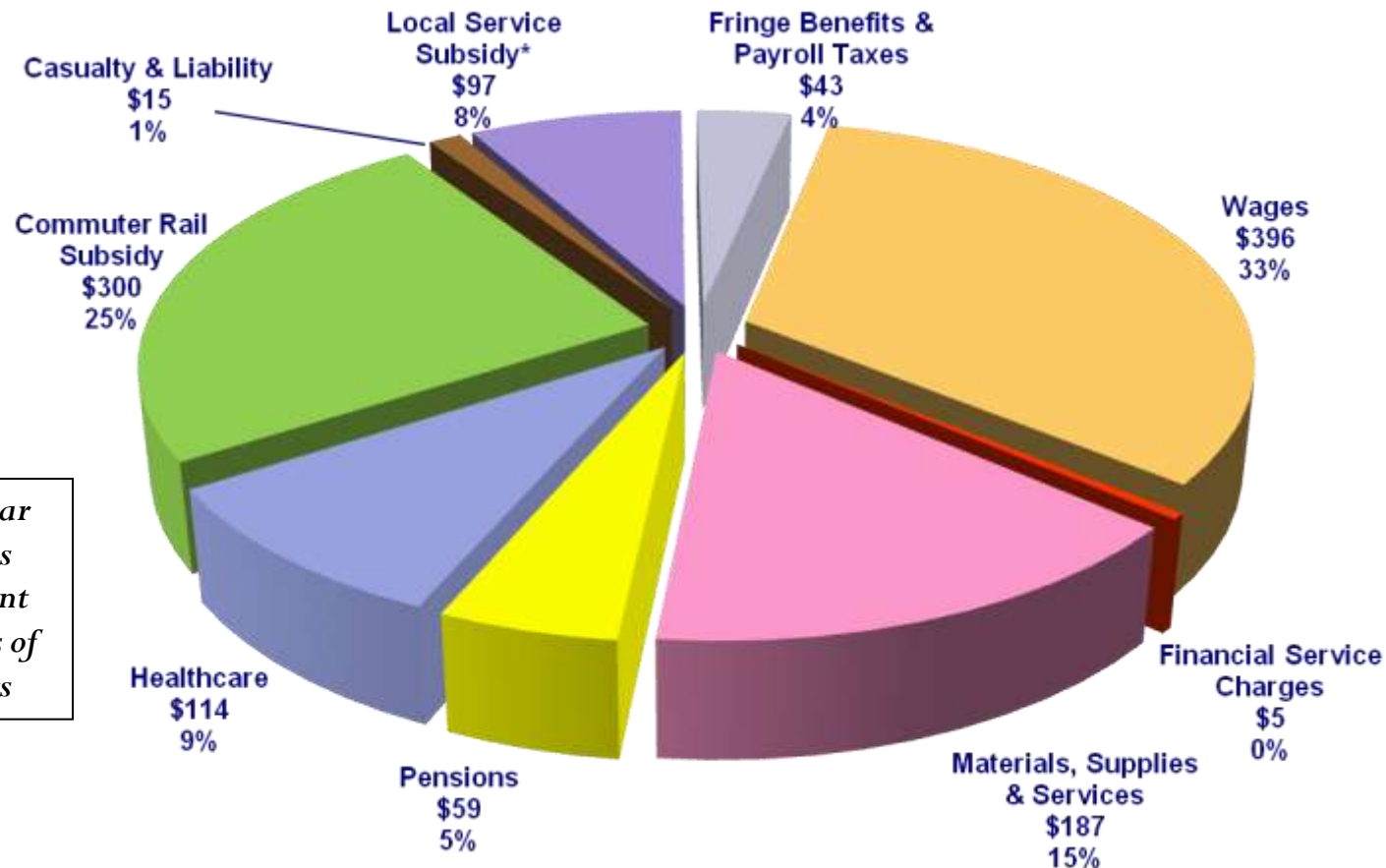
THE OPERATING BUDGET

The MBTA's FY2011 operating budget of \$1.62 billion: Sources



Revenue Recovery
Ratio = 45%

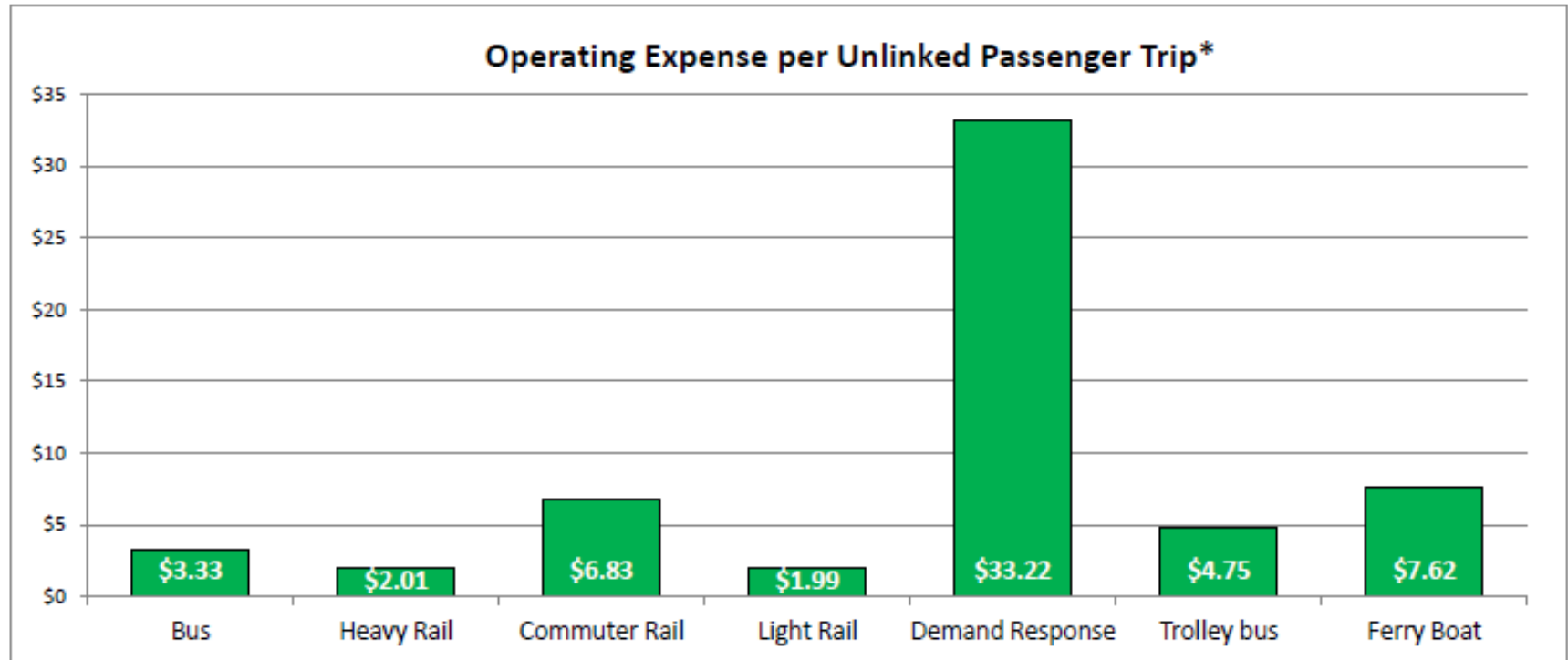
The MBTA's FY2011 operating budget of \$1.62 billion: Uses



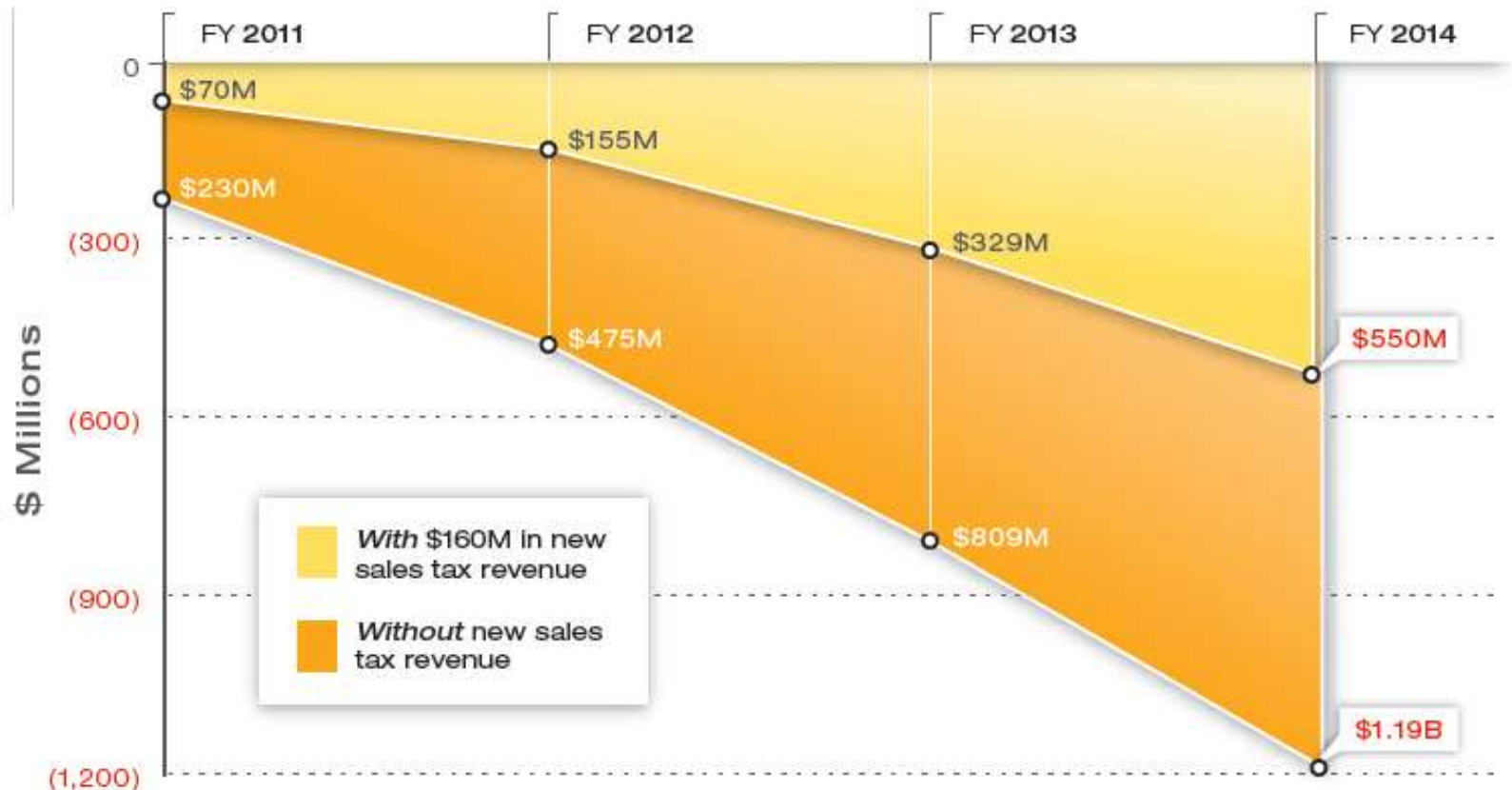
All dollar figures represent millions of dollars

* includes THE RIDE, Suburban Bus, Commuter Boat, Private Carrier Bus

All transit is subsidized . . . but not equally



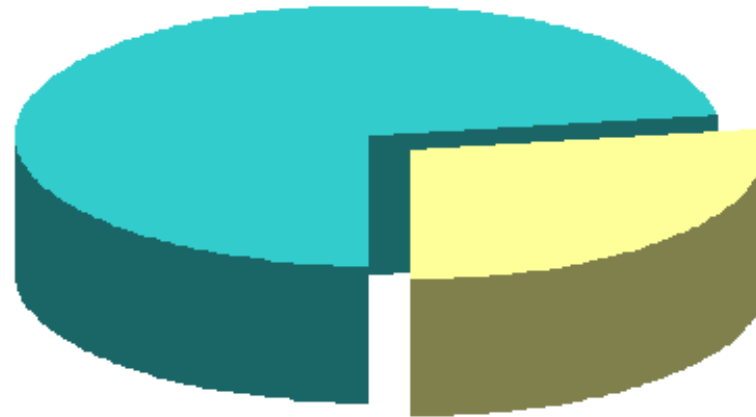
Projected cumulative operating deficits



Source: D'Alessandro report

The link between the operating and capital budgets: Debt service

Operating
Expenses
\$1.21 billion
75%



Debt Service
\$ 405 million
25%

DEBT SERVICE

The MBTA relies heavily on borrowing

- Most capital spending comes from issuing bonds = borrowing
 - “Pay as you go” has not panned out
- The MBTA issues its own highly-rated bonds
 - And is responsible for paying the principle and interest on those bonds
 - And relies on the same revenue sources to pay those bonds as it does for all other operating, maintenance and capital needs

*“[The dedicated penny of the sales tax] has allowed the MBTA to continually borrow at exceptionally low rates. Robin Prouty, an analyst for Standard & Poor’s, acknowledged that **it wouldn’t even matter if the T shut down tomorrow and never ran another train.** So long as Massachusetts has a sales tax, investors who buy the T’s bonds will be repaid. And that’s how the MBTA maintains its sterling credit ratings.”*

“T is for Trouble”

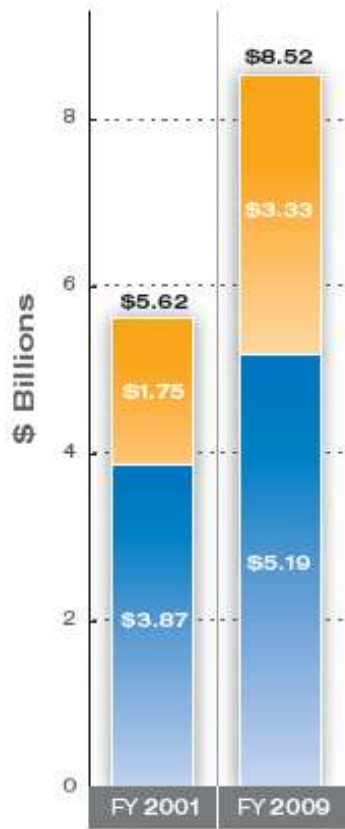
Boston Magazine

February 2011

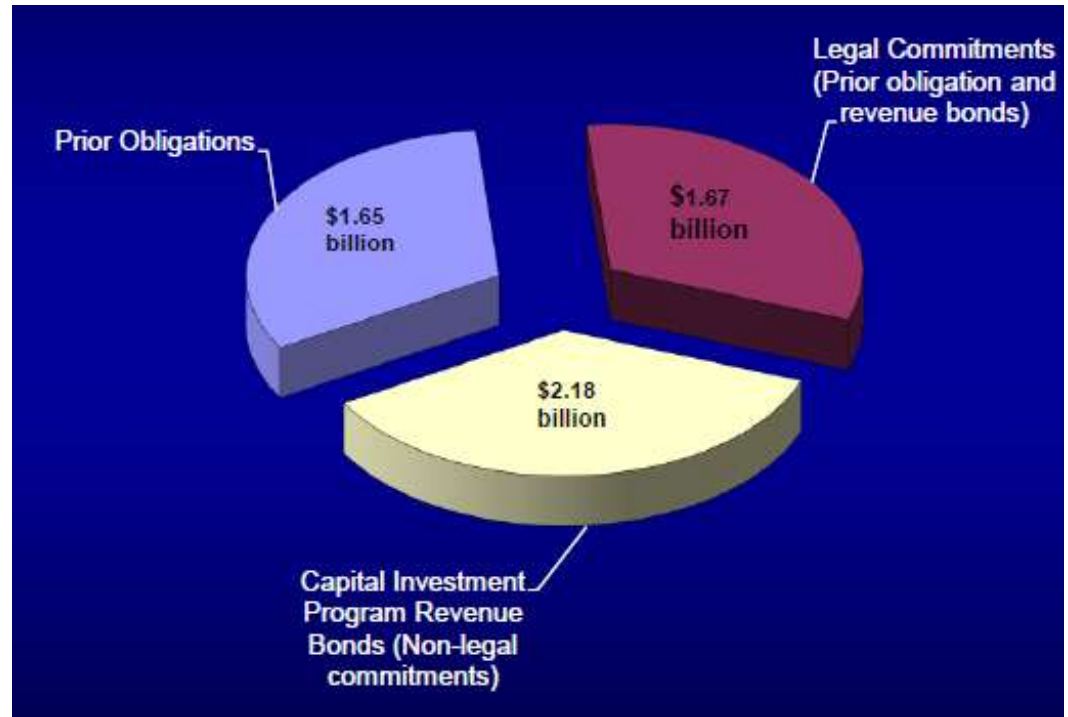
The most debt-ridden transit agency in the United States

Total Outstanding Debt

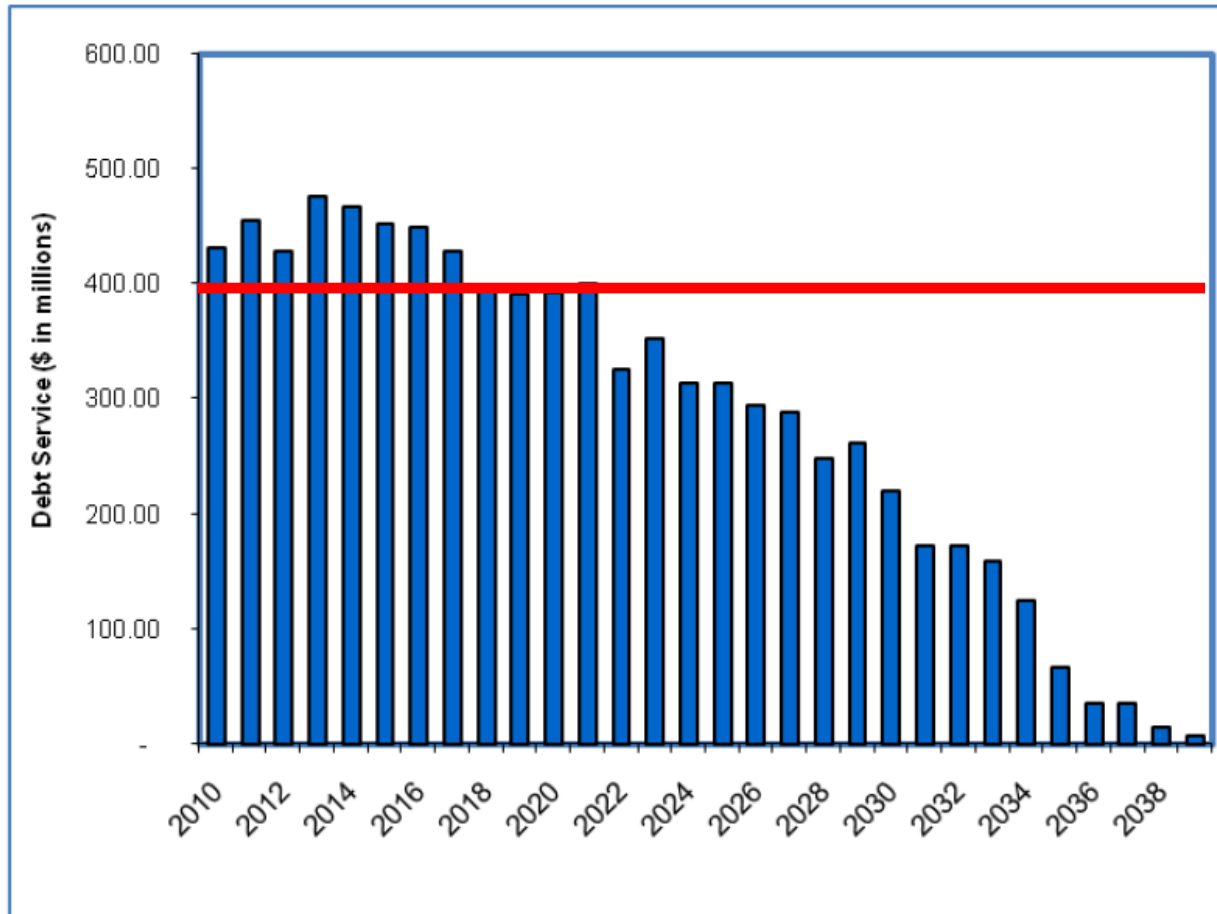
FY01 & FY09



Interest
Principal

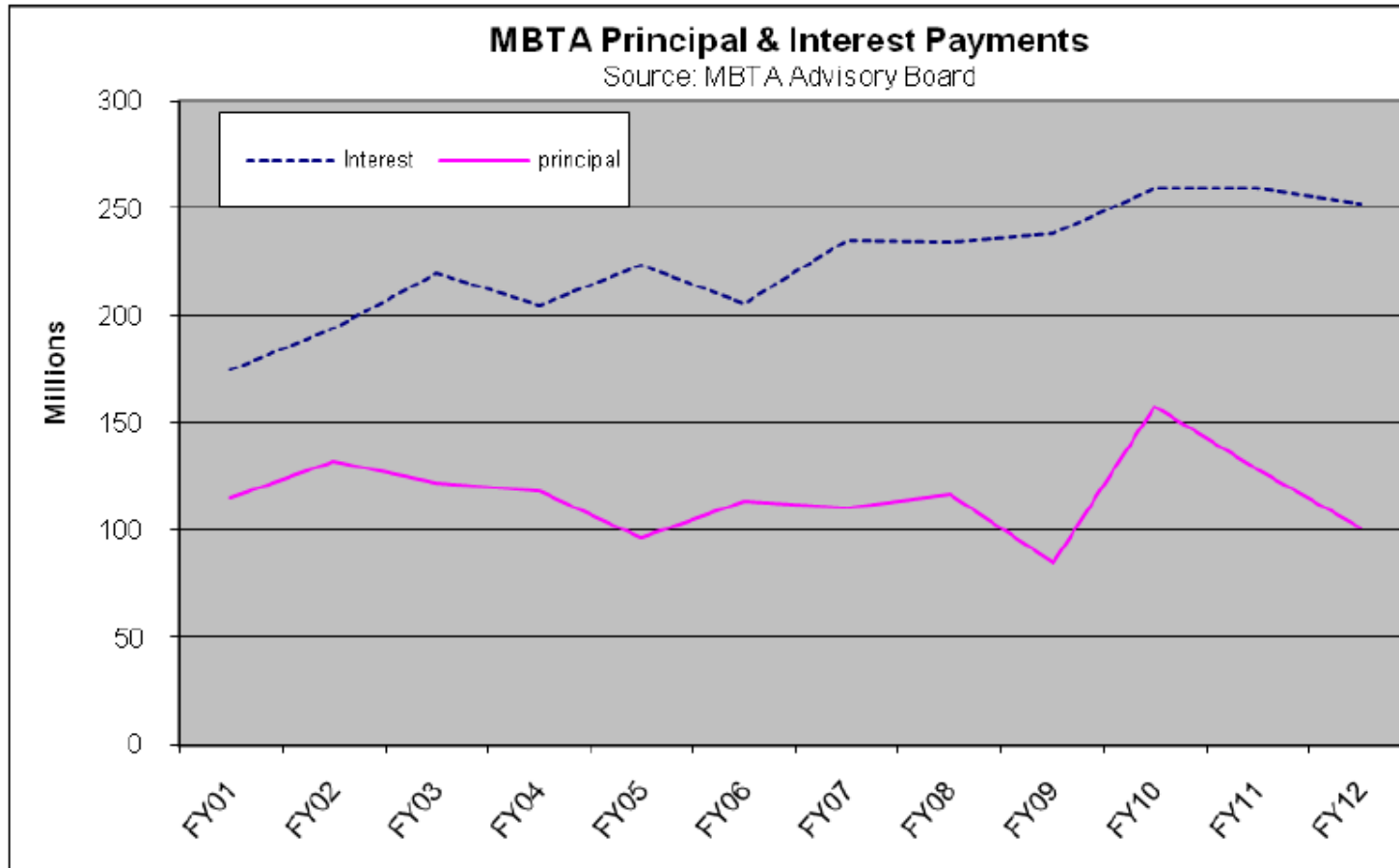


Projected MBTA debt service



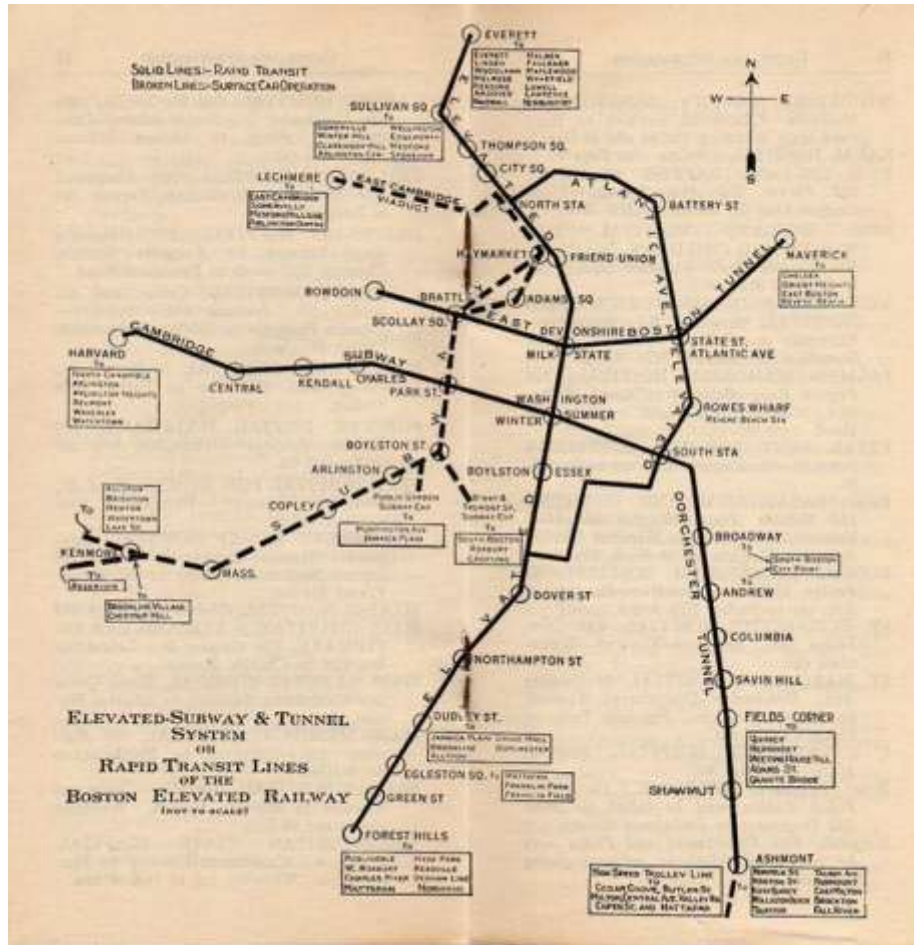
The draft MBTA Capital Investment Program for FY 2013-2017 relies on the issuance of an additional \$700,000 in MBTA revenue bonds

The effects of refinancing



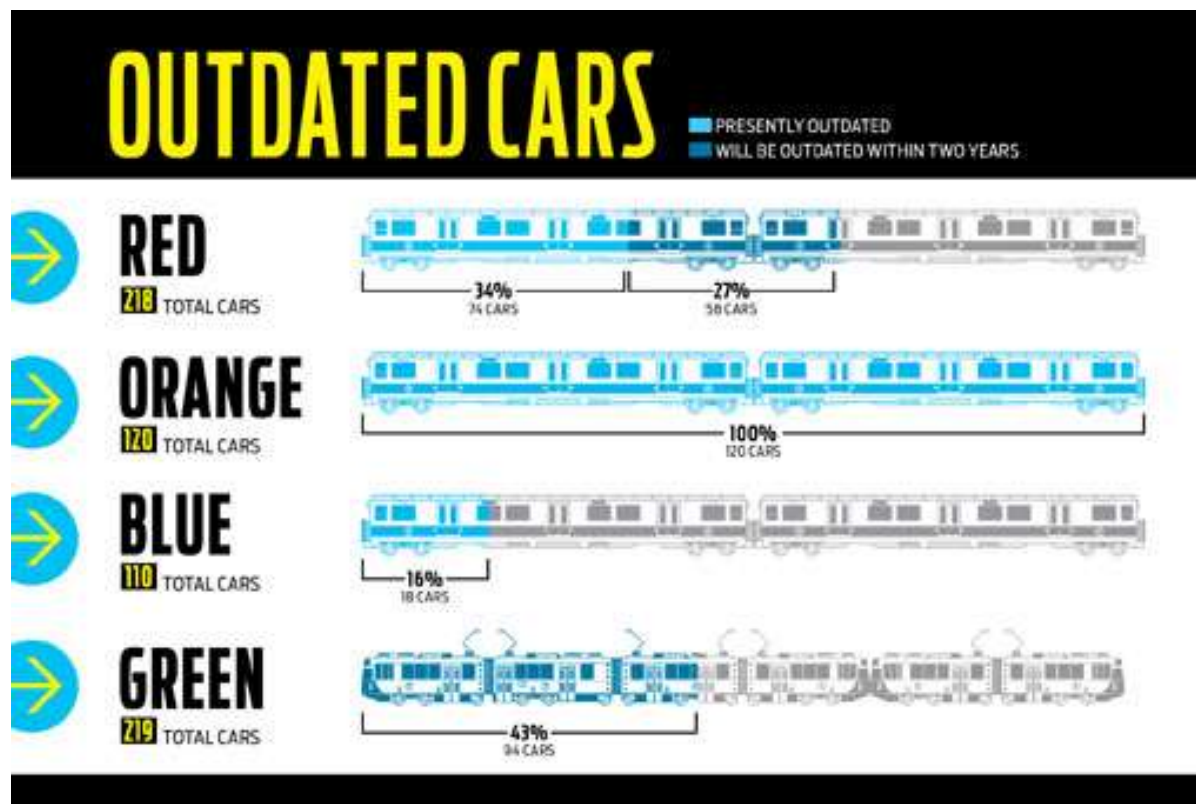
ACHIEVING A STATE OF GOOD REPAIR

The MBTA is old . . .



1934 Boston Elevated Railway System

... Including its rolling stock



Source: "T is for Trouble" Boston Magazine February 2011.

How big is the “State of Good Repair” backlog?

“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.”

*MBTA Review
(D’Alessandro Report)
November 2009*

“The MBTA currently projects that it would need to spend \$750 million per year to address its State-of-Good-Repair (SGR) needs. This fact is detailed in the MBTA’s pro forma documents and is also signaled in recent versions of the Capital Investment Program (CIP).”

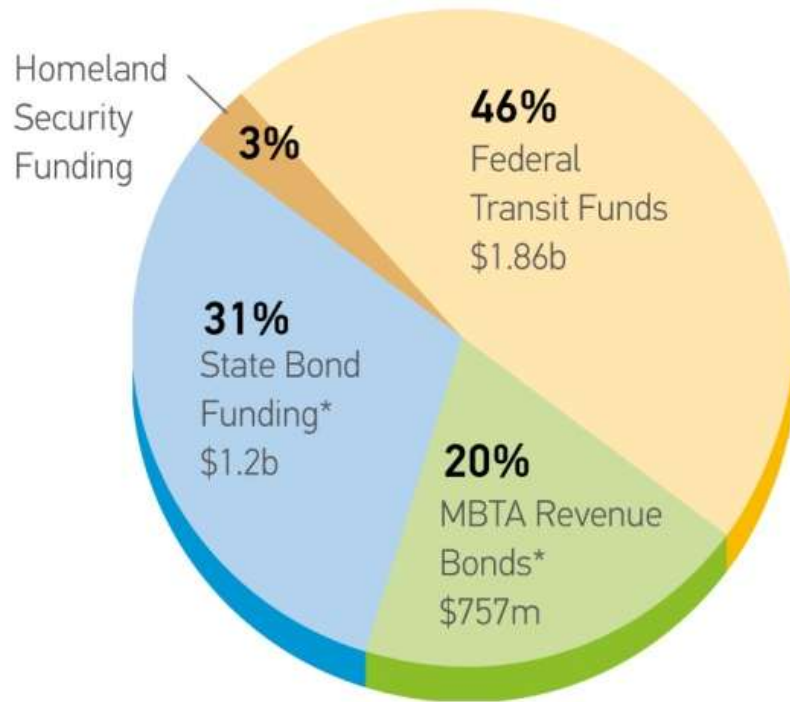
*Boston MPO
Paths to a Sustainable Region
September 2011*

“The Authority needs to spend approximately \$470 million per year to maintain the current “State of Good Repair” backlog which is approximately \$3.0 billion.”

*MBTA Draft Capital Investment Program
for FY2013-2017
December 2011*

INVESTING IN A 21ST CENTURY TRANSIT SYSTEM

The MBTA's Capital Investment Plan FY12-16: Sources of \$3.8 billion

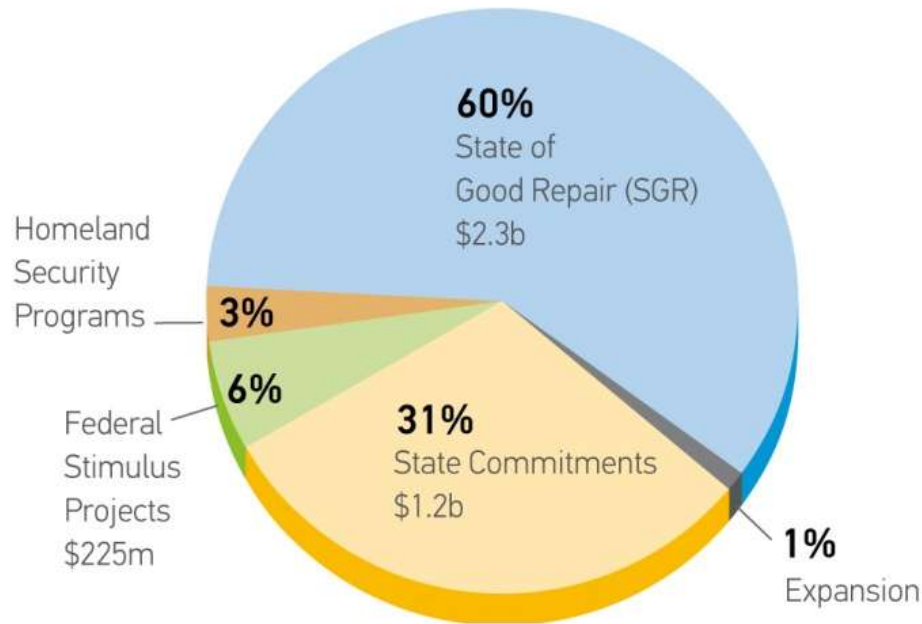


Source: Maxed Out

SOURCE: MBTA Presentation to the Board September 9, 2011

* Borrowing is the source of funding.

The MBTA's Capital Investment Plan FY12-16: Uses of \$3.8 billion



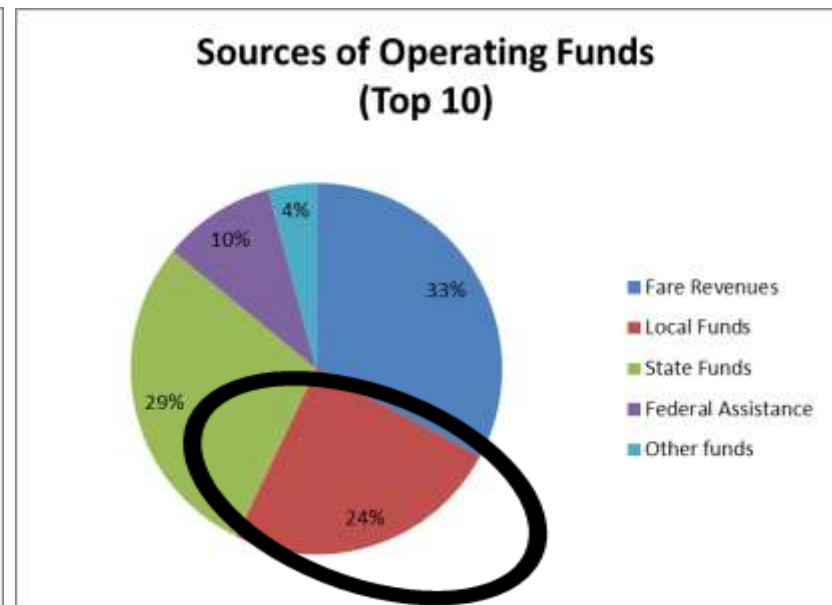
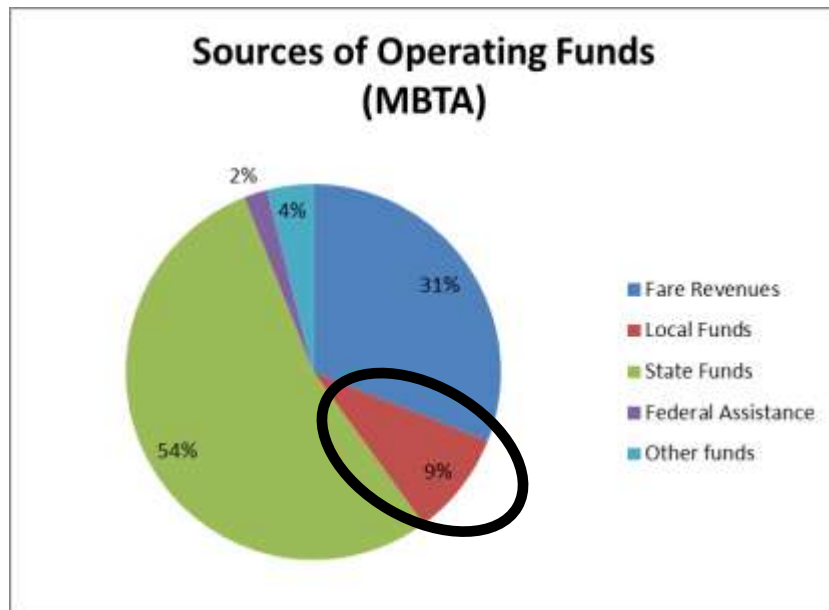
Source: *Maxed Out*

What about the future?



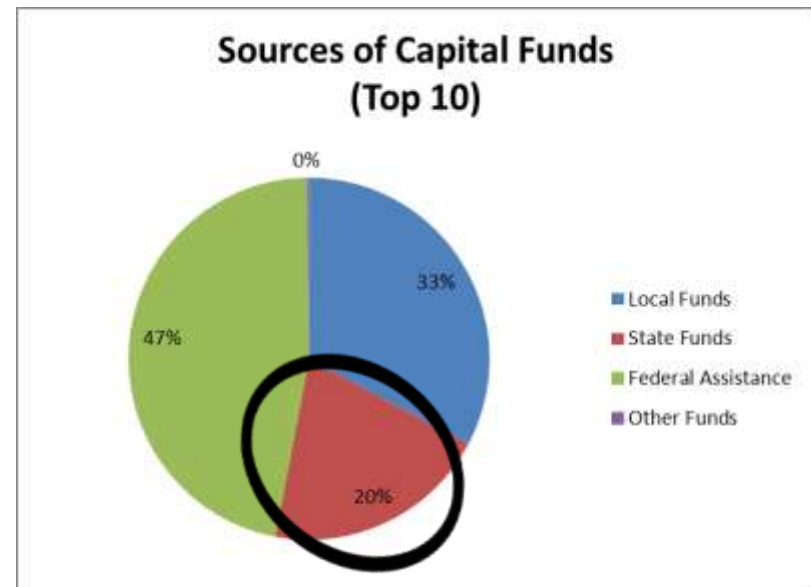
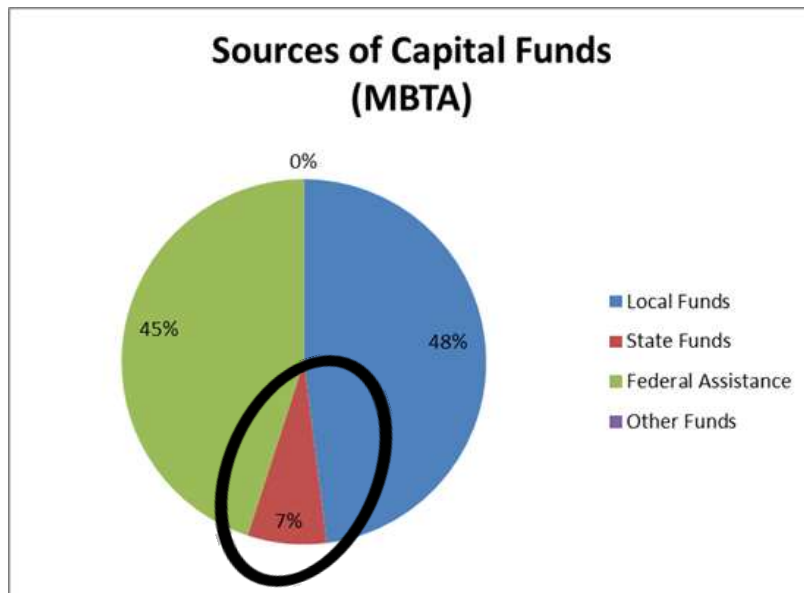
HOW DO MBTA FINANCES COMPARE TO OTHER SYSTEMS?

Sources of operating funds: MBTA and its peer agencies



Source: National Transit Database

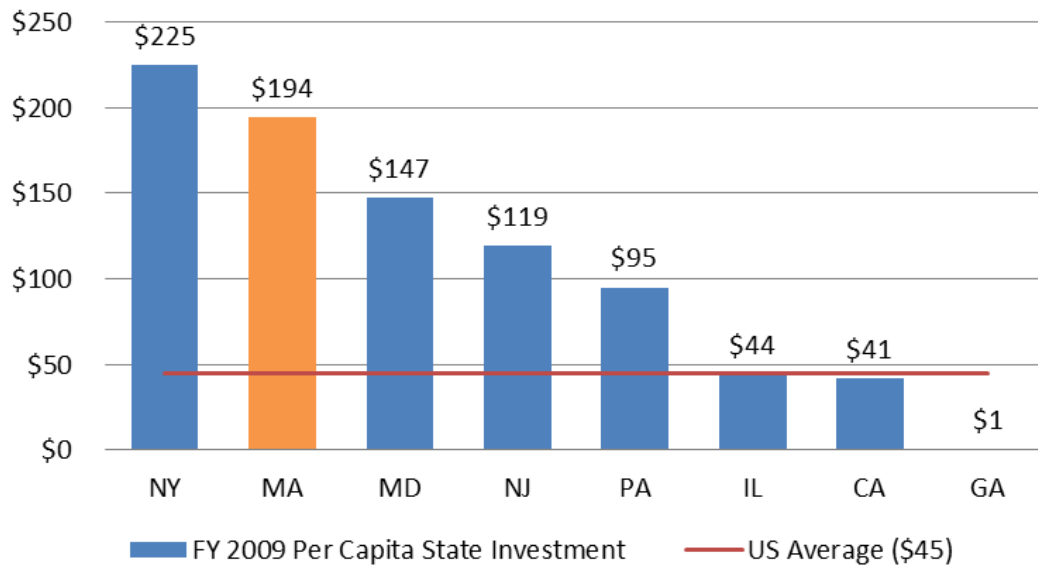
Sources of capital funds: MBTA and its peer agencies



Source: National Transit Database

The role of state subsidies

FY 2009 Per Capita State Investment in Transit



Source: AASHTO 2010 Survey of State Funding for Public Transportation (using FY2009 data)

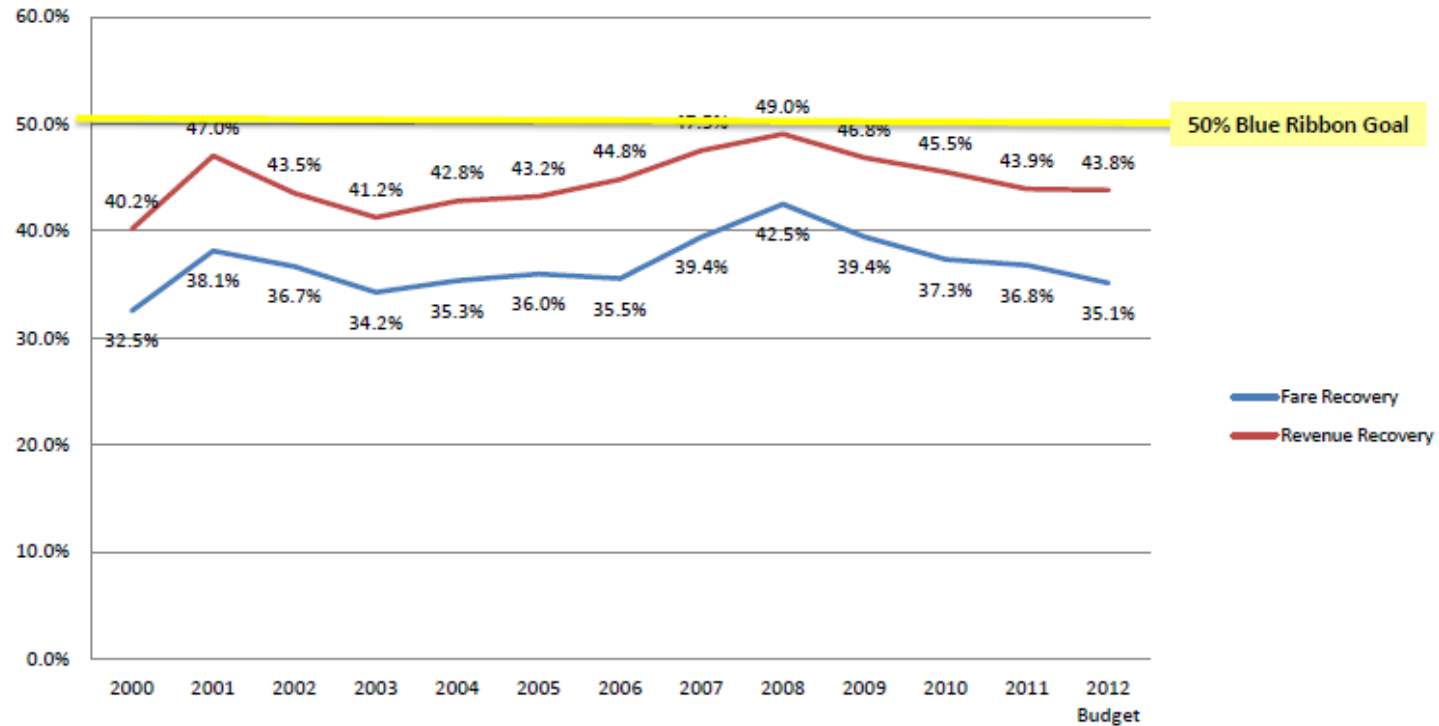
FIGURE 4

Total Local and State Revenue For MBTA Operations FY 2011



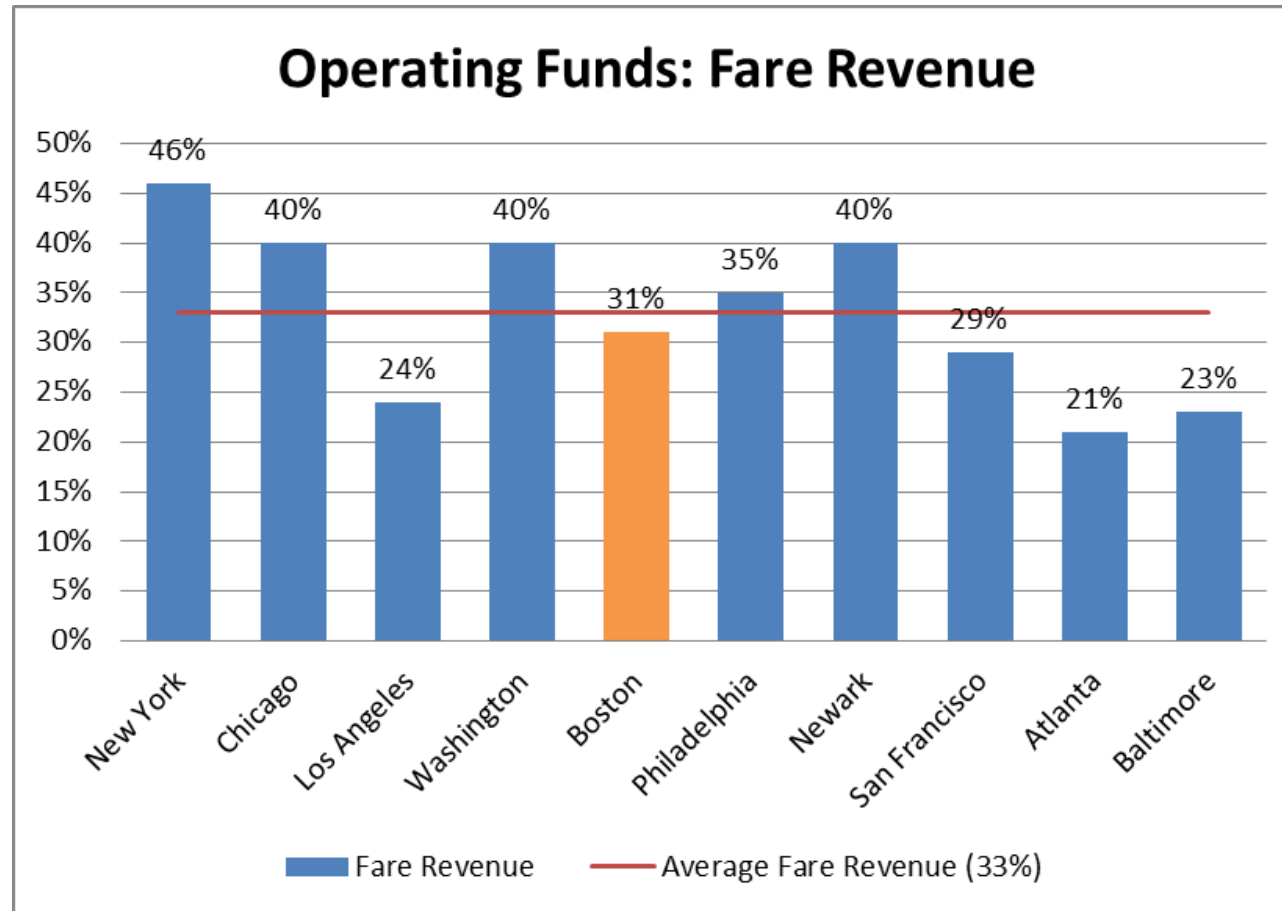
SOURCE: MassDOT Budget FY 2011

The role of fares: MBTA recovery ratios over time



Notes: **Fare Recovery Ratio** = Fares divided by operating expenses
Revenue Recovery Ratio = Total revenue (excluding dedicated sources) divided by operating expenses
 The recovery ratio calculations do not include debt service.

The role of fares: Recovery ratios at peer transit agencies



Source: National Transit Database

The role of fares: Fare levels at peer transit agencies

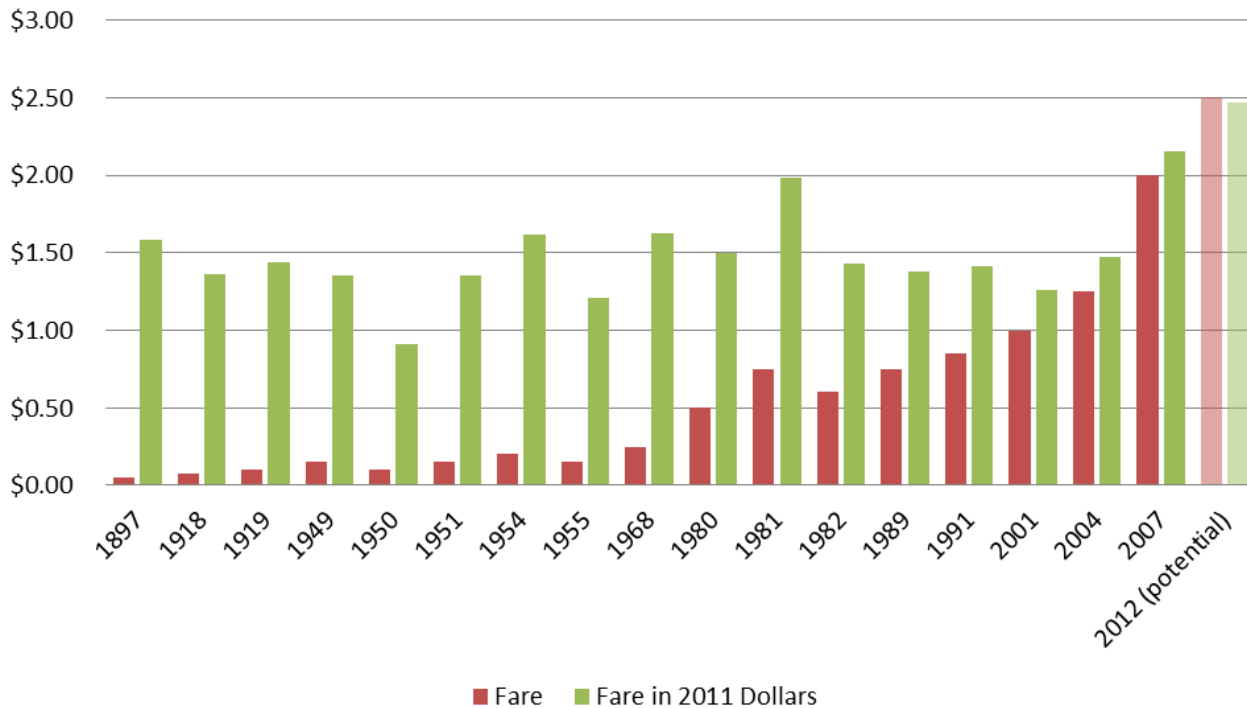
Agency	City	Subway Base Fare	Local Bus Base Fare	Last Fare Increase
MTA New York City Transit	New York	\$2.50	\$2.50	2011
Chicago Transit Authority	Chicago	\$2.25	\$2.25	2009
Los Angeles County Metropolitan Transportation Authority	Los Angeles	\$1.50	\$1.50	2011
Washington Metropolitan Area Transit Authority	Washington	\$1.95	\$1.70 (up to \$ 5.25)	2010
Massachusetts Bay Transportation Authority	Boston	\$2.00	\$1.50	2007
Southeastern Pennsylvania Transportation Authority	Philadelphia	\$2.00	\$2.00	2010
New Jersey Transit Corporation	Newark	\$2.25	\$1.50	2010
San Francisco Municipal Railway	San Francisco	\$5.00	\$2.00	2011
Metropolitan Atlanta Rapid Transit Authority	Atlanta	\$2.50	\$2.50	2011
Maryland Transit Administration	Baltimore	\$1.60	\$1.60	2003

Comparison based on single trip cash fares (for MBTA, base fare is \$1.70 for subway and \$1.25 for bus if Charlie Card is used)

THE LOOMING FARE INCREASE

MBTA fares: History

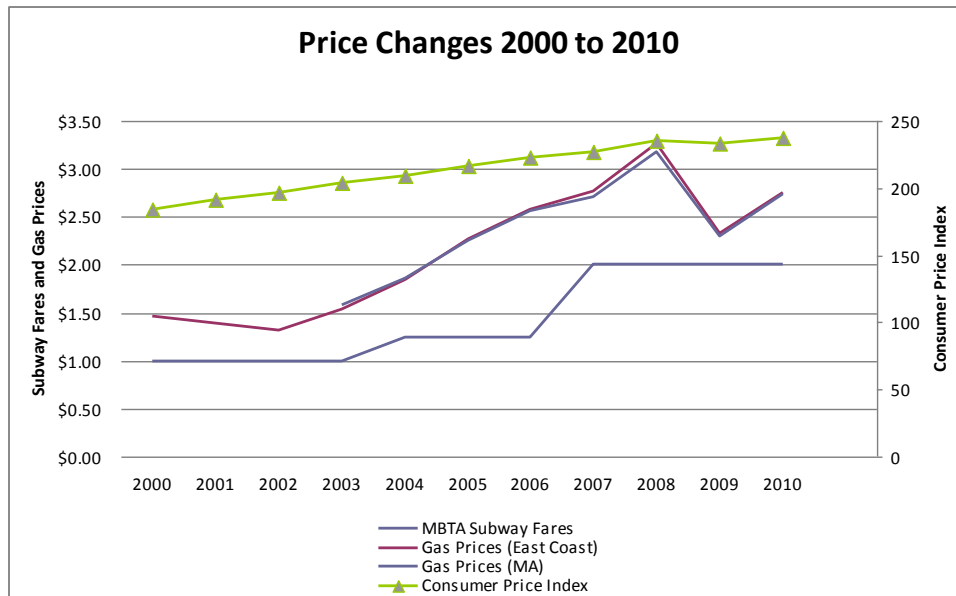
MBTA Subway Fare History



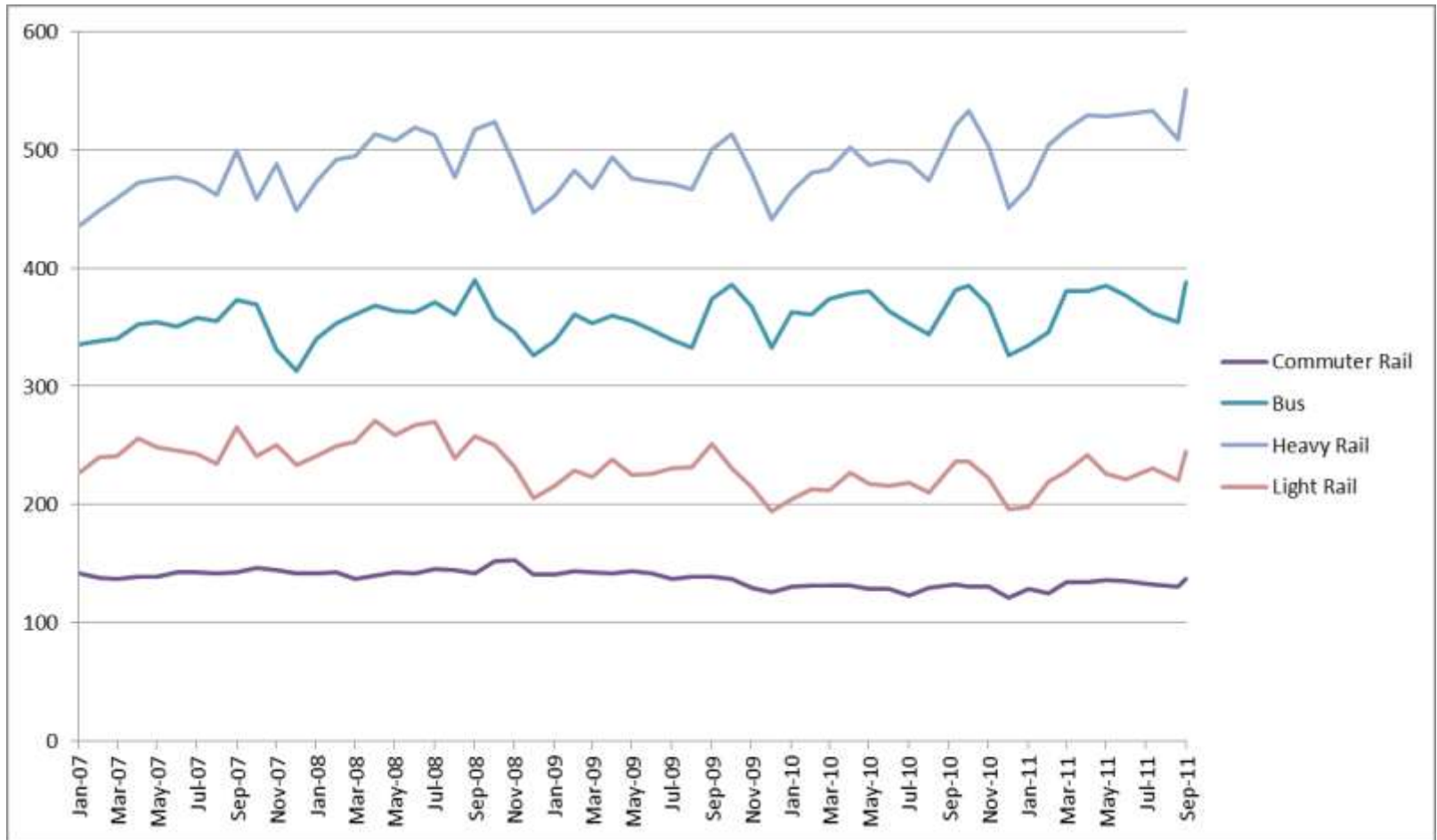
Year	Fare	Fare in 2011 Dollars
1897	\$0.05	\$1.58
1918	\$0.08	\$1.36
1919	\$0.10	\$1.44
1949	\$0.15	\$1.35
1950	\$0.10	\$0.91
1951	\$0.15	\$1.35
1954	\$0.20	\$1.62
1955	\$0.15	\$1.21
1968	\$0.25	\$1.63
1980	\$0.50	\$1.50
1981	\$0.75	\$1.98
1982	\$0.60	\$1.43
1989	\$0.75	\$1.38
1991	\$0.85	\$1.41
2001	\$1.00	\$1.26
2004	\$1.25	\$1.47
2007	\$2.00	\$2.15
2012 (potential)	\$2.50	\$2.47

Since the last fare increase . . .

	January 2007	December 2011	Change
Gallon of gasoline	\$2.34	\$3.40	46%
Consumer Price Index	202.416	226.421	12%
Unemployment rate	4.6%	7.3%	59%
MBTA base fare	\$2.00	\$2.00	0%

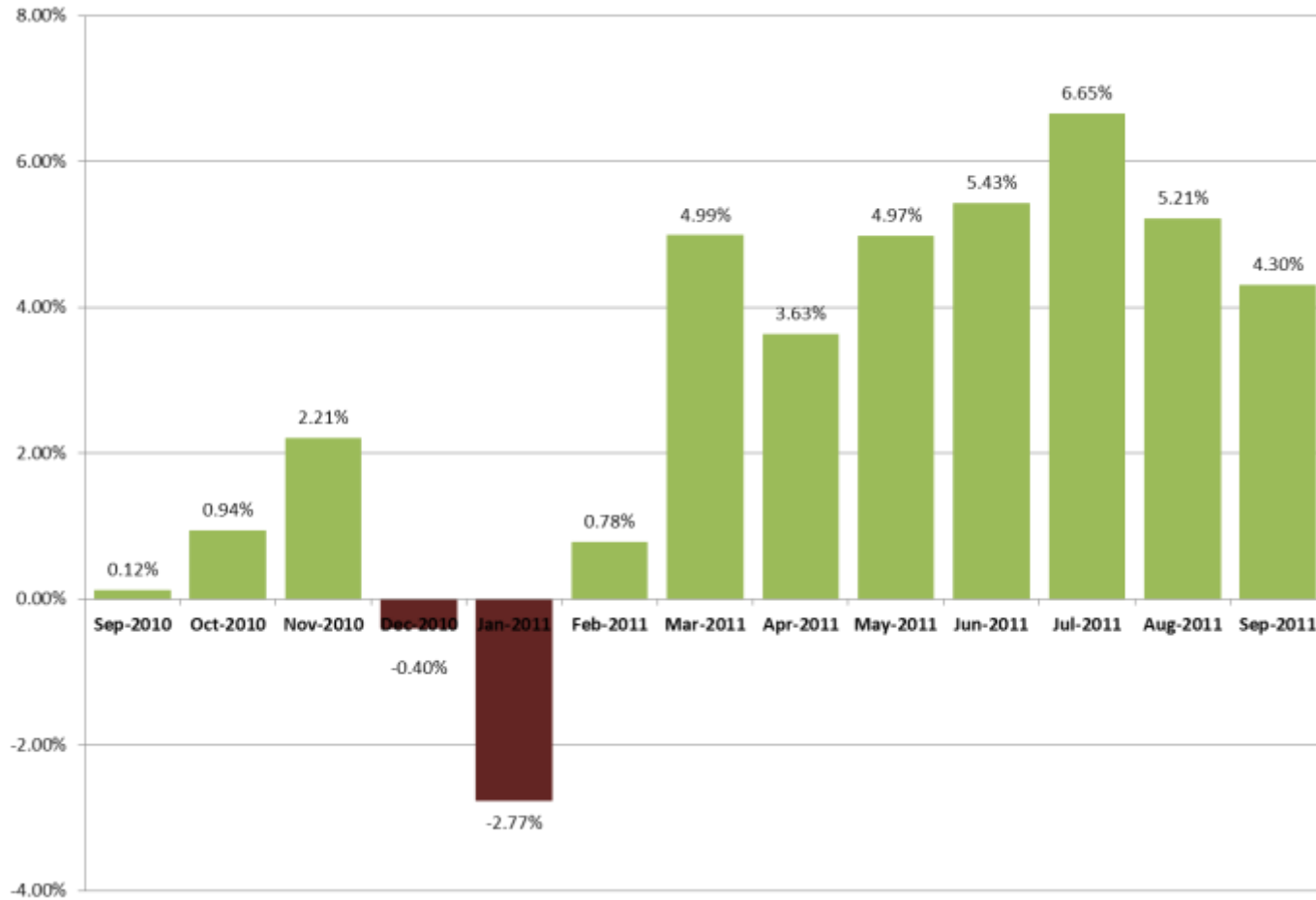


Ridership is generally up . . .



Source: MBTA

. . . Especially this past year



Source: MBTA

How might a fare increase affect ridership?

- Elasticity is a measure that determines how many riders stop taking transit when fares are increased
- An elasticity of -0.3 means that a 10% increase in fares causes a 3% reduction in ridership

$$\text{elasticity} = \frac{\% \text{ change in ridership}}{\% \text{ change in fare}}$$

$$\text{elasticity of } .3 = \frac{\% \text{ change in ridership}}{10.00\%}$$

$$\% \text{ change in ridership} = .3 \times .10$$

$$\% \text{ change in ridership} = 3.00\%$$

Elasticity of .3 means a 10% change in fares causes 3% change in ridership

Modal Category	Single-Ride Elasticity	Pass Elasticity
Bus (adult)	-0.10 to -0.30	-0.20 to -0.40
Subway (adult)	-0.15 to -0.35	-0.20 – 0.40
Commuter Rail (adult)	-0.25 to -0.45	-0.05 to -0.20

CTPS Elasticities Calculated from 2007 Fare Increase

But elasticity \neq equity

- Our research looked at ridership loss as predicted by elasticities
- The same demographic factors that affect elasticity also have equity implications
 - For example, more transit-dependent riders may be more likely to continue to use transit (since they may lack alternatives)
 - But if they are low income it may be inequitable to raise fares and thus make transit more expensive
- Tensions may therefore exist between fare structures that minimize ridership loss and those that are equitable to transit-dependent riders

Elasticities: Comparisons to Other Transit Agencies

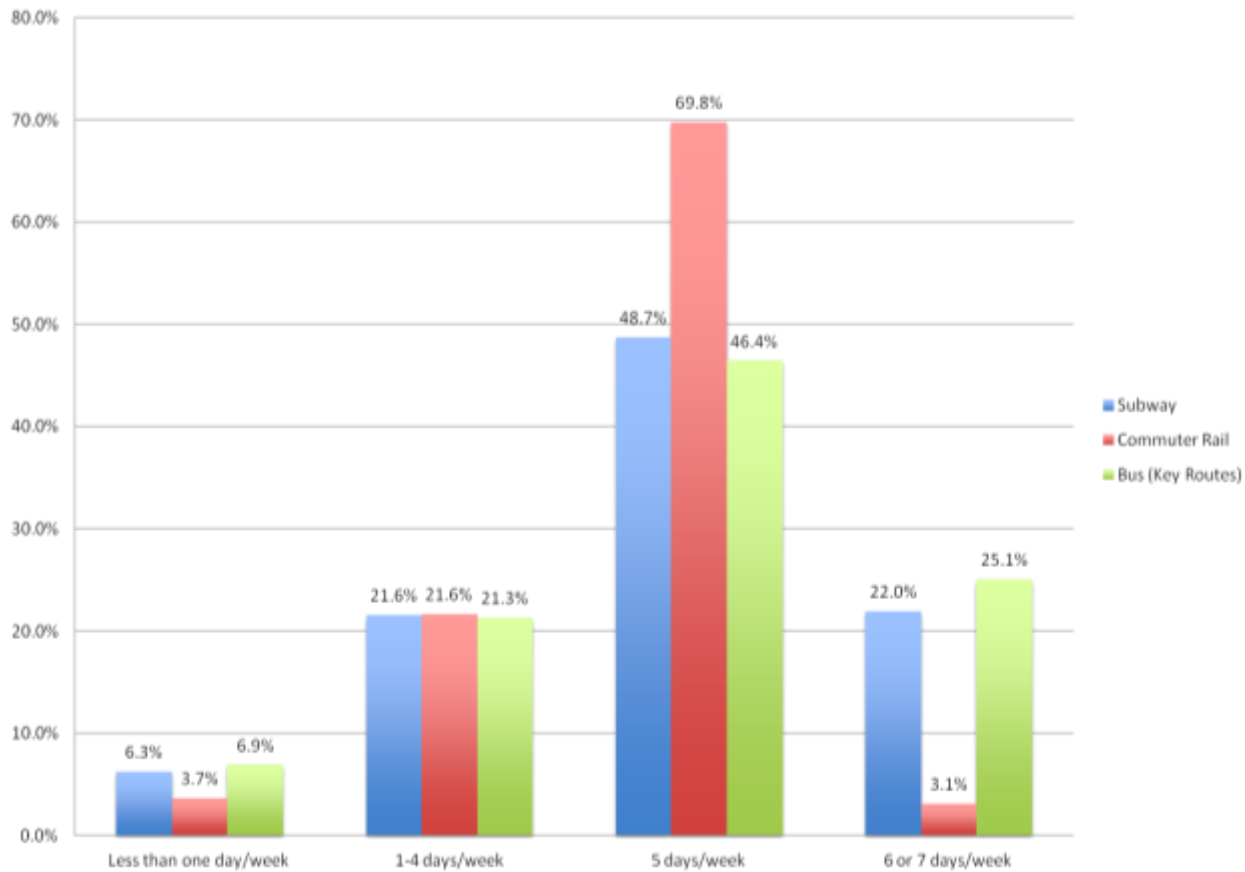
Transit Agency	Peak Ridership Elasticity	Off-Peak Elasticity
MTA New York City Transit	-0.2	-0.2
Chicago Transit Authority	-0.28	-0.56
Bay Area Rapid Transit	-0.22	-0.22

Elasticities: What happened after Washington DC raised fares?

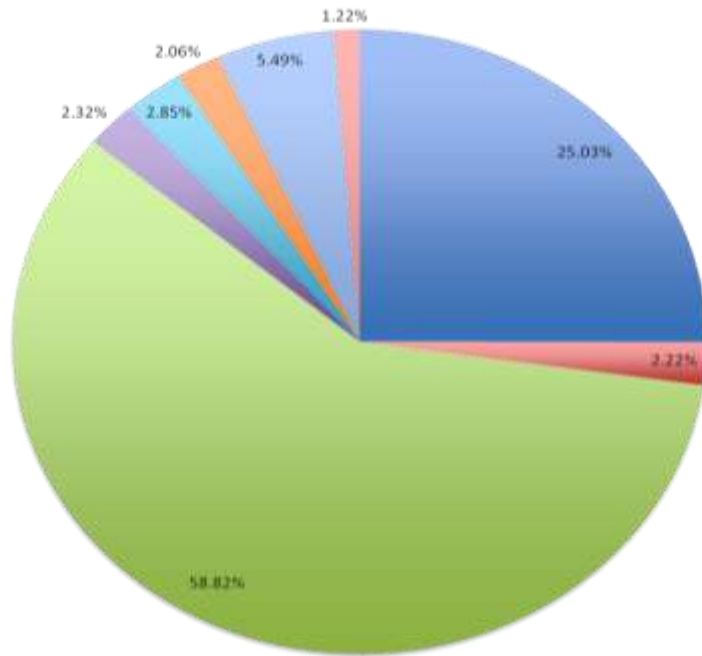
- Preliminary assessment of its 2011 fare increase
 - Short Term Ridership Forecasting Model
- MetroRail: -0.12 to -0.18
- MetroBus: -0.20 to -0.26

% Change in Fare	Peak	Off-Peak	Weekend
<15%	-0.125	-0.175	-0.2
15 - 20%	-0.15	-0.2	-0.225
20%<	-0.175	-0.225	-0.29

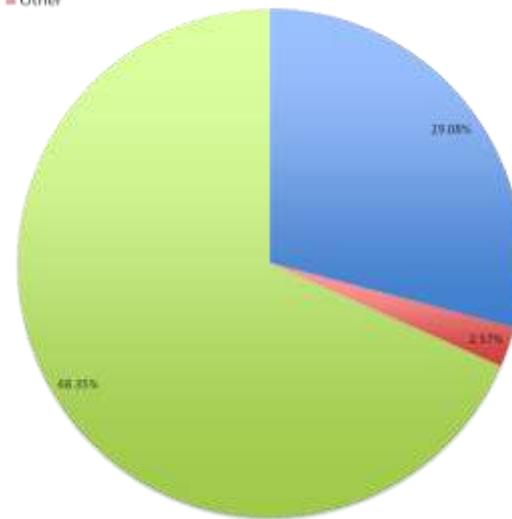
Factors affecting ridership loss: Many MBTA riders are regulars



The majority of MBTA passengers, even on buses, use monthly passes

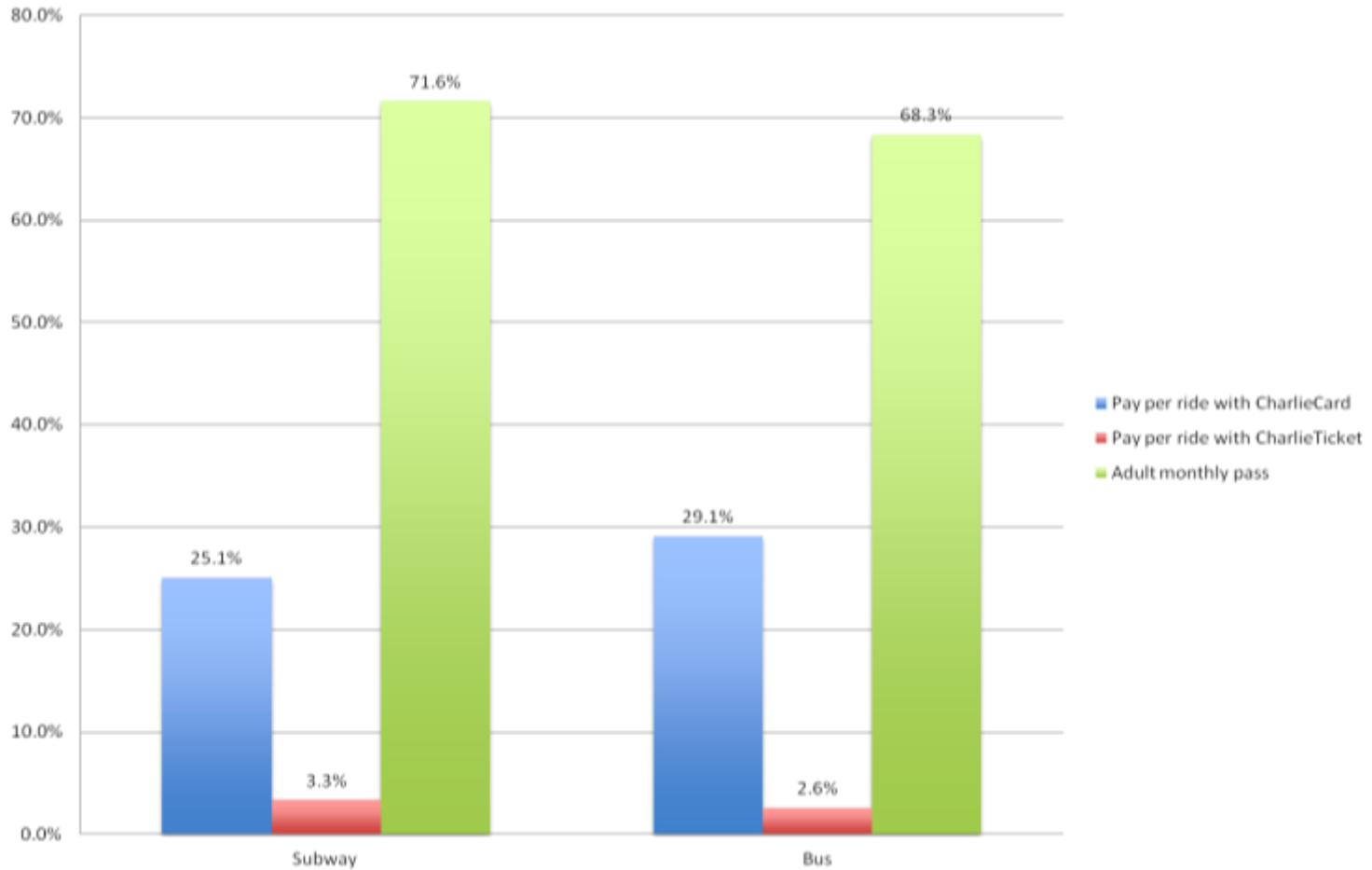


- Pay per ride with CharlieCard
- Pay per ride with CharlieTicket
- Monthly pass
- Full cash fare on-board
- Reduced fare/senior
- Reduced fare/disability
- 7-Day LinkPass
- Other



- Pay per ride with CharlieCard
- Pay per ride with CharlieTicket
- Monthly pass

Monthly pass usage is high among both subway and bus riders

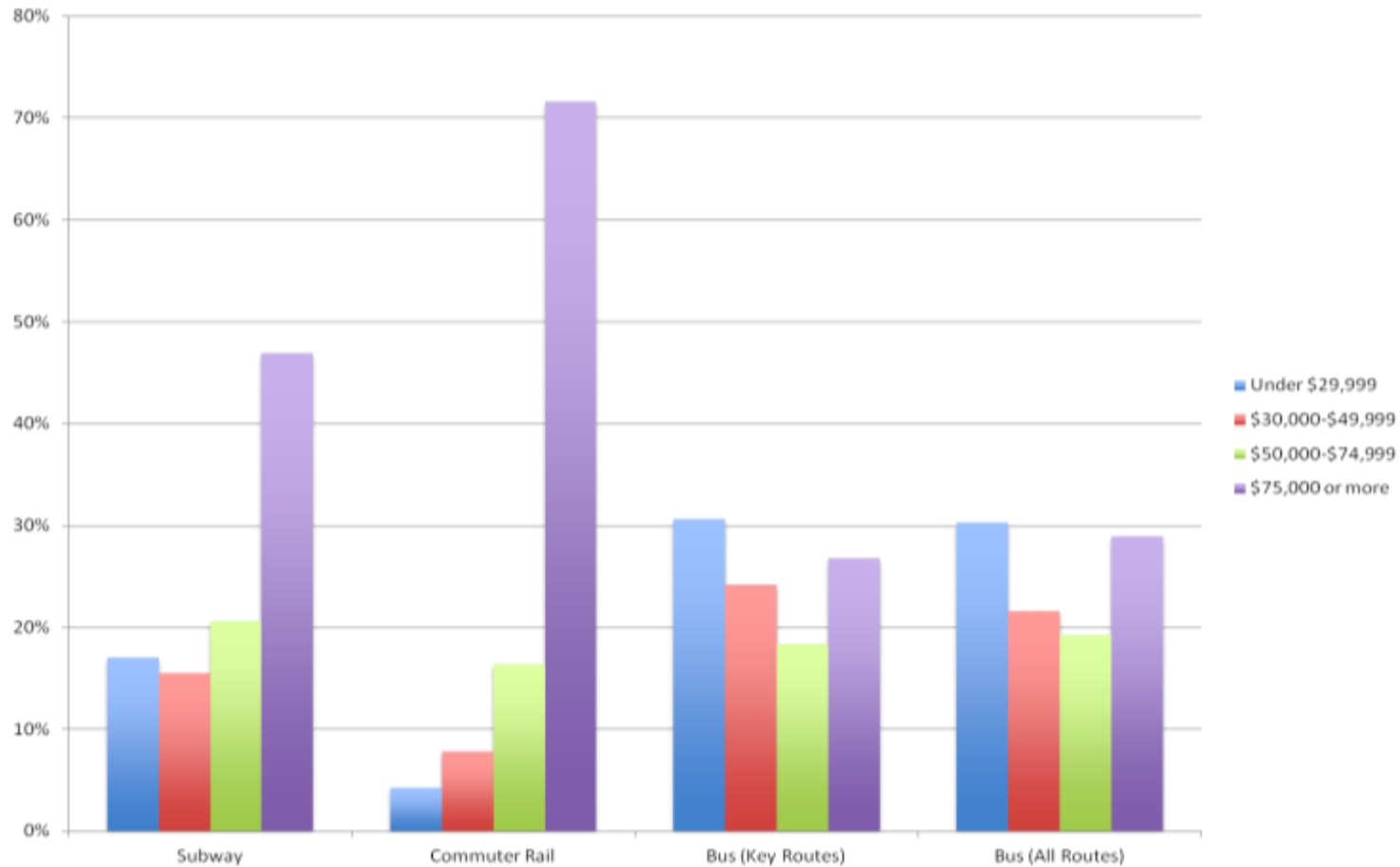


WHO WILL BE AFFECTED BY FARE INCREASES AND SERVICE CUTS?

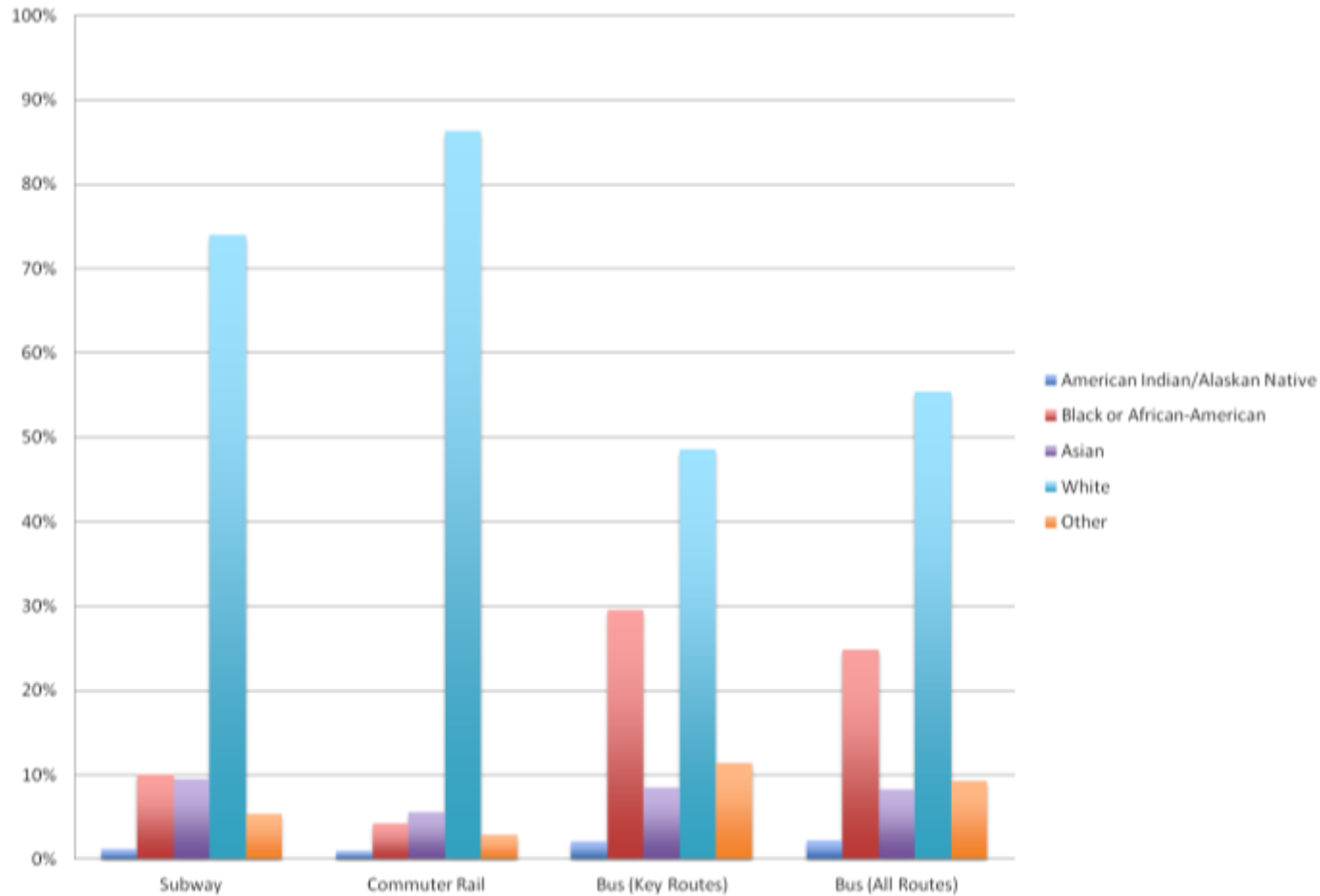
Understanding the MBTA's ridership: 2008-2009 passenger survey data

Mode	Surveys Distributed	Surveys Returned	Response Rate	Ridership	Sample Rate
Rapid Transit	122,000	22,767	18.7%	296,200	7.7%
Bus	72,000	12,313	17.1%	209,700	5.9%
Commuter Rail	42,000	12,440	29.6%	55,550	22.4%
Greenbush CRR	1,475	526	35.7%	2,075	25.3%
Commuter Boat	1,500	693	46.2%	2,035	34.1%
Inner Harbor Ferry	300	178	59.3%	525	33.9%
Total	239,275	48,917	20.4%	566,085	8.6%

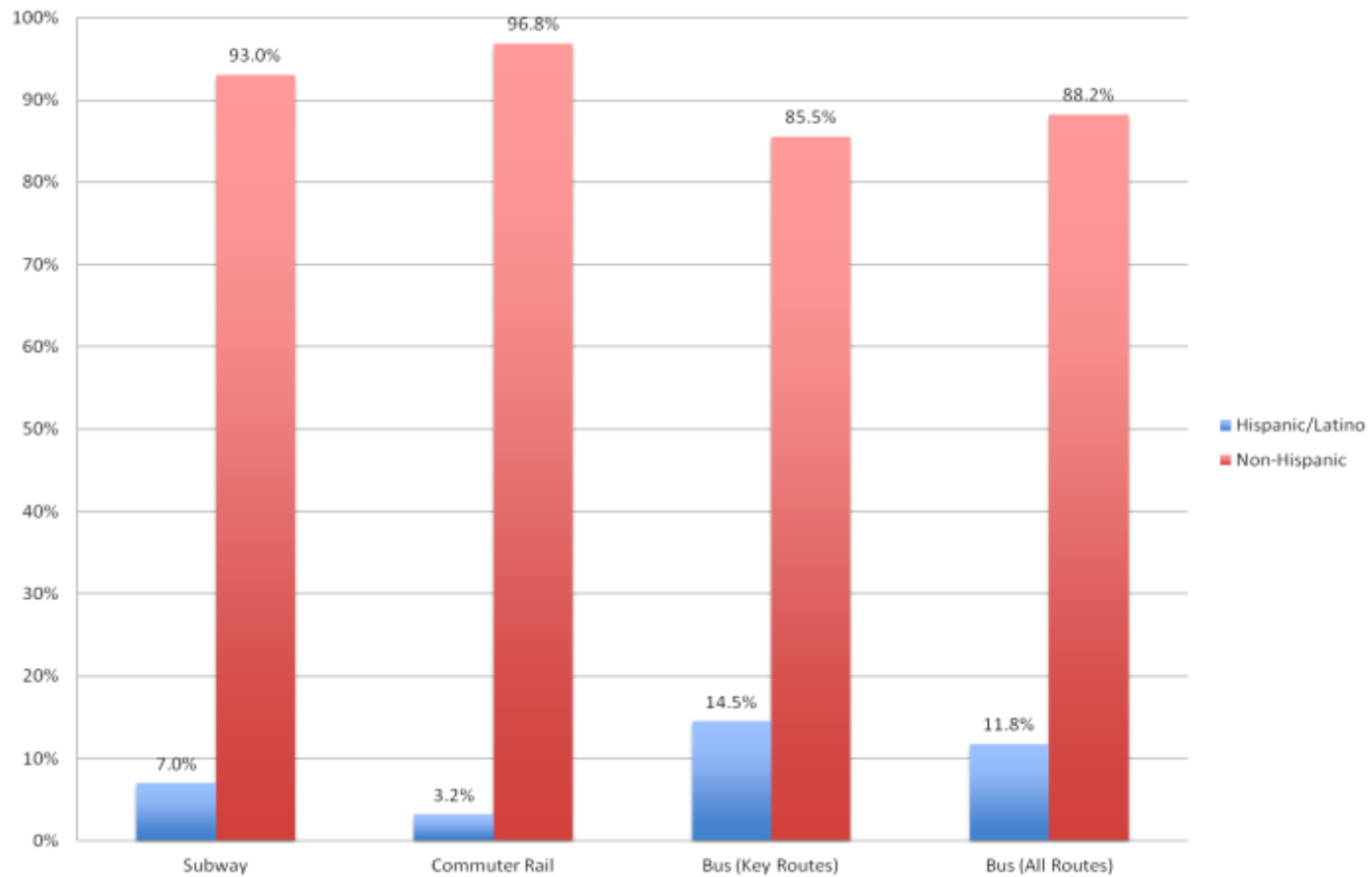
Demographics vary by mode: Income



Demographics vary by mode: Race

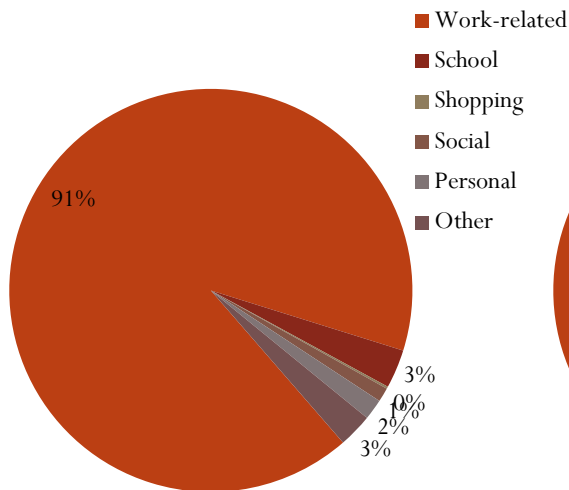


Demographics vary by mode: Ethnicity

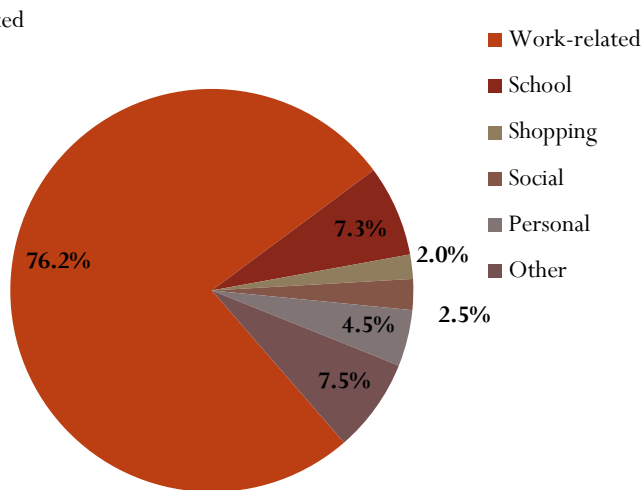


Who uses the MBTA: Trip Purpose

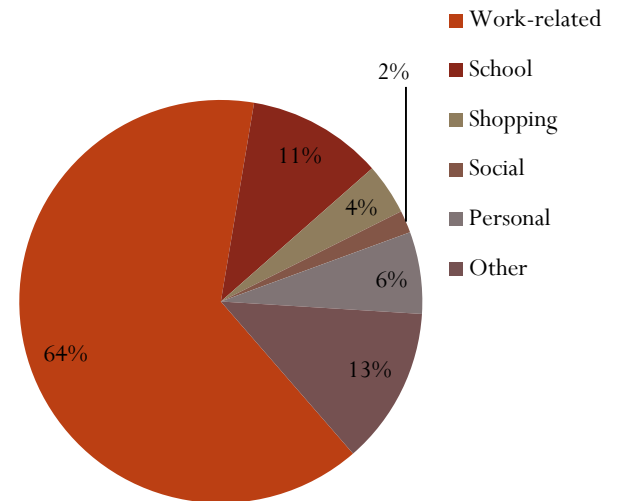
Commuter Rail



Subway



Bus



Who uses the MBTA: Vehicle Ownership

	Subway	Commuter Rail	Bus	All Transit
No vehicles	27.3%	6.1%	40.4%	31.34%
1 vehicle	41.9%	27.6%	39.1%	39.21%
2 vehicles	23.5%	49.9%	15.6%	22.27%
3 or more vehicles	7.5%	16.4%	5.0%	7.17%

WHERE DO WE GO FROM HERE?

The MBTA faces serious, structural financial challenges

- Increasing fares and/or cutting service will not solve the problem of operating deficits
 - Which are projected to grow annually, so the MBTA will face another shortfall in FY2014 and beyond
- Operating deficits will grow even faster if the MBTA continues to issue revenue bonds without a dedicated source of revenue for debt repayment
- No solution currently on the table will address
 - Structural operating deficits over time
 - Debt service (including the need to pay down principle)
 - State of Good Repair
 - Strategic investments to enhance and expand the MBTA system

The MBTA needs . . .

