



MBTA Program for Mass Transportation

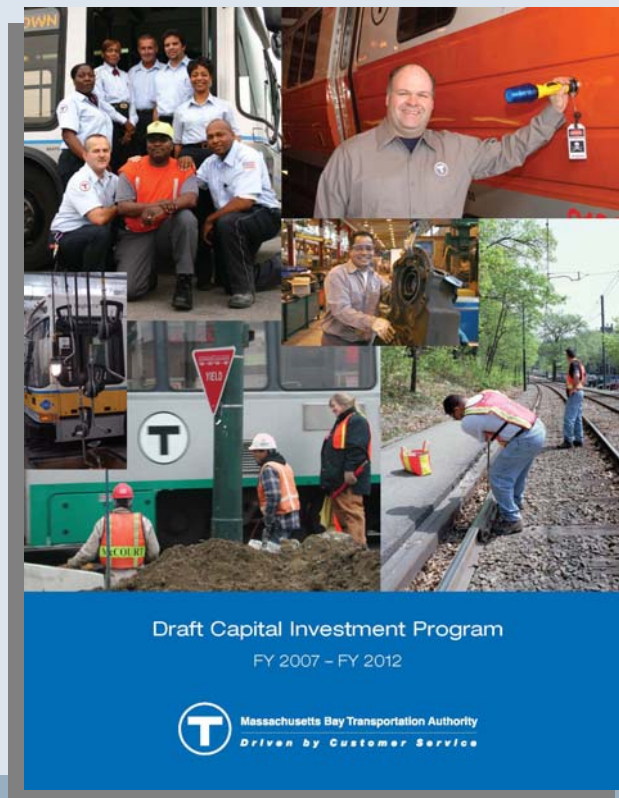
PMT Stakeholder Advisory Committee

April 27, 2007





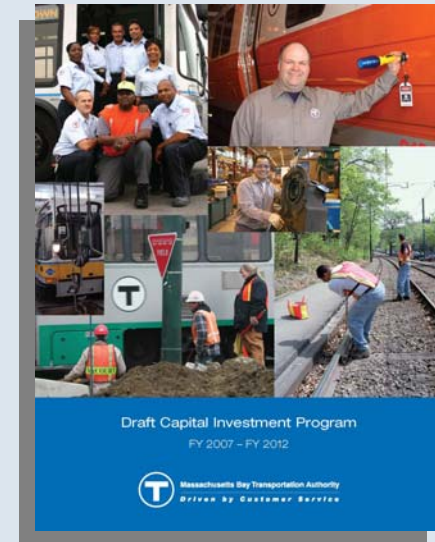
MBTA Capital Investment Program (CIP)





What is the Capital Investment Program?

- Rolling 5-year capital program
- Implements the 25-year Program for Mass Transportation
- The CIP is financially constrained
- The Draft CIP includes the current fiscal year





What does the Capital Program invest in?



OVER 2,500 REVENUE VEHICLES



275 STATIONS



885 MILES OF TRACK



496 BRIDGES



20 MILES OF TUNNELS



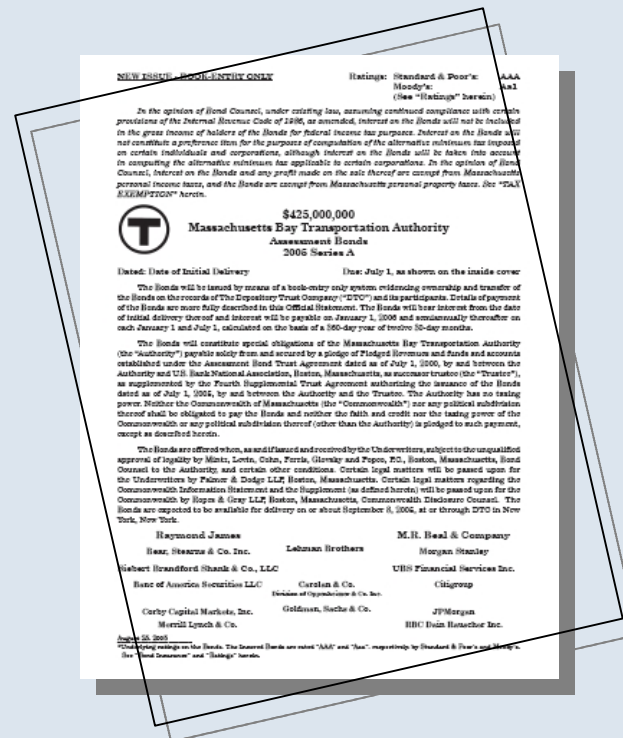
19 MAINTENANCE SHOPS





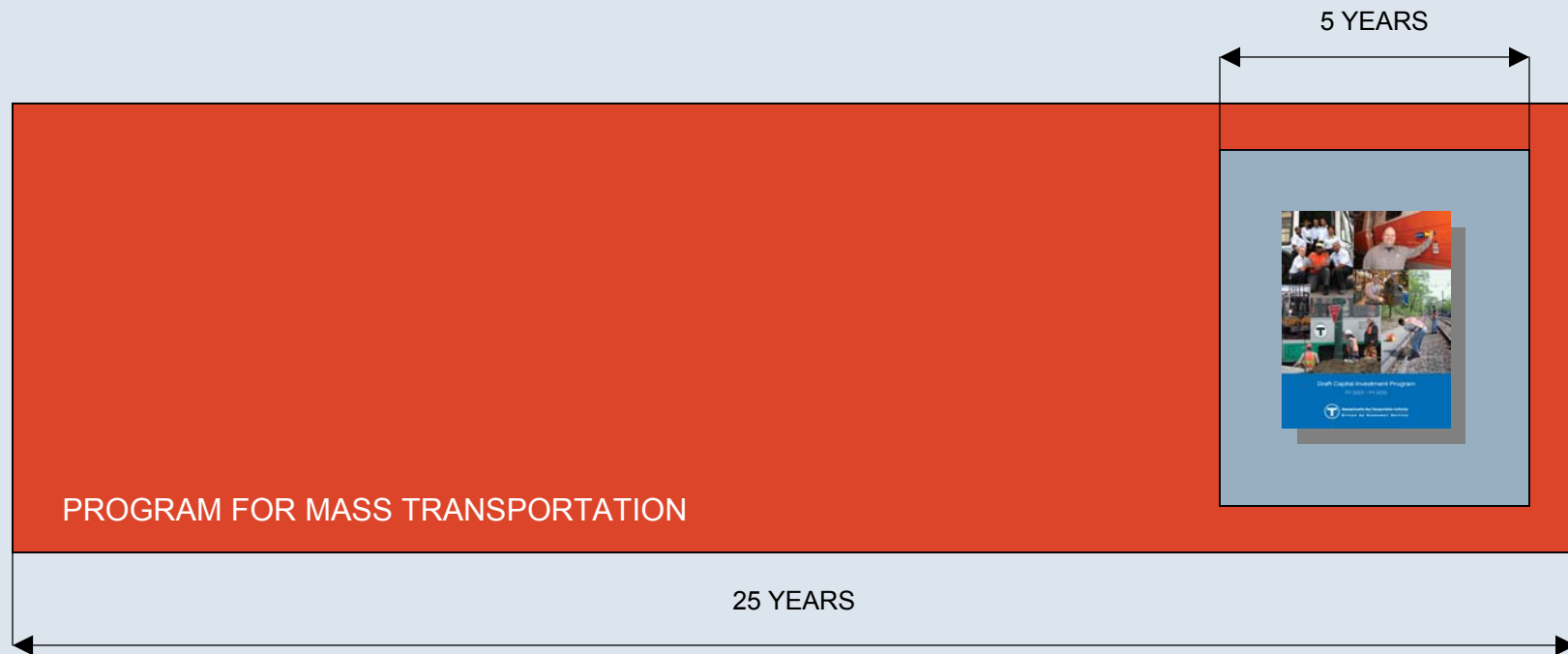
How is the CIP Funded?

- Federal Grants
- Non-Federal
 - Revenue Bonds
 - State Funds
 - Pay-as-you-go
- Alternative Financing
 - Project Financing
 - Grant Application Notes





CIP Relationship to PMT





Yearly Timetable

JUL

AUG

SEP

OCT

NOV

DEC

SUBMISSION
OF NEW
REQUESTS

PROJECT
EVALUATION

RELEASE OF
DRAFT CIP

PUBLIC
HEARINGS

JAN

FEB

MAR

APR

MAY

JUN

ADJUSTMENTS
TO CIP

MBTA BOARD OF
DIRECTORS
APPROVAL

SUBMIT TO STATE
LEGISLATURE
(NO LATER THAN MAY 1)





FY08–FY12 Basic Statistics

- Number of CIP applications \approx 569
- Dollar value of all requests \approx \$4.7b
- Projects recommended for funding \approx 66
- Dollar value of projects recommended \approx \$403m





CIP Prioritization Criteria

- Factor One: Safety, Health and Environment
- Factor Two: State of Good Repair
- Factor Three: Cost/Benefit
- Factor Four: Operational Impact
- Factor Five: Legal Commitments
- The MBTA works closely with the Central Transportation Planning Staff (CTPS) and the Boston Metropolitan Planning Organization (MPO) to ensure that minority and low-income regions are treated equitably regarding the delivery of transportation services.

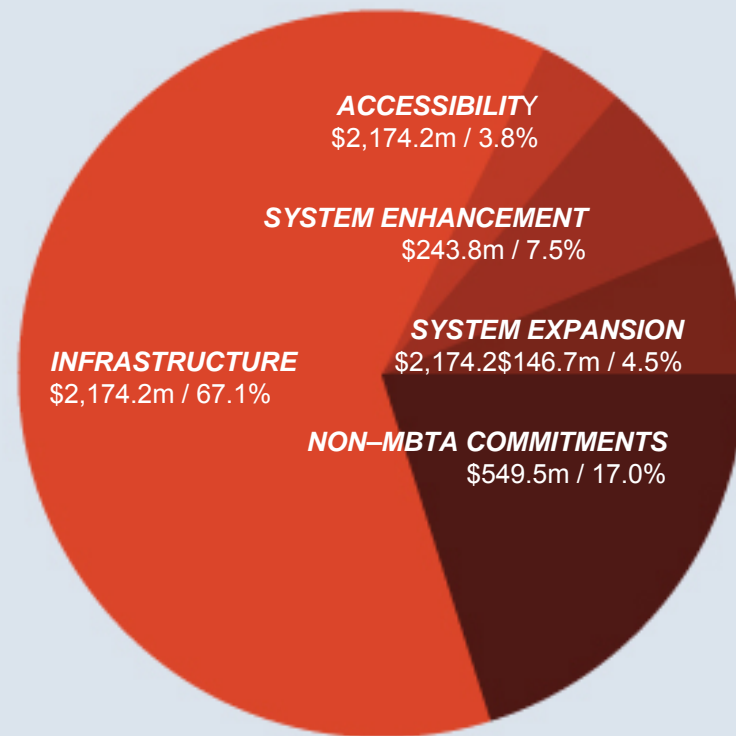




FY08–FY12 CIP

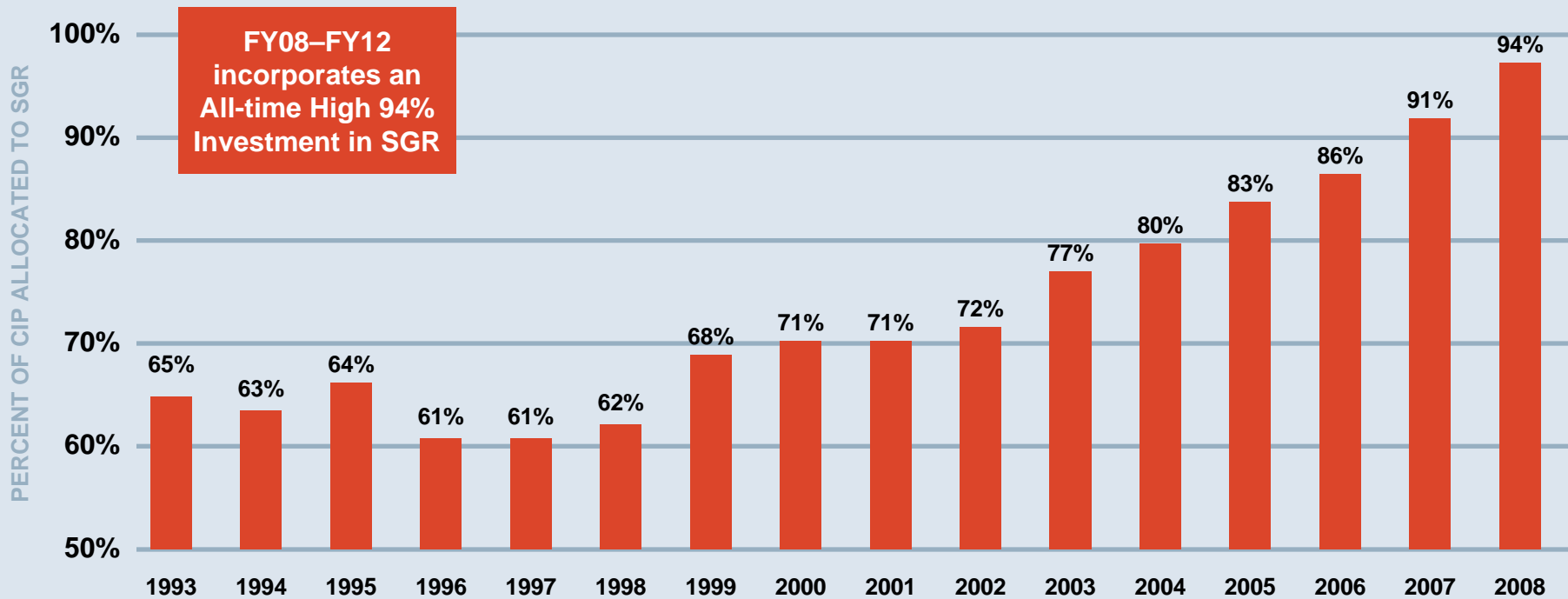
Programmatic Areas

- MBTA Funding: \$2,688m / 13%
- Non-MBTA Funding: \$549m / 17%





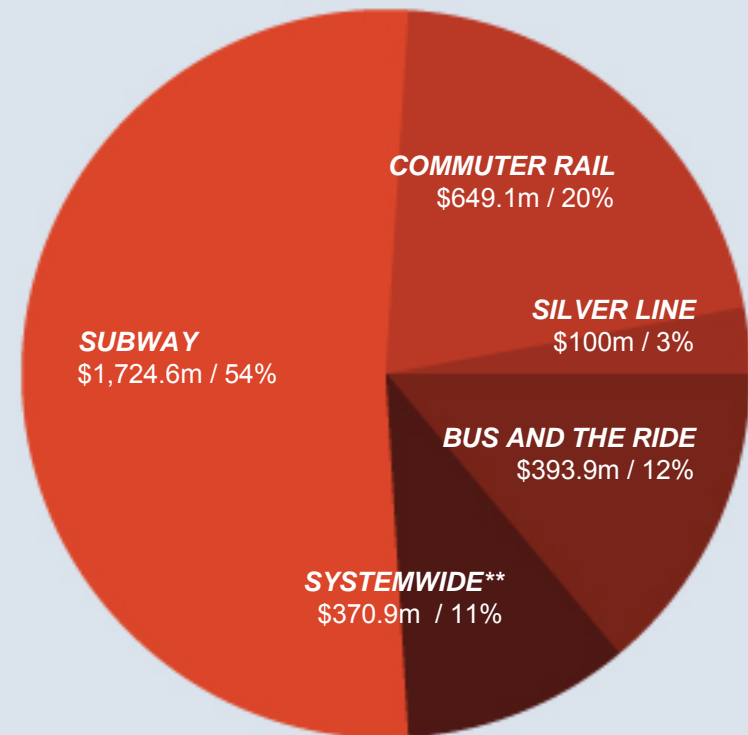
FY08–FY12 CIP Focus: State of Good Repair





FY08–FY12 CIP

Investment by Mode

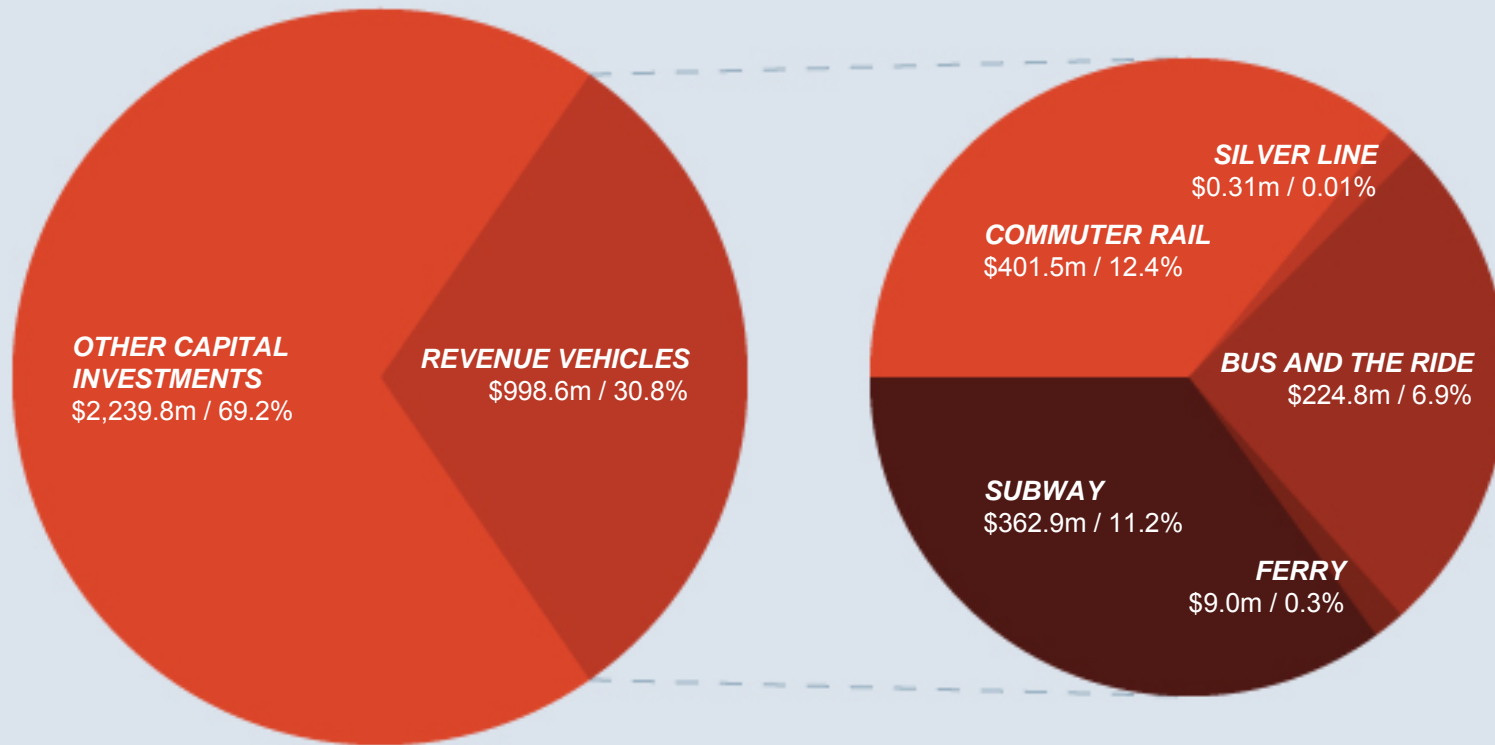


** Water Transportation investment is included under systemwide efforts





FY08–FY12 CIP – Revenue Vehicles





MBTA Program for Mass Transportation

MBTA Revenue Vehicles





Bus, Trackless Trolley and Bus Rapid Transit Operating Characteristics

- >180 routes
- 790 weekday AM peak pull-outs
- >7,500 weekday round trips
- >92,000 weekday vehicle miles





Bus and Trackless Trolley Fleet

QUANTITY	FLEET	SERVICE DATES
	Compressed Natural Gas (CNG) Vehicles	
17	New Flyer CNG 40ft	2001-2002
27	NeoPlan CNG 60ft	2003
299	NABI CNG 40ft	2004
	Diesel Vehicles	
113	"Zero-Series" 40ft (diesel)	1994
258	"Zero-Series" 40ft (diesel)	1995
193	NeoPlan 40ft (emission controlled diesel)	2004
	Electric Vehicles	
7	Flyer Trackless Trolleys	1976
28	Electric Trolley Buses	2004
942	TOTAL (343 CNG, 193 ECD, 371 Diesel, 35 Electric Buses)	





Bus Rapid Transit Fleet

QUANTITY	FLEET	SERVICE DATES
17	Compressed Natural Gas 60ft Silver Line Washington Street	2003-2004
32	Dual Mode Articulated 60ft Silver Line Waterfront	2005-2006
49	TOTAL	





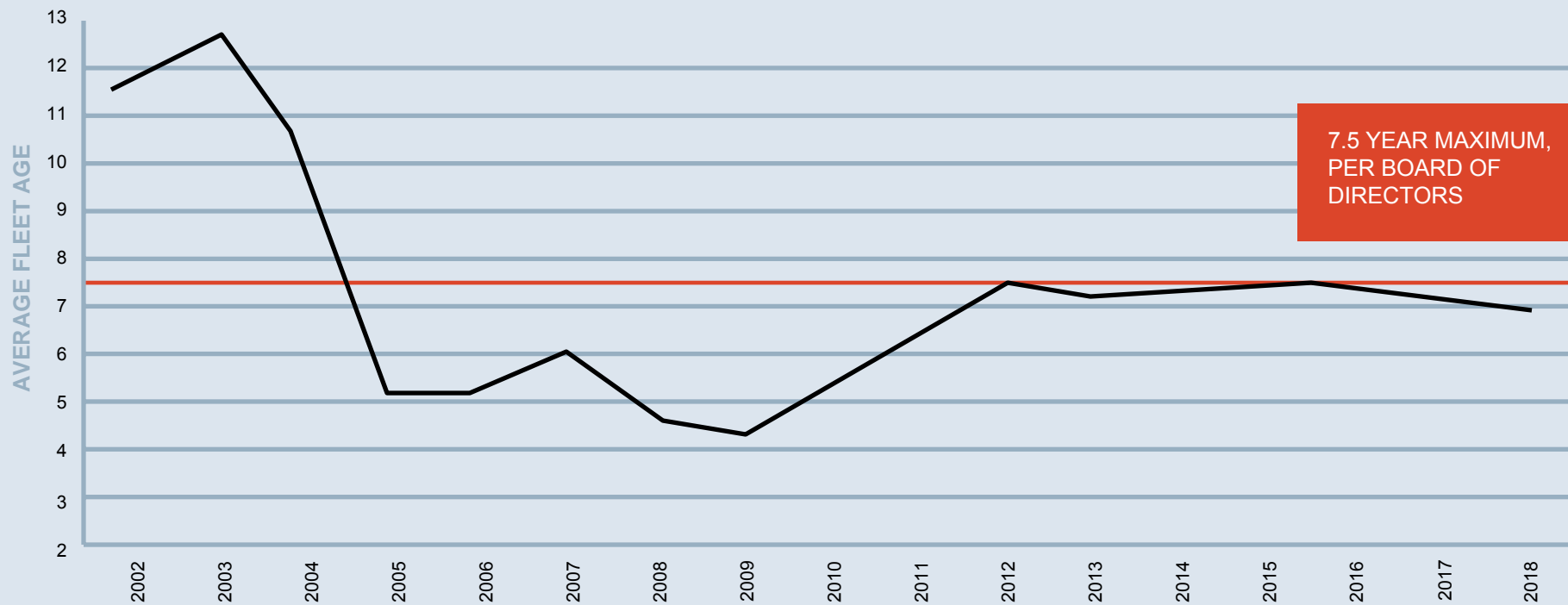
Bus Fleet Replacement

- **155 New Flyer Emission Controlled Diesel Buses.**
First bus entered service November 30, 2006.
All buses scheduled to enter service by mid 2007.
- After these deliveries the average fleet age will be 5.5 years
- December 2006-MBTA Board approved option for additional 155 New Flyers ECD buses.
- All new buses are GPS-equipped, handicapped accessible, and have new on-board Variable Message Signs (VMS's)





Bus Fleet Average Age



7.5 YEAR MAXIMUM,
PER BOARD OF
DIRECTORS





Bus Maintenance

Completed in 2006

- 125 Midlife overhauls to extend life of each bus by an average of 6 years
- In-house overhaul on an additional ninety-seven 1994-95 Nova Series Buses
- Modification of all buses to accept new AFC Fare Boxes
- Program for A/C Compressors & Clutch Assembly for 376 Novas
- Engine compartment configuration program as part of the Bus Fire Safety Initiative





Bus Key Routes Improvement Program

- Improvements implemented December 30, 2006 on the following routes: 1, 15, 22, 23, 28, 32, 39, 57, 66, 71, 73, 77, 111, 116/117, and Silver Line Waterfront. Also, new Bus route 25 introduced to address crowding.
- Improvements to 16 routes with heaviest use, representing 41% of bus ridership.
- Primary goals: reduce crowding, improve service reliability and to improve a customer's experience when using our system.
 - Schedule and operational improvements
 - 600 new bus stop signs
 - 560 new schedule display cases
 - Updated schedules at bus stops
 - Additional field personnel strategically located to provide additional service management capabilities.

Customers should experience immediate improvements on their bus route

IMPROVED RELIABILITY 1

WINTER Effective December 30, 2006

Harvard/Holyoke Gate - Dudley Station via Mass Ave.

Serving: Boston Medical Ctr., BU Med Campus, MIT, Central Sq, Cambridge, Symphony Hall, Hynes Convention Center and connections to the Red, Green, Orange & Silver Lines

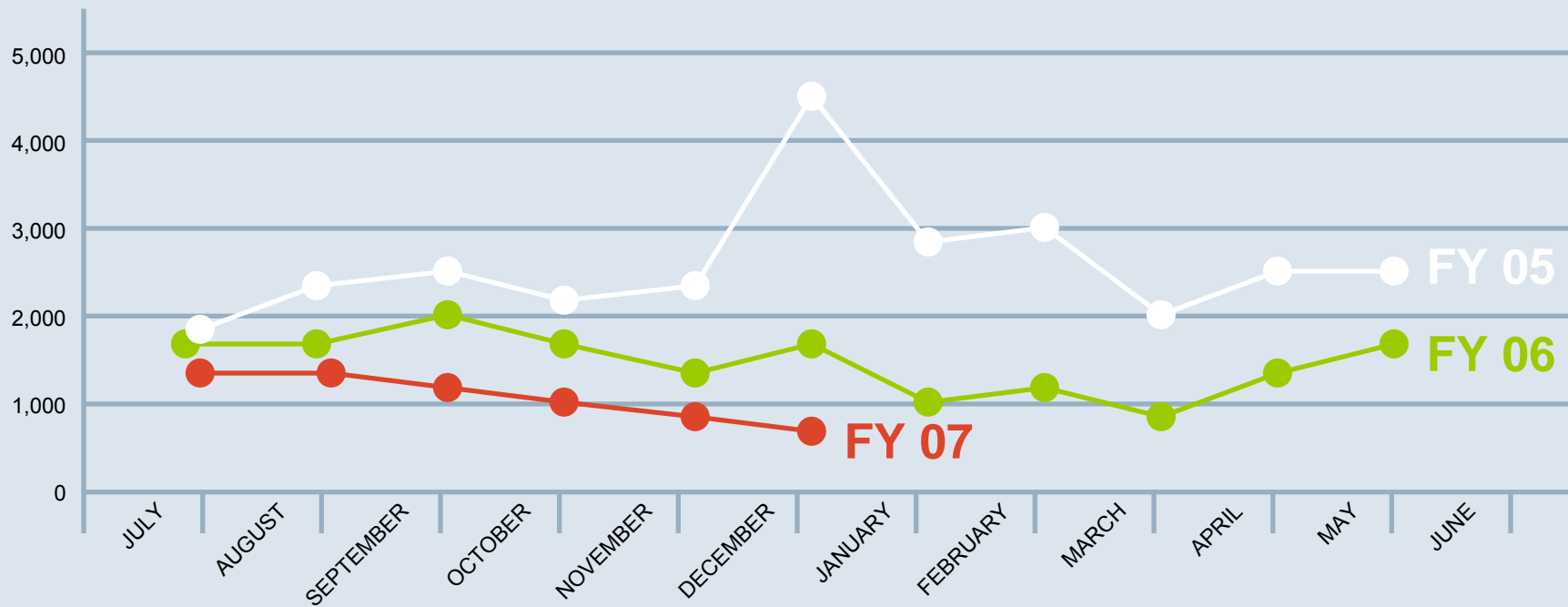
Visit mbta.com or call us to find a retail location where you can obtain Charlie-Cards and purchase MBTA passes and stored value.

Customer Service/Travel Info 617-222-3200
Toll Free.....1-800-392-6100
Hearing Impaired (TTY).....617-222-5146
Web Site.....www.mbta.com
Schedules subject to change, please visit near door.
Arrive times are approximate, subject to traffic.
NO SMOKING on MBTA property.
Driven by Customer Service



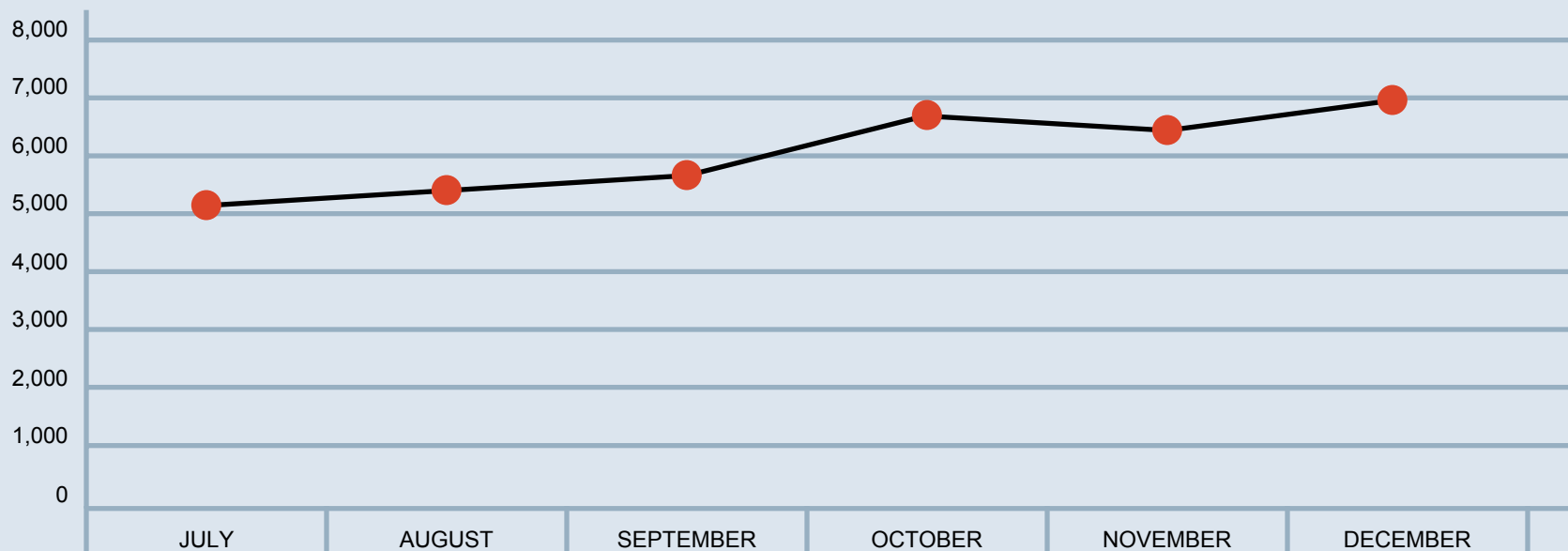


Bus Operations – Dropped Trips





Bus Operations – Mean Miles Between Failures



- Overall MMBF has improved by over 1,000 miles
- Constant monitoring of repeat failures
- Initiated power management program





Rapid Transit Operating Characteristics

Red Line: Ashmont/Braintree branches

- Peak Headway – 3.5 minutes (central)
- 6-car train consists
- 224 round trips per day
- 162 vehicle pull out in peak
- Car seating capacity: 50-62 passengers
- Car Crush capacity: 167
- Peak Hr. Load (2000 base): 11,160 (66% load factor)
(2030 NoBld): 13,050 (77% load factor)





Rapid Transit Operating Characteristics

Green: B, C, D,E branches

- Peak Headway – 1.4 minutes (central)
- 2-car train consists
- 1,247 round trips per day
- 150 vehicle pull out in peak – new in 2007 (prev. 136)
- Car seating capacity: 46 passengers
- Car Crush capacity: 110
- Peak Hr. Load (2000 base): 7,875 (85% load factor)
(2030 NoBld): 8,145 (88% load factor)





Rapid Transit Operating Characteristics

Orange Line

- Peak Headway – 5 minutes
- 6-car train consists
- 156 round trips per day
- 102 vehicle pull out in peak
- Car seating capacity: 58 passengers
- Car Crush capacity: 131
- Peak Hr. Load (2000 base): 9,315 (91% load factor)
(2030 NoBld): 9,730 (95% load factor)





Rapid Transit Operating Characteristics

Blue Line

- Peak Headway – 4 minutes
- 4-car train consists (6-car by 2008/9)
- 190 round trips per day
- 56 vehicle pull out in peak
- Car seating capacity: 42 passengers
- Car Crush capacity: 95
- Peak Load (2000 base): 6,435 (106% load factor)
(2030 NoBld): 7,020 (77% load factor)





Rapid Transit Fleets

LINE	FLEET	QUANTITY	SERVICE DATE
RED	No. 1 Fleet	74	1969
RED	No. 2 Fleet	58	1988
RED	No. 3 Fleet	86	1994
BLUE	No. 4 Fleet	70	1979
ORANGE	No. 12 Fleet	120	1981
GREEN	No. 7 Fleet	114	1986–88, 1997
GREEN	No. 8 Fleet	85	2000–2006
GREEN	PCC Cars	10	1945–1946





Service Improvements – Green Line

- Ten additional cars added to winter '07 schedule in AM and PM peak periods
- 76 Bredas now in service; remaining 9 vehicles planned to enter service by June 2007



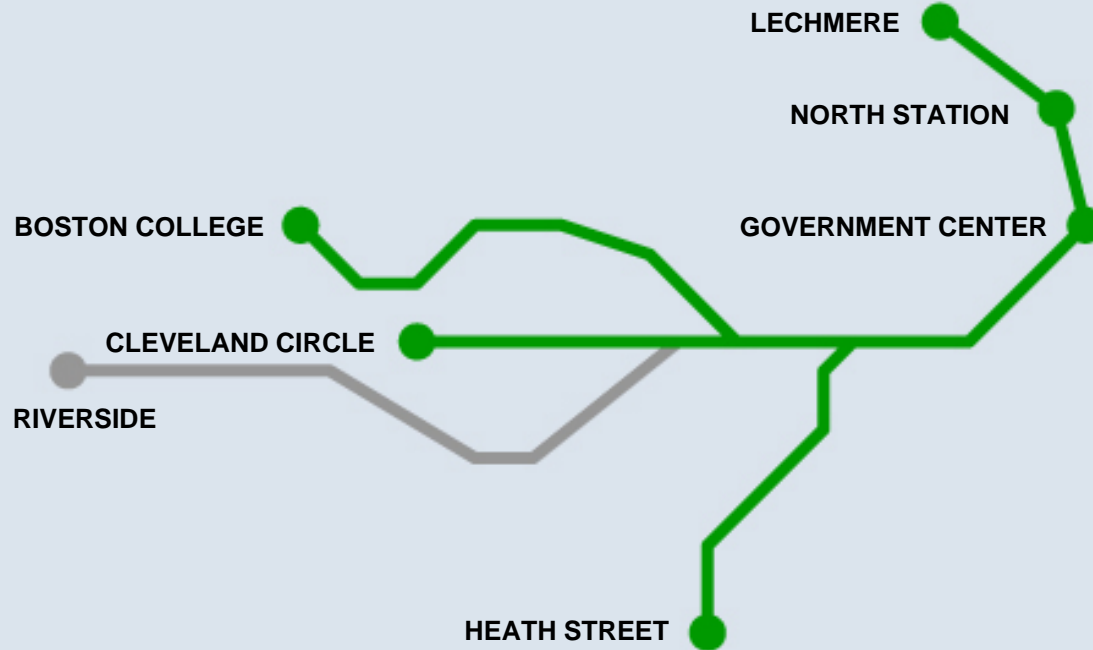
- Winter '07 service to Heath Street was resumed, and run-as-directed (RAD) trains were added to service on the C & D branches
- **First time in 15 years that car count is 150 for the winter timetable**





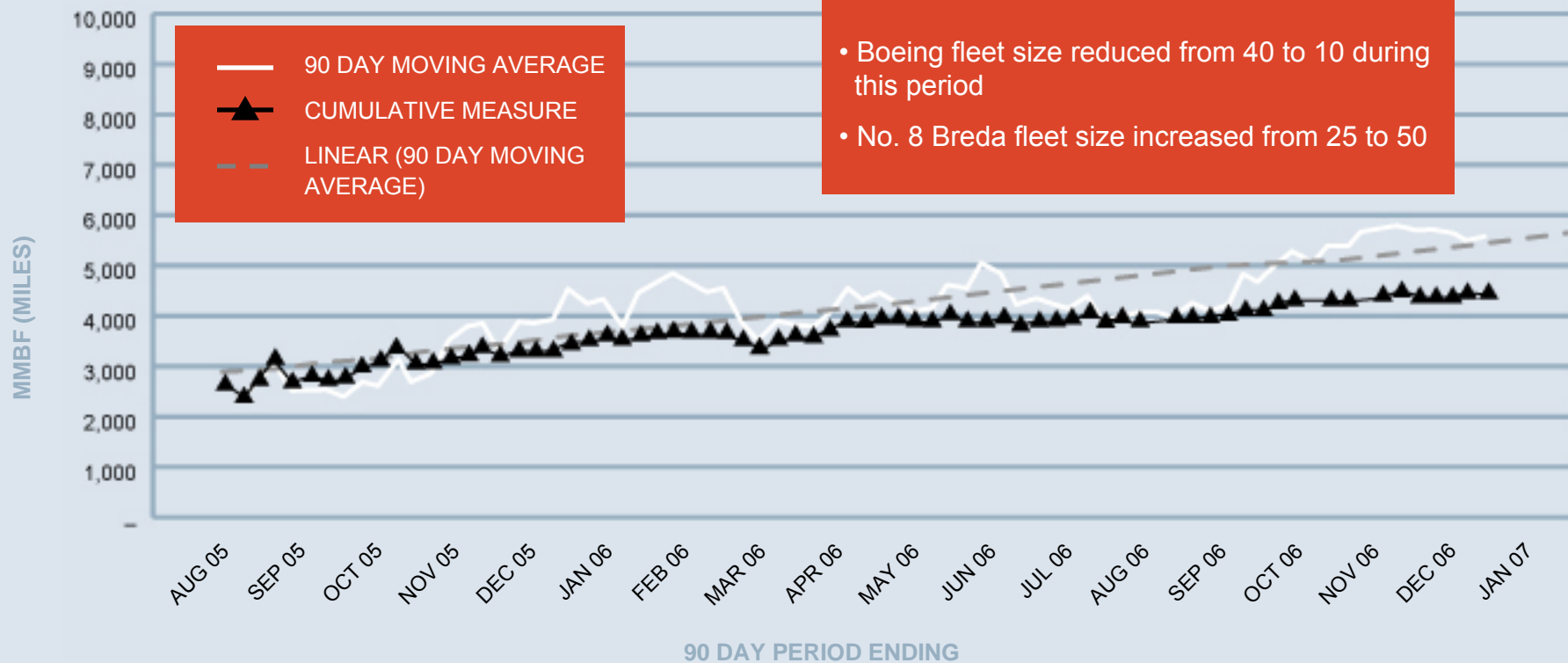
Service Improvements – Green Line

50 No. 8 (Breda) cars operate on all but the D line on an average day





Reliability Improvements – Green Line





Fleet Modernization – Blue Line #5 Car

- Blue Line #5 Car Procurement of 94 cars will increase trains from 4 to 6 cars
- First 2 cars were delivered January 31, 2007
- Cars will be delivered to the Orange Line test track for a 4-month period of extensive dynamic and system testing
- Delivery of remaining cars will commence in the Spring of 2007
- Delivery will continue at the rate of two to three pairs per month
- Current projections indicate that the last pair will be delivered in 2009





Commuter Rail Operating Characteristics

- 80 locomotives
- 410 coaches
- 475 weekday trains
- >3,800,000 annual travel miles
- >22,000,000 annual coach miles





Commuter Rail Fleet

QUANTITY	FLEET	SERVICE DATE
57	Pullman Coaches	1979
67	MBB Coaches	1987-1988
40	Bombardier A Cars	1987
106	Bombardier B Cars	1989-1990
140	Double-Decker Kawasaki Coaches	1990-1991, 1997, 2002, 2005
18	F40PH-2 Locomotives	1978, 1980
25	F40PH-2C Locomotives	1987-1988
12	F40PH-2M Locomotives	1991, 1993
25	GP40-MC Locomotives	1997-1998
490	TOTAL (410 Coaches, 80 Locomotives)	





Bi-Level Coach Overhaul and Procurement

Bi-Level Overhaul and Procurement

Currently retaining engineering services to upgrade, overhaul or replace all major subsystems including interior components to achieve service life. 75 Bi-Level Coaches purchased in 1989 are targeted to go through the program.

Thirty-three (33) new Kawasaki Bi-level coaches with ADA compliant restrooms were delivered between Aug. 2005 and July 2006. These coaches were purchased to expand system capacity and to provide rolling stock for the Greenbush and T. F. Green Airport / Wickford Junction, RI services.

RFP advertised December 26, 2006 for procurement of 75 new bi-level passenger coaches. Delivery expected in 4-5 years (TBD). Will augment existing fleet to facilitate future expansion of service. Allows for the retirement of older single level coaches.





Locomotive Programs

Locomotive Procurement

Initiated the procurement process for up to 38 new diesel-electric locomotives:

- Will augment existing fleet to facilitate future expansion of service and allow for the retirement of older diesel-electric locomotives.
- RFP has been issued. Delivery anticipated in 3-5 years (TBD).



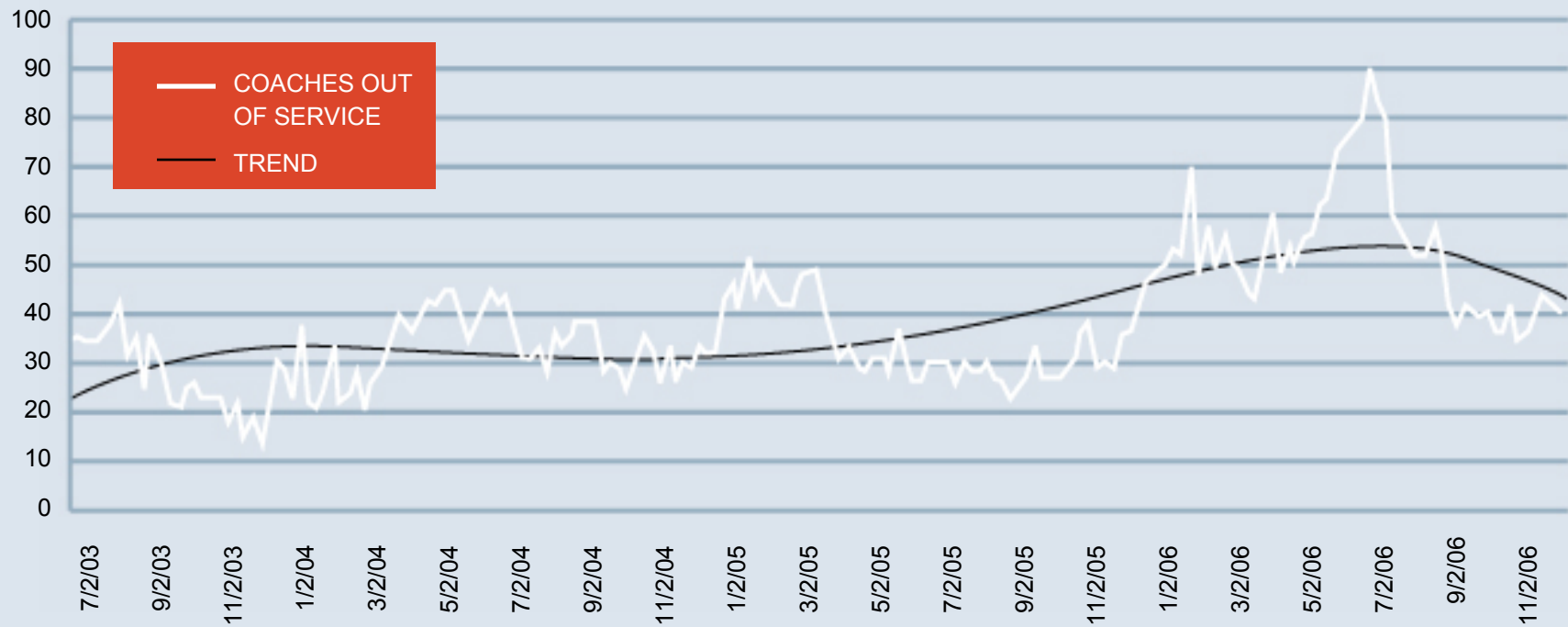
Locomotive Top Deck Overhaul

Rebuild the main propulsion engine on the fleet of 25 locomotives. Major benefits include improved reliability and ability to achieve full service life. Work will commence in July 2007 and be completed in 2 years



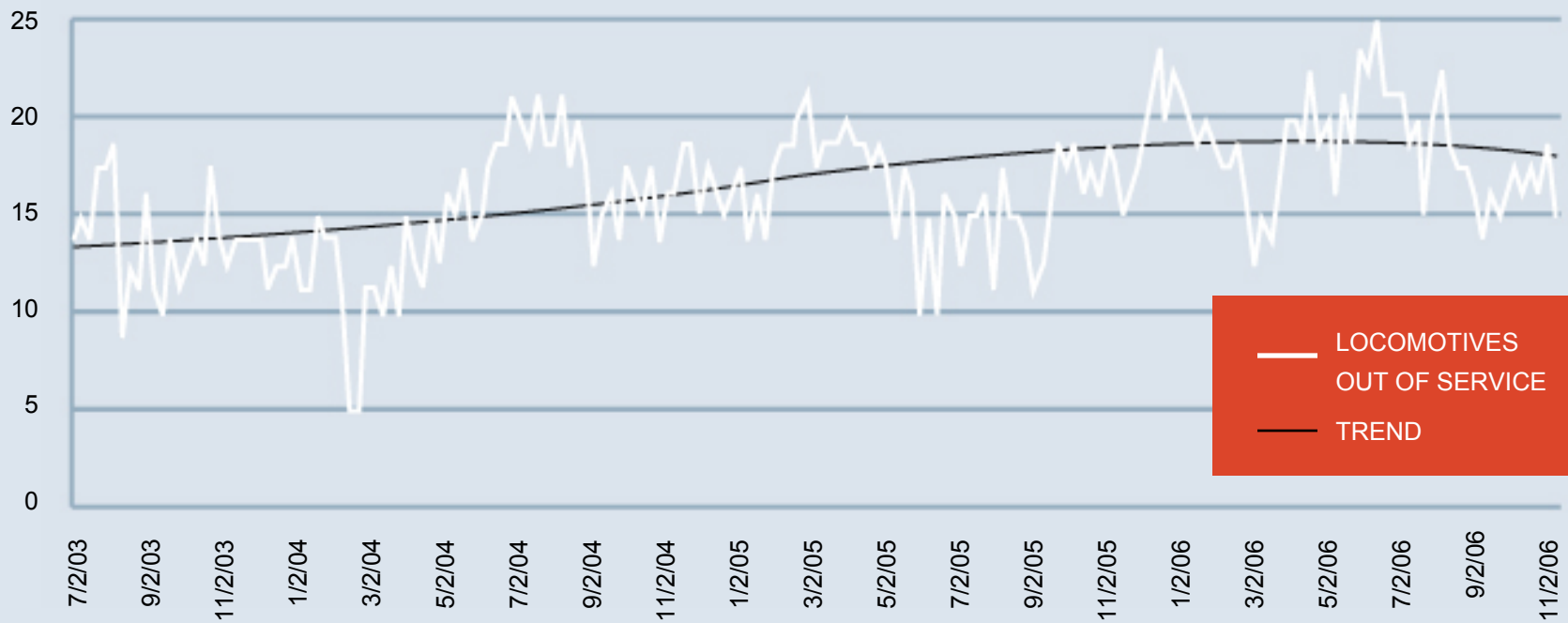


Commuter Rail Coach Availability





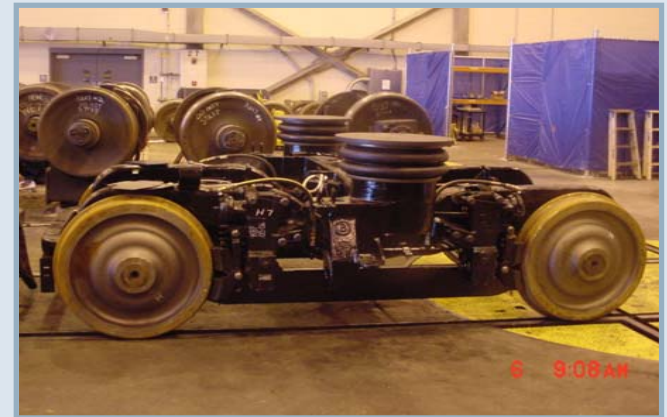
Commuter Rail Locomotive Availability





Coach Reliability and Safety Program (CRASP)

- In July 2005, a \$23.5m project was initiated to repair/replace to “like new” condition, truck assemblies, couplers, HVAC systems and toilet systems on 162 commuter rail coaches (43% of fleet). The program covers:
 - 40 Bombardier A Coaches
 - 55 MBB Coaches with Toilets
 - 67 Bombardier B Coaches
- Work is being performed by the Massachusetts Bay Commuter Railroad Company (MBCR), the contract operator to the MBTA
- This program should maintain the equipment’s useful life with a high level of safety, reliability and customer amenities.
- 24 coaches now complete. Will ramp up to eight coaches/month in April with completion scheduled for November 2008.





Commuter Rail Coach Window Replacement Program

- Railroad Operations and MBCR are progressing with project to replace windows on 162 single-level commuter rail coaches.
- Through cost containment measures, such as changing production materials, reusing some parts, and competitive bidding, the project was expanded to include the entire fleet of 270 single-level coaches.
- Expected completion is 1st quarter FY08.





Water Transportation Operating Characteristics

- 3 privately operated routes
 - Hingham – Boston
 - Quincy & Hull – Boston – Logan Airport
 - Boston – Charlestown Navy Yard
- 2 MBTA-owned docks
- 2 MBTA-owned vessels
- 162 weekday one-way trips





Water Transportation Fleet

MBTA VESSELS*	TYPE	YEAR BUILT
Flying Cloud	Catamaran	1996
Lightning	Catamaran	1996

9 other vessels in service via contract operation by private vendors

*Used primarily for Quincy and Hull – Boston – Logan service





Water Transportation – Reliability Improvements

In early 2007, a capital maintenance overhaul was performed on the two MBTA-owned commuter ferries that service Quincy, Hull, Logan and Boston.

Program included:

- Exterior painting
- New fuel tanks
- New generators
- New water jets
- Deck repairs
- Carpet and upholstery
- New awnings on upper deck





MBTA Program for Mass Transportation

PMT Vision & Goals





MBTA Program for Mass Transportation

2003 PMT Vision Statement

Provide safe, cost-effective, and efficient services that increase ridership and respond to the expanding mobility demands of individuals and communities.

Maintain existing infrastructure in a state of optimal repair to improve quality, convenience, accessibility, and reliability of service.

Transport customers in a system that promotes a desirable quality of life, supports the sustainable development of communities, improves the quality of the environment throughout the Massachusetts Bay region, and distributes benefits and burdens equitably.





MBTA Program for Mass Transportation

2003 PMT Goals

1. Preserve & modernize system and improve accessibility
2. Improve mobility
3. Protect the environment
4. Promote equitable distribution of transit benefits & burdens
5. Support community/economic development





MBTA Program for Mass Transportation

Identifying Mobility Challenges





MBTA Program for Mass Transportation – Timeline





MBTA Program for Mass Transportation – Workshop Schedule

SOUTHEAST CORRIDOR

Tuesday, May 22

6:00–8:00 PM

Thayer Public Library

*798 Washington Street,
Braintree*

NORTHEAST AND NORTH CORRIDORS

Wednesday, June 13

6:00–8:00 PM

Beebe Library

345 Main Street, Wakefield

SOUTHWEST AND URBAN CORE CORRIDORS

Thursday, June 14

5:30–7:30 PM

Dudley Branch Library

65 Warren Street, Roxbury

NORTHWEST CORRIDOR

Tuesday, June 19

6:00–8:00 PM

Cambridge Senior Center

*806 Massachusetts Avenue,
Cambridge*

WEST CORRIDOR

Thursday, June 21

5:30–7:30 PM

Newton City Hall

War Memorial Auditorium
*1000 Commonwealth
Avenue, Newton*

CIRCUMFERENTIAL

Issues may be discussed at
all corridor meetings.





PMT Corridor Map

Identify mobility gaps & challenges MBTA customers will face over the 25-year horizon of the PMT

