



**Massachusetts Bay  
Transportation Authority**

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# **Innovation Proposals**

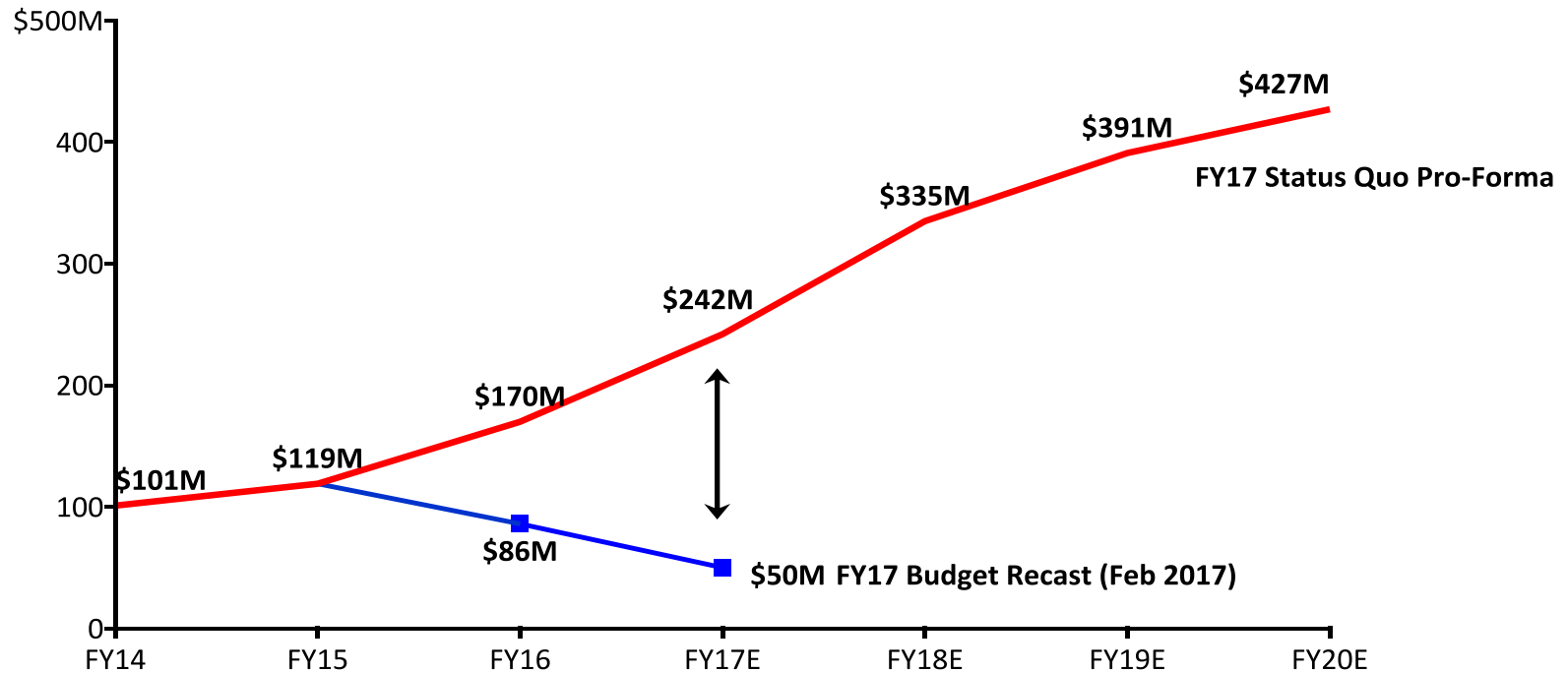
**Bus Maintenance**

**March 2017**



## FY17 Budget Recast: Operating deficit reduced to \$50M through tough choices

Structural deficit



Source: MBTA management in process of recasting FY18-FY20.  
Operating Deficit does not include additional state assistance of \$155M in FY16 or \$187M FY17 (forecast)



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## Putting MBTA on path to fiscal sustainability

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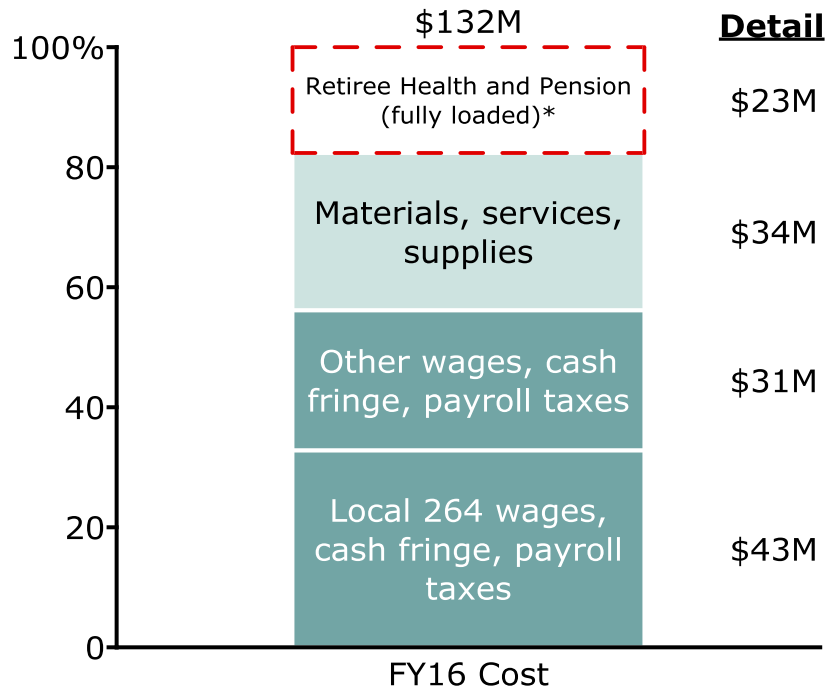
### **Management/FMCB Actions: August 2015 – February 2017**

- ✓ Contracted-out cash handling and warehouse / logistics operations
- ✓ Streamlined corporate/admin headcount through first work-force action since 1991
- ✓ Raised system-wide fares by 9.3% and rebid parking/advertising contracts
- ✓ Re-negotiated L589 Carmen's Union contract to reduce wage expense / drive productivity
- ✓ Revamped and enforced overtime policies, hired TPA to manage FMLA/ADA
- ✓ Launched first-in-nation Uber/Lyft pilot for RIDE customers, consolidated dispatch ops
- ✓ Ended late night service pilot due to declining ridership and high subsidy per trip
- ✓ Locked in long-term electricity and hedged other commodity exposure
- ✓ Refinanced and restructured all available long-term debt thru competitive process
- ✓ GLX reset: \$600M in value engineering savings identified; new project leadership in place



## MBTA's bus maintenance costs were \$132M in FY 2016

### MBTA Bus Maintenance Costs (FY16)



#### Detail

\$23M

- MBTA's FY16 fully loaded bus maintenance costs were \$132M, excluding fuel

\$34M

- Labor costs comprised \$97M (74%) of total costs

\$31M

- Materials, services, and supplies comprised \$34M (26%) of total costs

\$43M

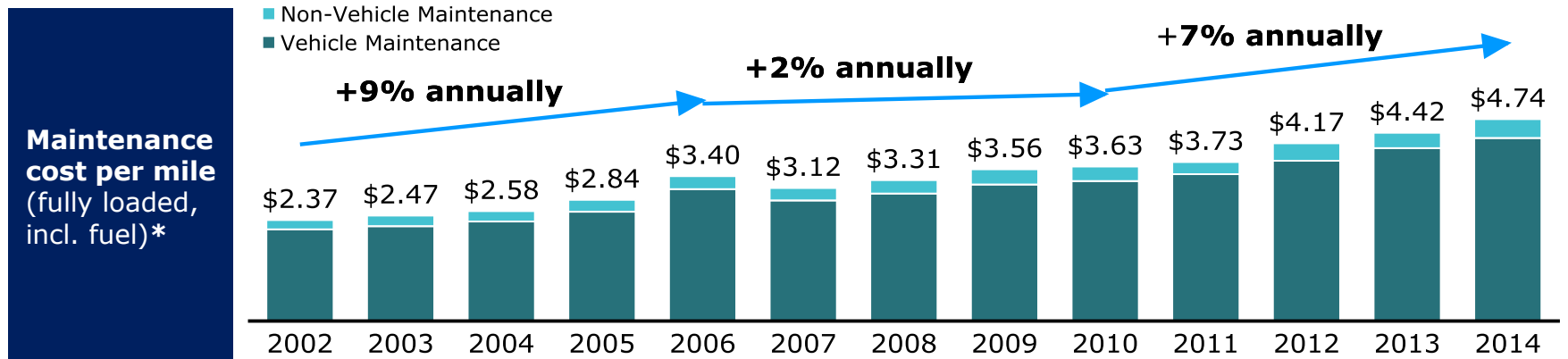
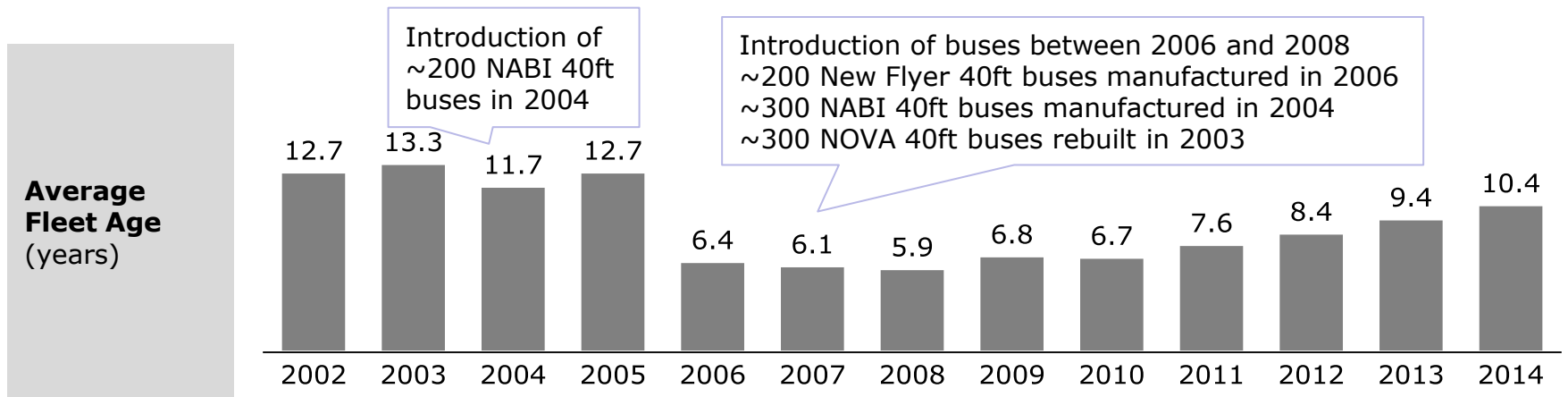
- Total annual maintenance cost per bus is \$126,000

\*Actuarially derived pension fund liability calculations use a 7.75% discount rate. However, average historical pension fund returns have underachieved, increasing MBTA's pension contribution and unfunded liability over time. Given current low return environment and pension profile, a 5.0% discount rate more fully reflects MBTA's expected costs; also includes present value of retiree health costs if fully funded  
Note: MBTA FY16 costs include Everett Bus Shop and exclude Non-Revenue Shops and fuel costs

Source: MBTA Internal Data



## MBTA bus maintenance costs continue to rise, independent of fleet age

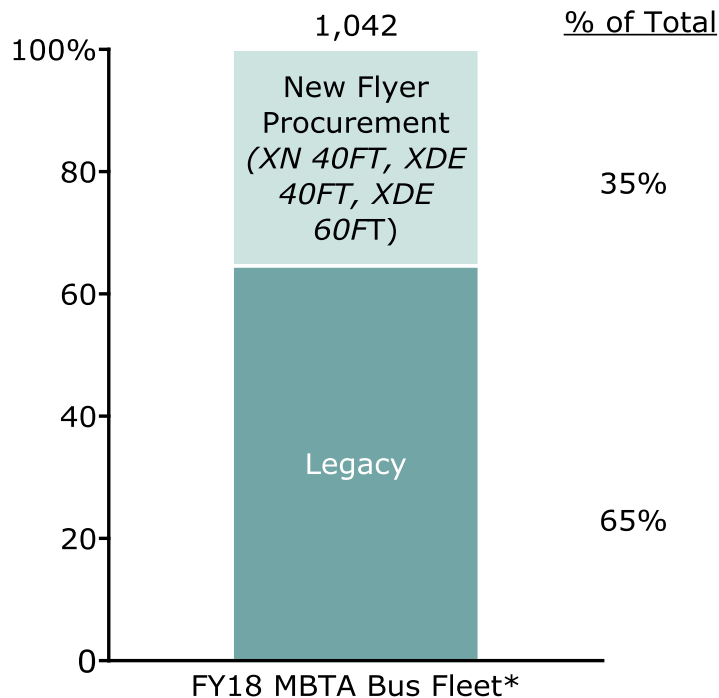


\*Division of growth periods allows for 2 years' lag in the potential impact of new buses on maintenance cost per mile; Fully loaded maintenance cost per mile including total labor and fringe bill  
 Source: National Transit Database



## And in FY18, 35% of the MBTA bus fleet will be brand new and under warranty

MBTA Bus Fleet



New Flyer Xcelsior XDE40 FT bus

- *With 369 brand new buses under warranty in FY18, what should be the impact on direct labor, required staffing and overall direct maintenance costs?*
- *What is the private sector lifecycle annual maintenance cost for a brand new 40ft New Flyer?*

\*Assumes MBTA will retain half of existing NOVA contingency fleet at Charlestown  
Source: MBTA Internal Data



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## Independent Assessments: Potential to save tens of millions of dollars annually in bus maintenance costs

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Several reviews have concluded that high MBTA costs should be addressed:

### **REPORT:**

**TransPro Assessment**  
(Feb 2017)

**FY18 Focus – Transportation  
and Maintenance**  
(Feb 2017)

**Bus Maintenance Overview –  
FMCB Presentation**  
(Nov 2015)

### **CONCLUSIONS:**

*"This assessment **identified 30-40% in potential annual savings across bus maintenance.** Achieving savings of this magnitude is a top priority."*

*"Opportunity [in bus maintenance] could be up to 30-40% annually. **We recommend releasing an RFI to test the market.**"*

*"On a \$/mile basis, **the MBTA costs 3.2x more to operate than the outsourced US system average . . . MA-based RTAs are slightly outperforming the national average for cost efficiency.**"*



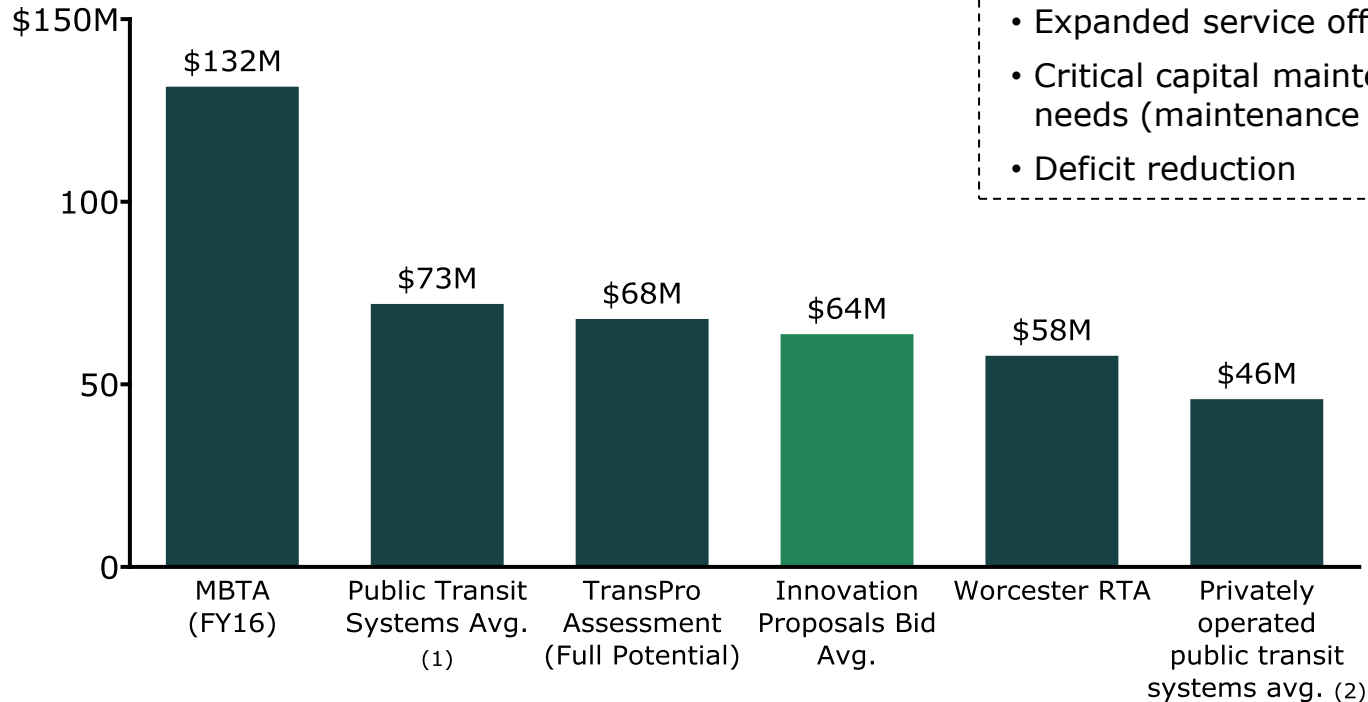
## Industry data suggest that MBTA could save tens of millions of dollars annually by partnering with a third party for bus maintenance

Bus Maintenance Total Cost  
(Cost per Rev. Hr x Total Rev Hrs)

FY16 = 2.34M revenue hrs

**Savings could be reinvested in:**

- Expanded service offerings
- Critical capital maintenance needs (maintenance lockbox)
- Deficit reduction



**Maintenance Cost per Revenue Hr**

\$56/hr

\$31/hr

\$29/hr

\$27/hr

\$25/hr

\$20/hr

1 includes 71 public transit systems with more than 100 buses and avg. fleet age of 9+ years

2 includes 17 privately operated public transit systems with more than 100 buses

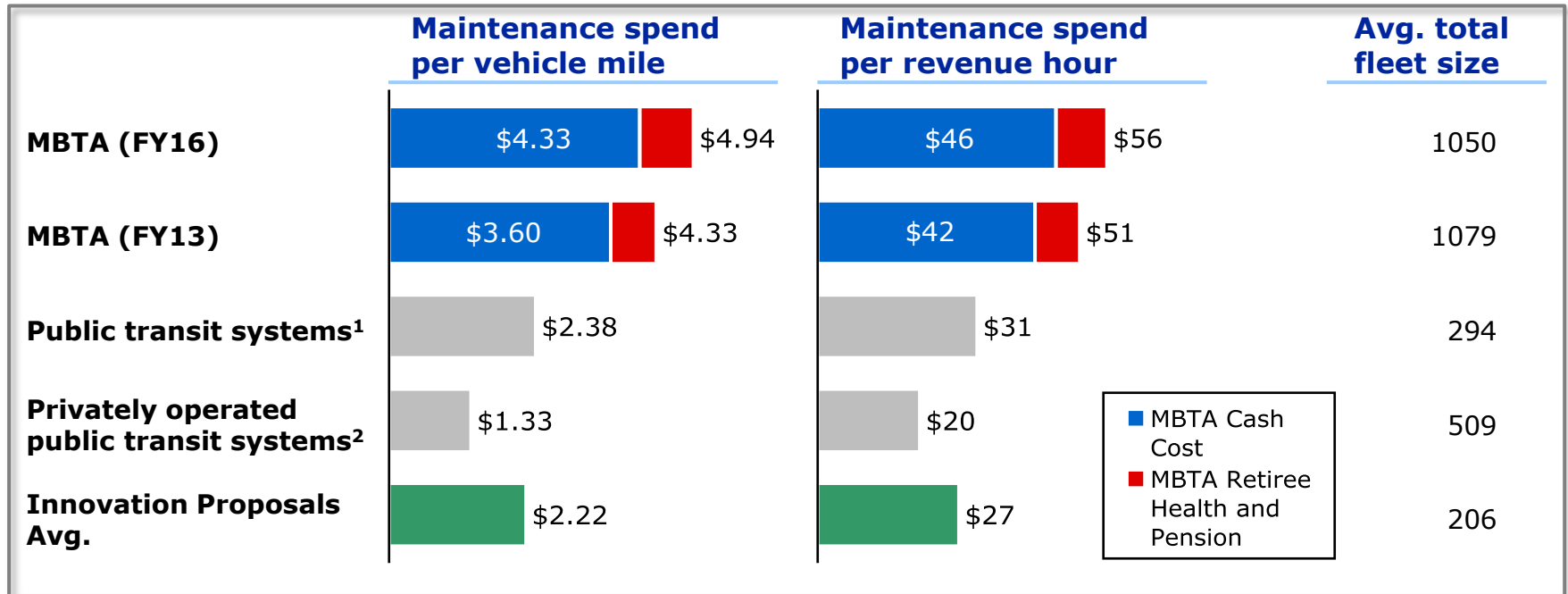
Source: MBTA Internal Data; 2015 National Transit Database tables; TransPro

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## Innovation proposals are consistent with industry standards for privately operated public transit systems



1 Includes 71 public transit systems with more than 100 buses and a fleet age of 9+ years

2 Privately operated public transit systems with a fleet of over 100 buses

Note: NTD data for public transit systems and privately operated systems reflect CY 2015 costs, miles, and hours

Source: MBTA Internal Data; Company Proposals; 2015 NTD Database Tables



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## Flexible Contracting – Bus Maintenance

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### **Partnering with private industry for all or part of MBTA’s bus maintenance and management would offer several advantages:**

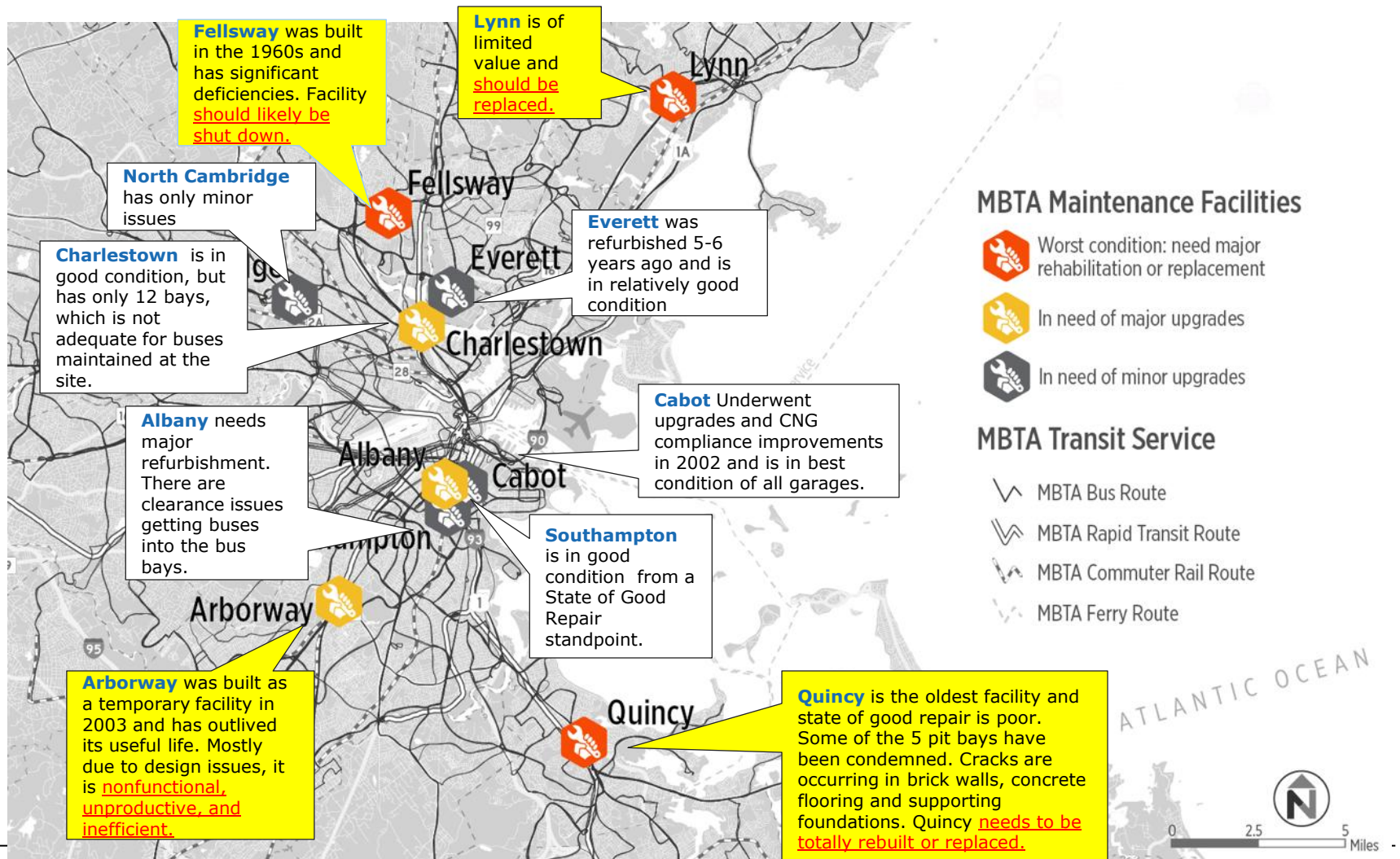
- > Lower operating costs and improved productivity
- > More flexible service delivery
- > Shift to Regional Transit Authority (RTA) model already proven in Massachusetts

### **Smaller bus garages (Arborway, Quincy, Fellsway, and Lynn) could be platforms for innovation, expansion service, and new facilities**

- > Bus leasing (as opposed to ownership)
- > Variable fleet sizes and bus models
- > Best-in-class technology (paperless shops)
- > Third party-provisioned new expansion service, while preserving core MBTA service
- > Path to replace 4 garages identified by MassDOT’s “Focus40” report (2015) as being in need of complete rebuild or replacement
  - > Leverage private partnership to build more quickly and less expensively



## MassDOT's "Focus 40" report identified 4 bus garages as in need of complete rebuild or replacement (Arborway, Quincy, Fellsway, Lynn)



Source: MBTA 2014 Blue Book and "MBTA Maintenance Facility Analysis: Walk Around Document," December 2014, and MBTA document "Evaluation/Condition Assessment of MBTA Bus Maintenance Facilities," recent but undated.



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## We invited the leading players in the industry to tour our facilities and propose ideas

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### Public discussion of challenges resulted in interest from transportation industry

- Industry recommendation would be to move some or all MBTA garages to **Regional Transit Authority (RTA) model** currently used across the Commonwealth
- This would be a hybrid model where **MBTA (L589) bus drivers** operate vehicles and private company performs garage management and maintenance



### Benefits of potential partnerships include:

- ✓ Management best practices and technology (paperless garages)
- ✓ Greater maintenance efficiency and key performance indicator (KPI) tracking
- ✓ Ability to offer innovative services including late-night and smaller bus models
- ✓ Third-party capital investment in current or new facilities





**All 3 companies have extensive experience running large-scale bus operations in the U.S. and the Northeast, and deliver maintenance with union labor**



**Employees**

20,000

120,000 globally  
(incl. sister companies)

18,000  
in North America

**Experience**

- More than 200 contracts and more than 10,000 vehicles in 30 U.S. States & Canada
- 242 contracts and over 11,200 transit vehicles in US
- Sister companies: First Student, Greyhound, UK Bus
- 200 contracts in North America and 400 million passengers per year

**Notable Public Contracts**

- Cape Cod RTA
- Los Angeles Metro
- RTC (Las Vegas)
- OCTA (Orange County)
- MARTA (Atlanta)
- 6 Massachusetts RTAs (Worcester, Merrimack Valley, Pioneer Valley, etc.)
- CT Transit (Connecticut)
- WMATA (D.C. Circulator)
- Denver RTD
- City of Boston (bus maintenance/ops.)
- Denver RTD
- Prince George’s County, MD
- Los Angeles Metro
- King Country Metro (Seattle)

**Sample Union Affiliations**



ATU



TEAMSTERS



IAM



ATU



IAM



TWU



ATU



IBEW



TWU

Source: Company Websites; Company Proposals

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## Regional Transit Authority (RTA) Model: Private contractors currently operate 15 RTA's across Massachusetts

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### Scope of Services with Contractor

- All bus transportation and maintenance services **provided by private contractor** that reports to RTA administrator and board

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### Asset Ownership

- **RTAs typically provide vehicles** due to lower cost of capital and to retain ownership
- Contractors typically **operate within RTA-owned facilities**

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### Routes / Service Planning

- RTAs **maintain discretion over service planning and routes**

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### Contract Terms and Oversight

- **Service level agreements (SLAs)** and performance standards typically put in place
- Contract length typically **3-5 years or more**

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### Labor Practices

- Most private contractors employ **union workforces** with non-union management
- **Lower overall headcount** due to increased productivity and lower absenteeism



*Exterior of new Worcester RTA facility*



*Interior of new Worcester RTA garage*

Source: Worcester RTA

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## Massachusetts' RTA's are required by law to contract with third party providers

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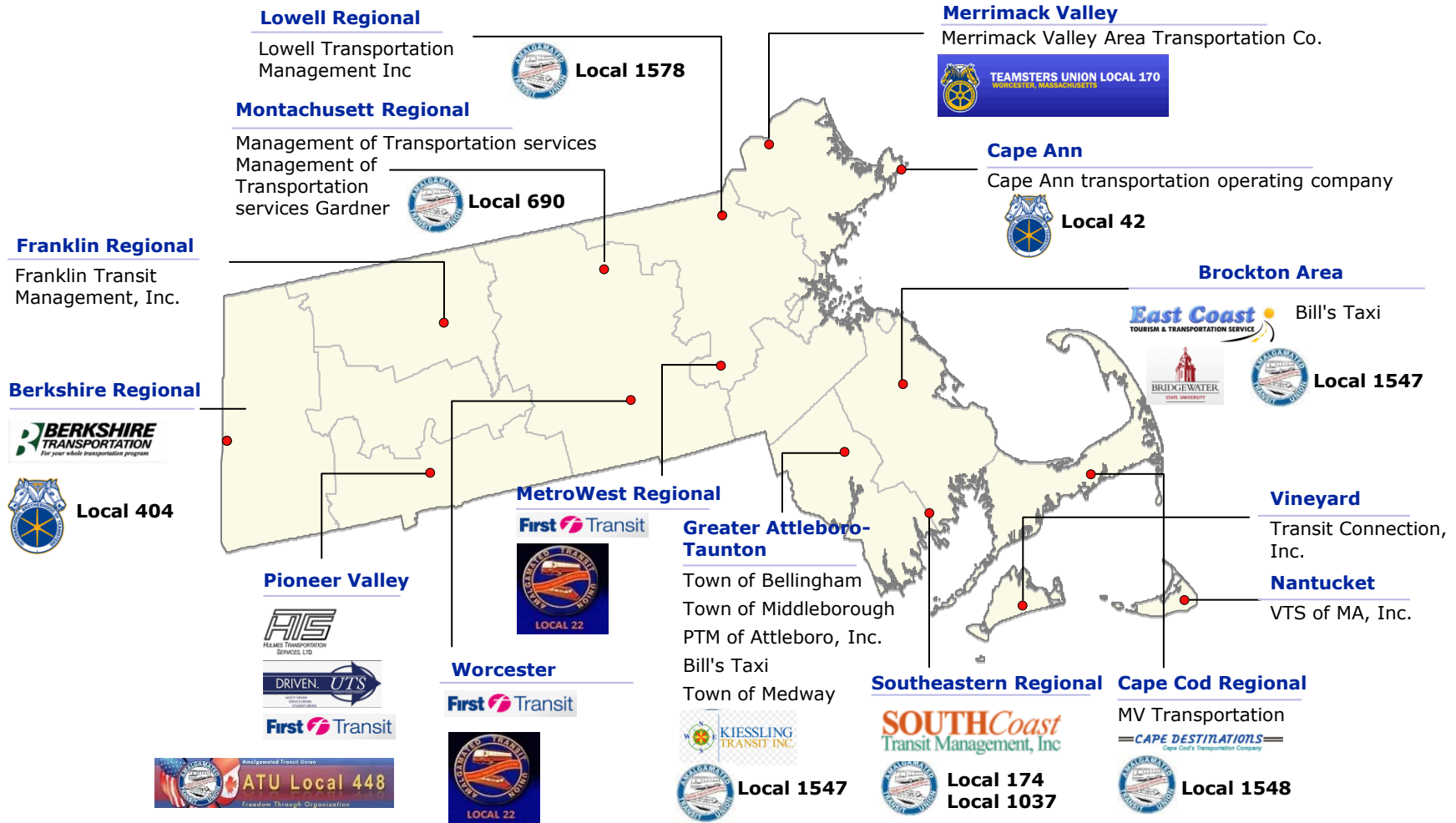
- Municipalities are not permitted by law to provision transportation services with government employees
- Required to run a competitive bidding processes to select third party provider
- Capture best value from a mature market with many established industry participants
- RTA models allow for both union and non-union workforce
- Competitive process and partnership with third parties has helped control cost over time

**CHAPTER 161B  
(MASSACHUSETTS GENERAL LAWS):**

*"The authority shall have the duty to **develop, finance and contract for the operation** of mass transportation facilities and equipment in the public interest consistent with the purposes and provisions of this chapter, and to achieve maximum effectiveness in complementing other forms of transportation in order to promote the general economic and social well-being of the area and of the commonwealth"*



# Massachusetts RTA Model: Non-Union Management / Union Mechanics



Source: 2015 NTD contractor database; all MA RTAs reporting to NTD are included

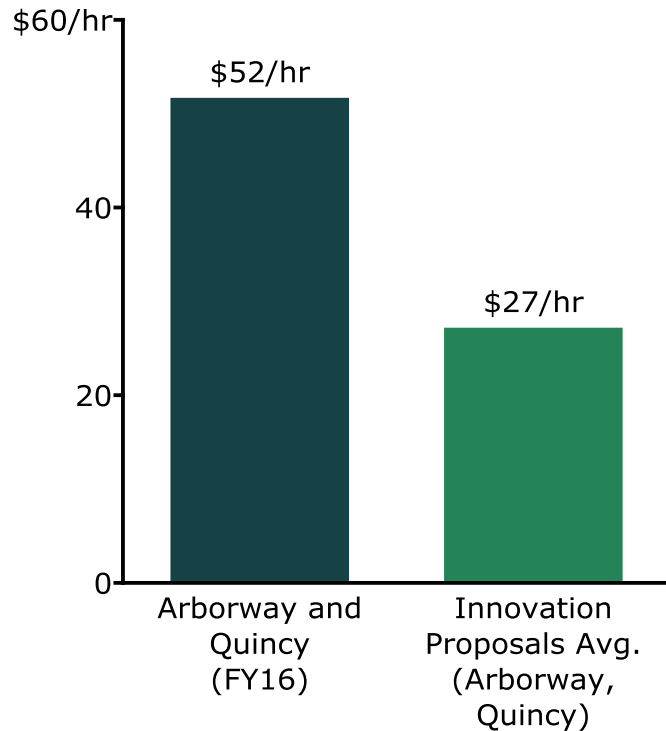
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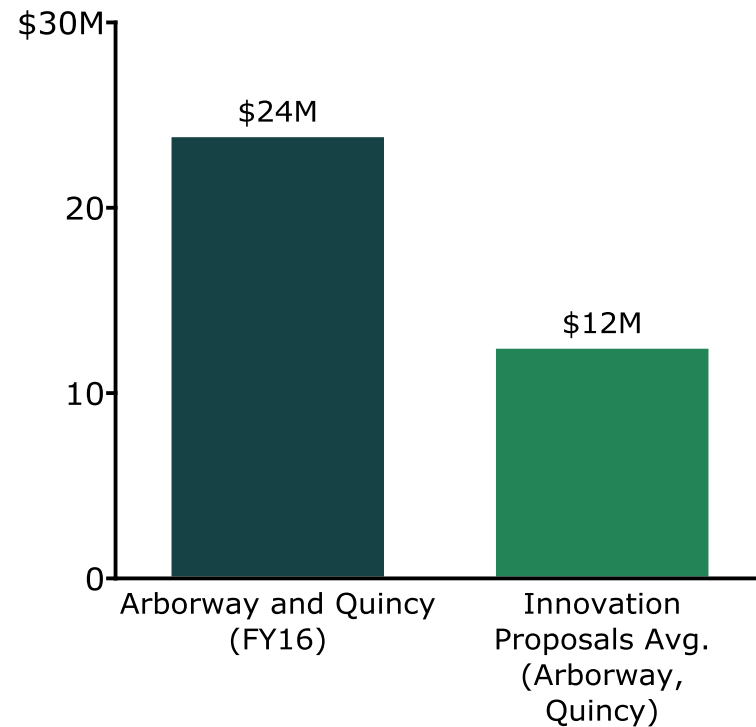
## South Side Opportunity: MBTA could save \$12M across Arborway and Quincy garages

Bus Maintenance Cost  
per Revenue Hour



Bus Maintenance Total Cost

FY16 = 456K revenue hrs



Note: MBTA FY16 costs include present value of fully funded pension and retiree health costs, include Everett Bus Shop, and exclude Non-Revenue Shops and fuel costs; Everett Bus Shop costs allocated to individual garages based upon proportion of total annual vehicle hours  
Source: MBTA Internal Data; Company Proposals



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## Through partnership with industry, Focus40 garages would be future platform for innovation, expansion service and new facilities

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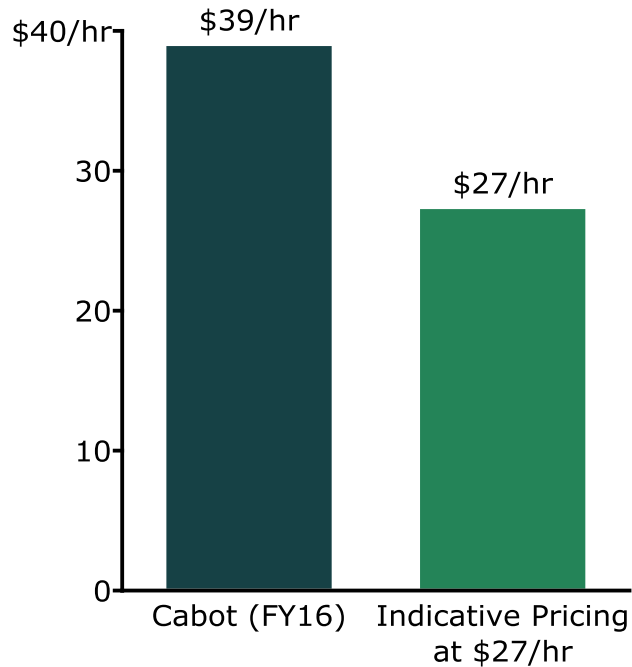
New bus maintenance model with a third party provider that incorporates best practices would allow for:

- ✓ Platform for experimenting with **bus leasing** as opposed to ownership model
- ✓ Flexibility to **vary fleet sizes and bus models** based on evolving demand
- ✓ Utilize **best-in-class technology** to optimize routes and measure efficiency
- ✓ Third party provisioned **new expansion service** while preserving core MBTA service
- ✓ Potential for third-party capital investment in **new bus facilities**
- ✓ Leverage the **Regional Transit Authority model** which is proven in MA



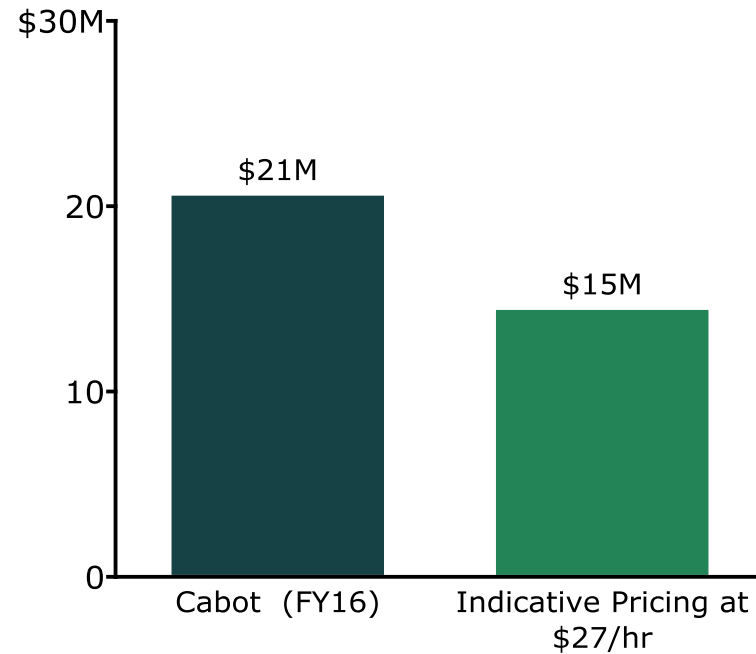
## Cabot garage also represents a large savings opportunity 205 brand-new buses (under warranty) in FY18

Bus Maintenance Cost  
per Revenue Hour



Bus Maintenance Total Cost

FY16 = 529K revenue hrs

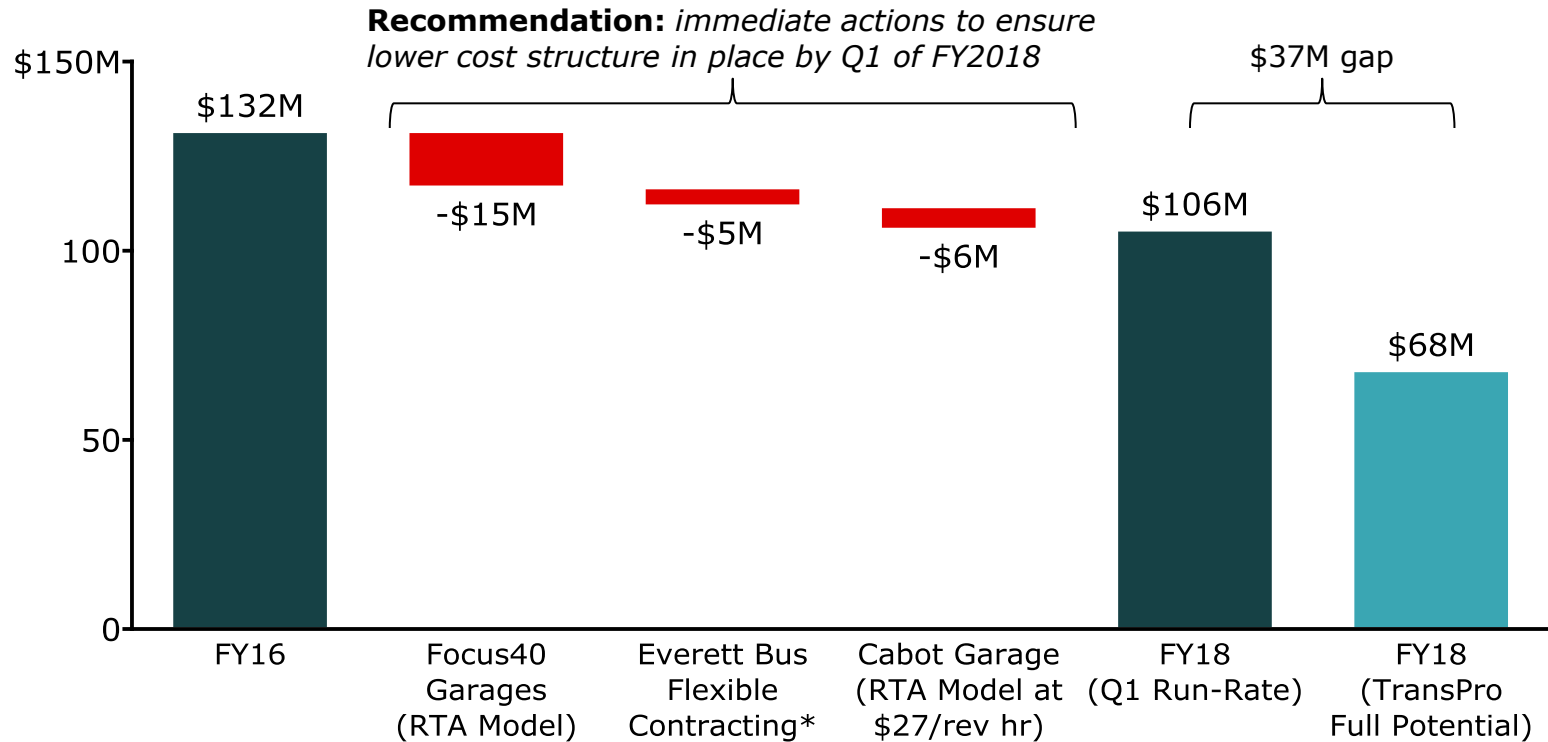


Note: MBTA FY16 costs include present value of fully funded pension and retiree health costs, include Everett Bus Shop, and exclude Non-Revenue Shops and fuel costs; Everett Bus Shop costs allocated to individual garages based upon proportion of total annual vehicle hours  
Source: MBTA Internal Data; Company Proposals



## Bus Maintenance Savings Strategy: Flexible contract initiatives could reduce bus maintenance costs by \$26M by FY2018

### Bus Maintenance Savings Strategy



\*TransPro analysis of savings from flexible contracting initiatives for heavy maintenance  
Note: MBTA costs include Everett Bus Shop and exclude Non-Revenue Shops and fuel costs  
Source: MBTA Internal Data



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## Next Steps

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- Release RFPs for bus maintenance services
- Continue dialogue with the machinist and management unions (foreman, supervisors, superintendents) on ideas and strategies to match private sector bus maintenance productivity