



**Massachusetts Bay
Transportation Authority**

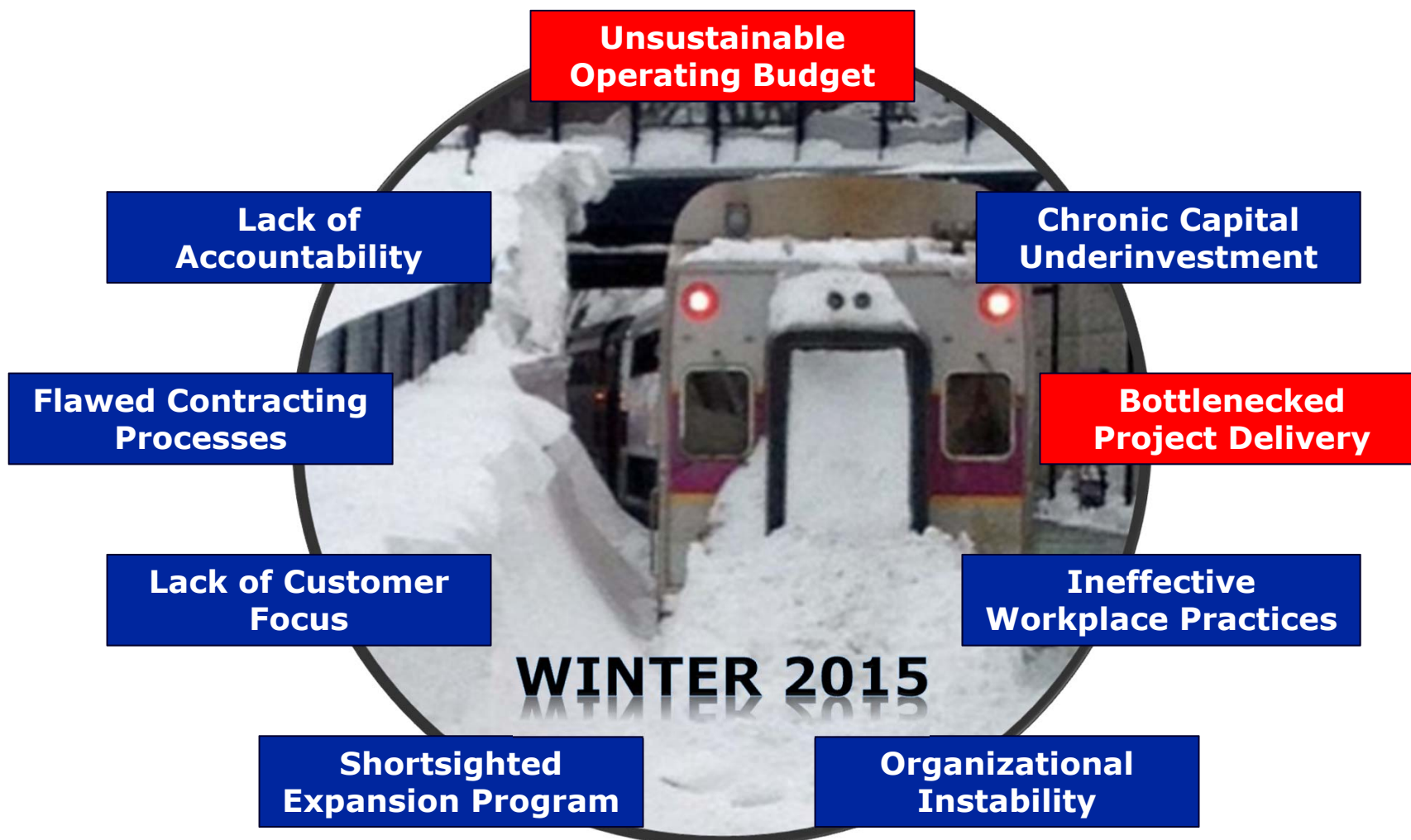
Getting The MBTA Back On Track

FMCB

June 2017



Governor's Special Panel On MBTA – April 2015 Findings



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Winter resiliency



Winter Storm NIKO (Feb 9): New Gas Heating System for 50+ Priority Rails Kept Switches Functioning

Old Electric Heating



- Older electric heaters take longer to heat up and allow snow and ice to accumulate

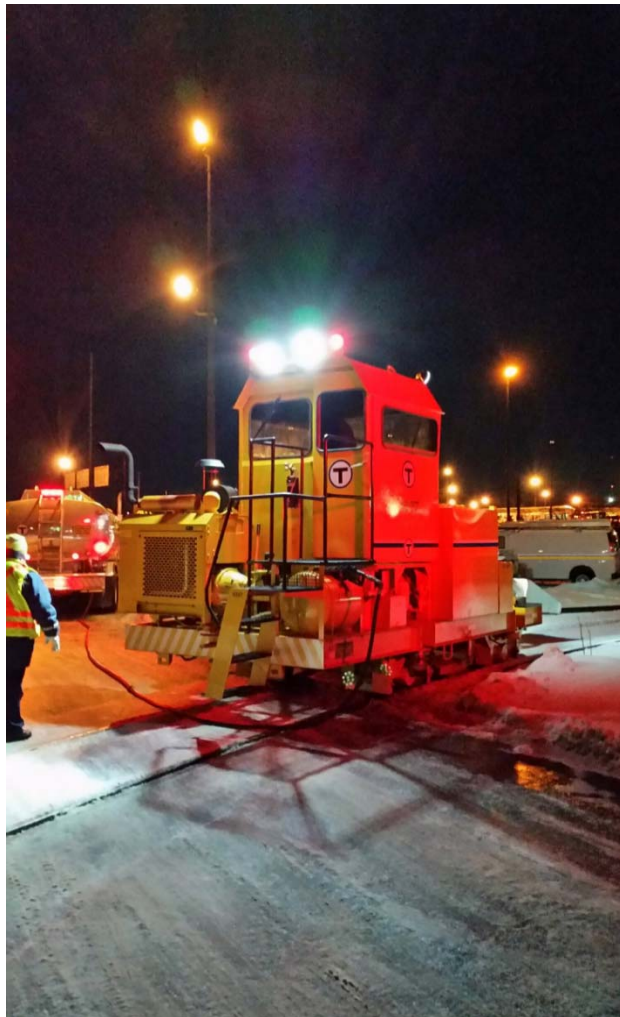
New Gas Heating



- New gas heaters blow warm air continuously keeping switches clear



Winter Storm NIKO (Feb 9): Snow Fighting Equipment (Snowzillas) Running on Red and Orange Line





Winter Storm STELLA (March 14): MassDOT and MBTA represented at MEMA bunker during winter events



- During storms / special events, **MEMA State EOC** is activated with state agency liaisons and utilities
- **MassDOT and MBTA** are represented “Emergency Support Function (**ESF**) **1** - Transportation”
- During Winter Storm STELLA, National Grid power outage disabled Orange Line signals from Malden to Assembly
- ESF1 desk worked with National Grid to prioritize impact circuits and **restored power in less than 1 hour** (from original estimate of 9 hours)



MEMA

nationalgrid

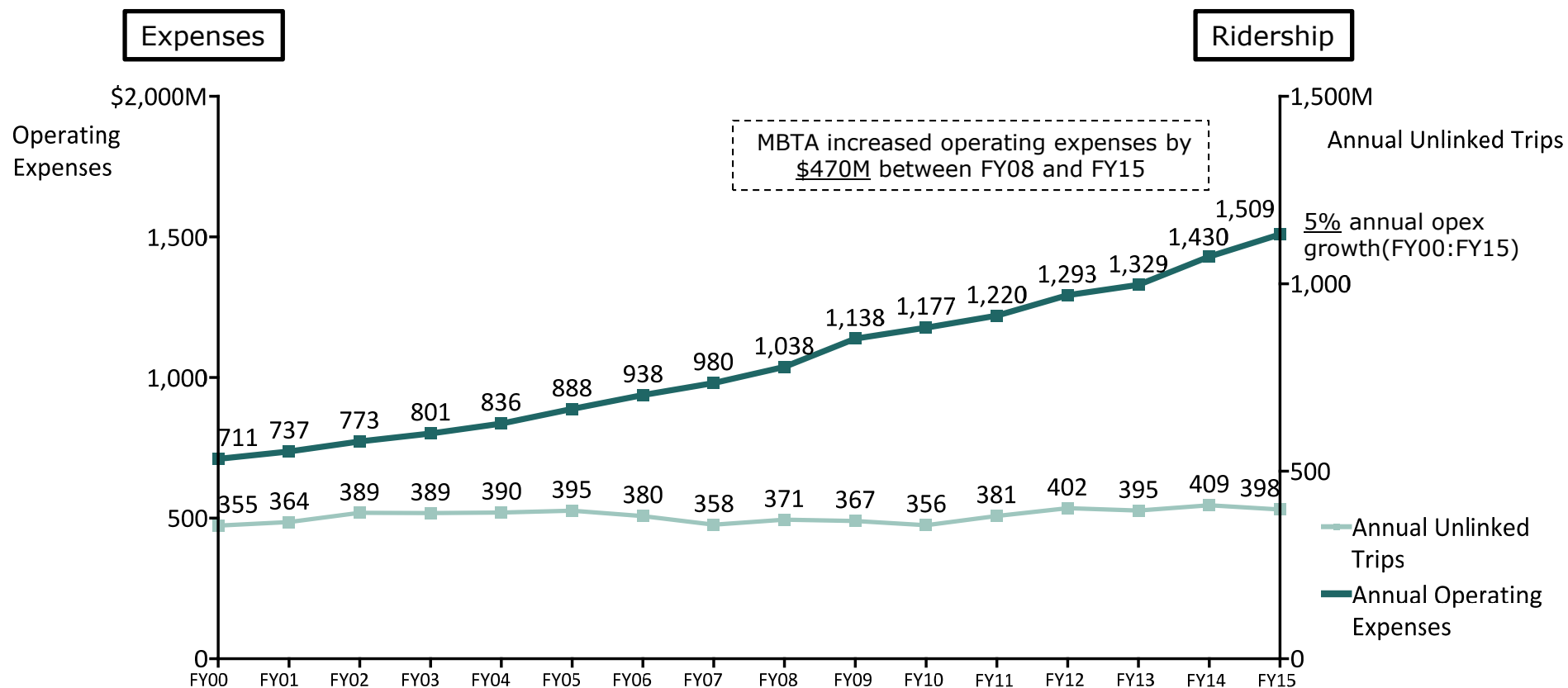
EVERSOURCE



Operating budget stability



The fiscal challenge: Operating expenses not controlled



Unlinked Trips Growth Rate	2.7%	6.8%	-0.1%	0.3%	1.3%	-3.7%	-6.0%	3.7%	-0.9%	-3.0%	6.9%	5.5%	-1.6%	3.5%	-2.7%
Opex Growth Rate	3.7%	4.9%	3.6%	4.4%	6.2%	5.6%	4.6%	5.8%	9.7%	3.4%	3.7%	6.0%	2.8%	7.6%	5.5%

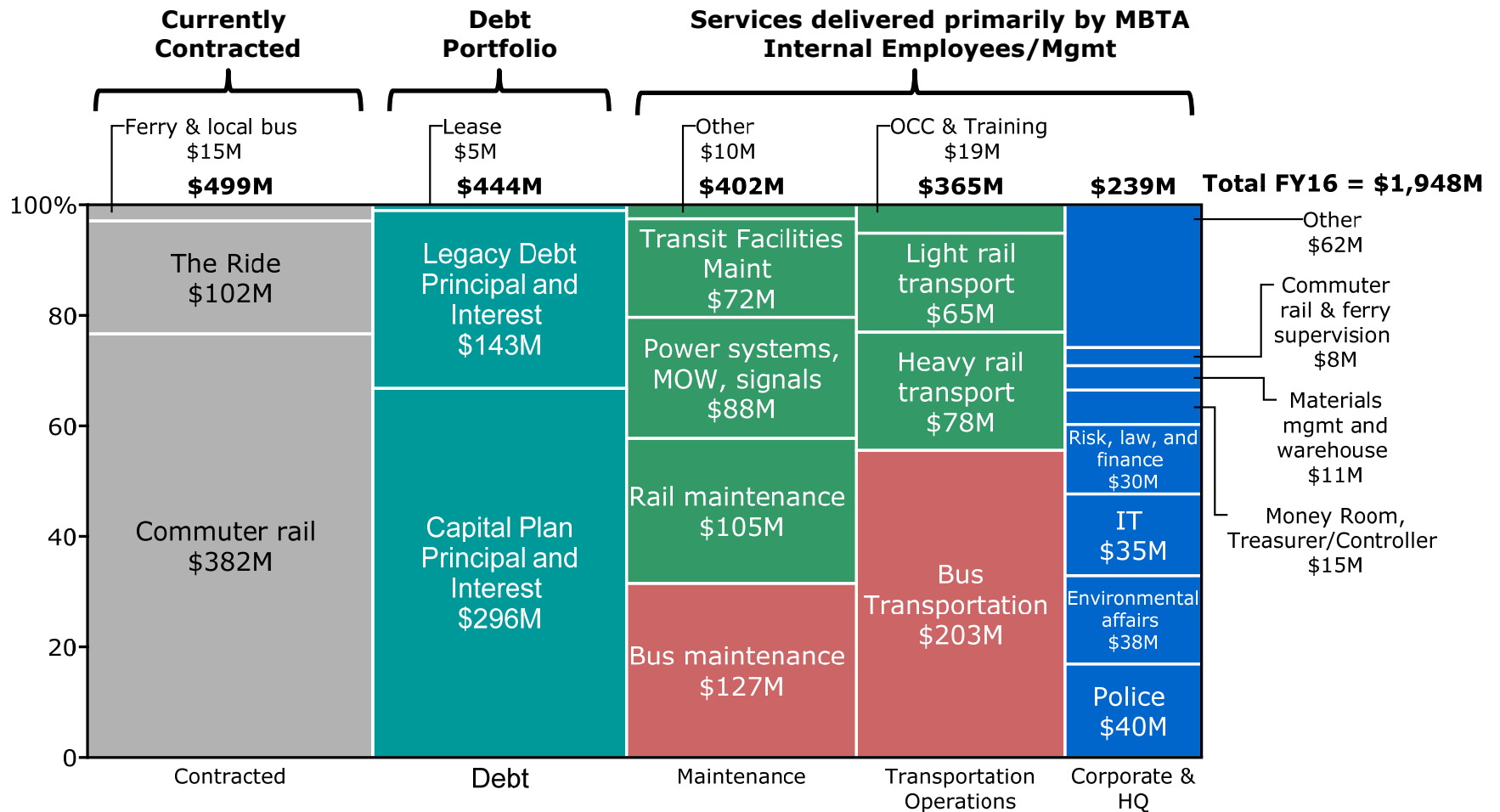
NOTE: FY14 and FY15 unlinked trip are internal MBTA figures and subject to revision. FY15 ridership figure was revised from 385M to 398M in NTD submission April 2017
 Details on MBTA OPMI / NTD methodology are available at: <http://www.mbtatabackontrack.com/blog/65-ntd-ridership>

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MBTA operating and debt service expenses

\$2B annual



*Includes allocated cost of Everett: Bus (\$19.6M) and Subway (\$32.2M)

Note: Includes allocation of fringe

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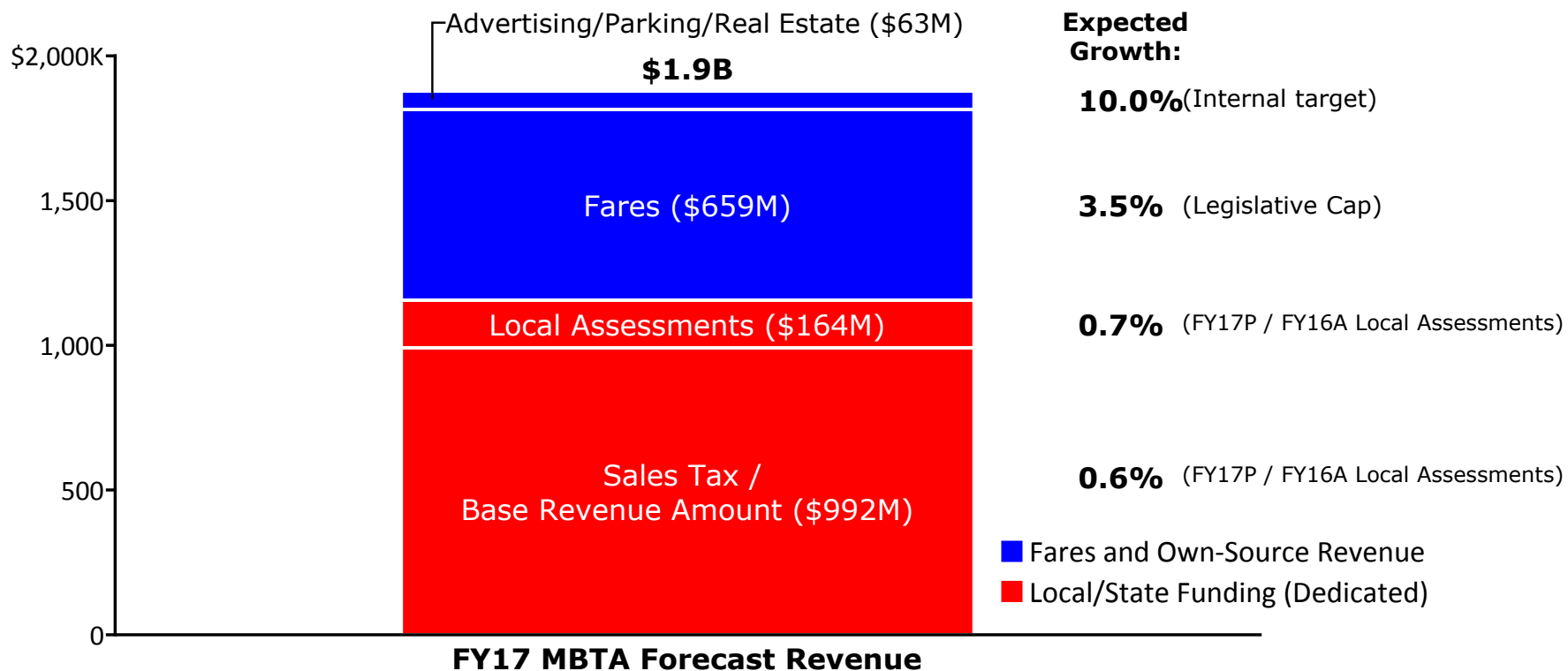


MBTA dedicated revenues

Forward Funding goal: Cover expenses w/ dedicated revenues

MBTA Dedicated and Own-Source Revenues (FY17)

Overall MBTA Rev Growth:
<2%



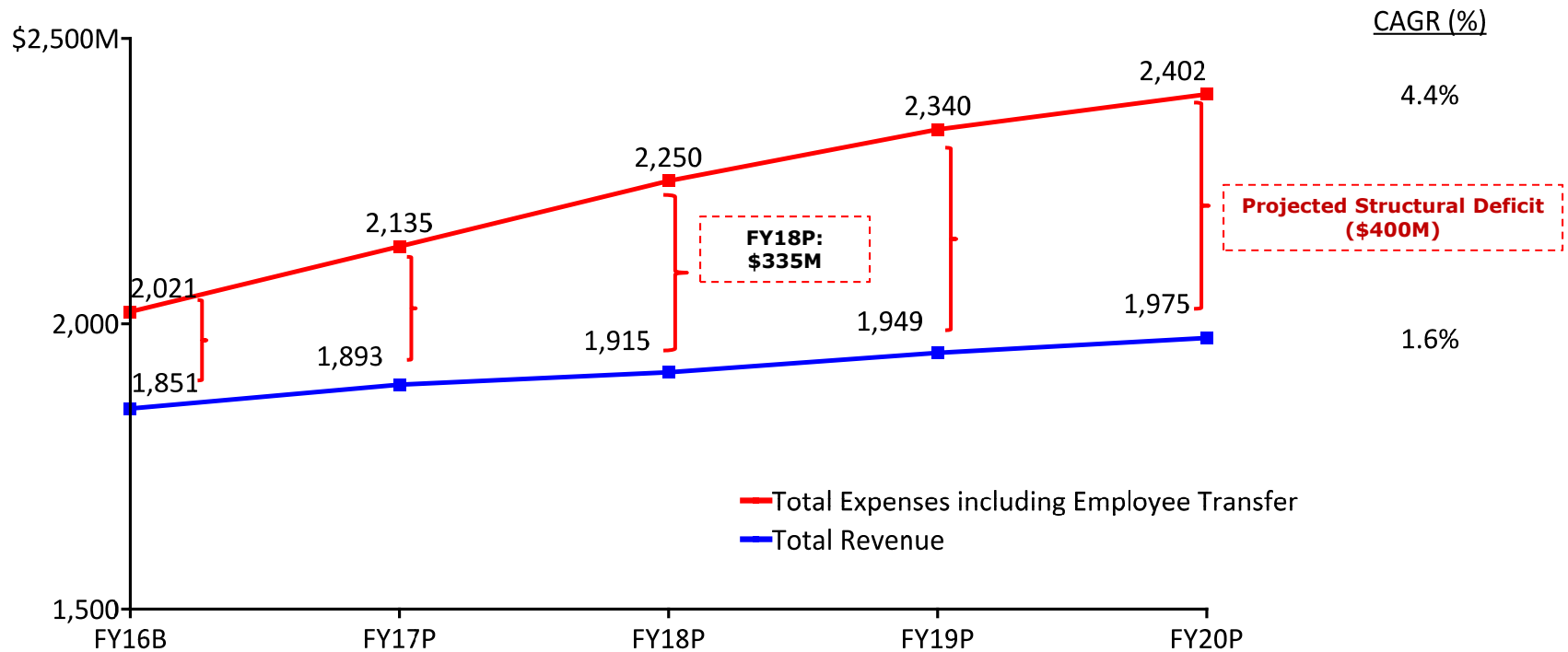
Note: Projected growth rate assumes 10% growth for own-source revenue, 3.5% annual fare revenue growth based on statutory limits, and 0.6% growth for local assessments and sales tax revenue amount based on FY16 base revenue amount calculation.

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With expenses growing 3x faster than dedicated revenues, operating deficit was forecast to reach \$400M by FY20

STATUS QUO FY17:20 PRO FORMA
August 2015



Structural Deficit **-\$170M**
Includes Debt Service

-\$242M

-\$335M

-\$391M

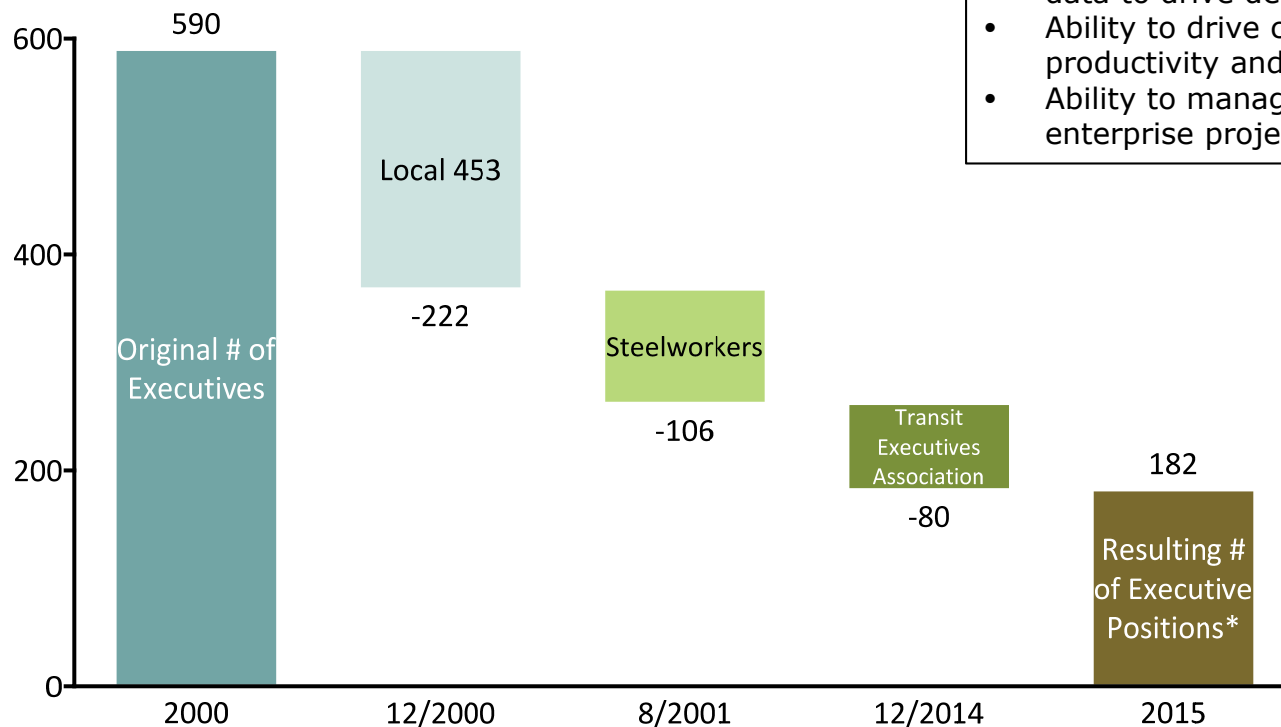
-\$427M

Note: Structural deficit includes debt service and transferred capital employees annual expense, does not include Additional Assistance

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Lack of focus on cost-control / productivity metrics: MBTA executive management strength diminished past 15 yrs



Executive skills required to drive change in a \$2B enterprise:

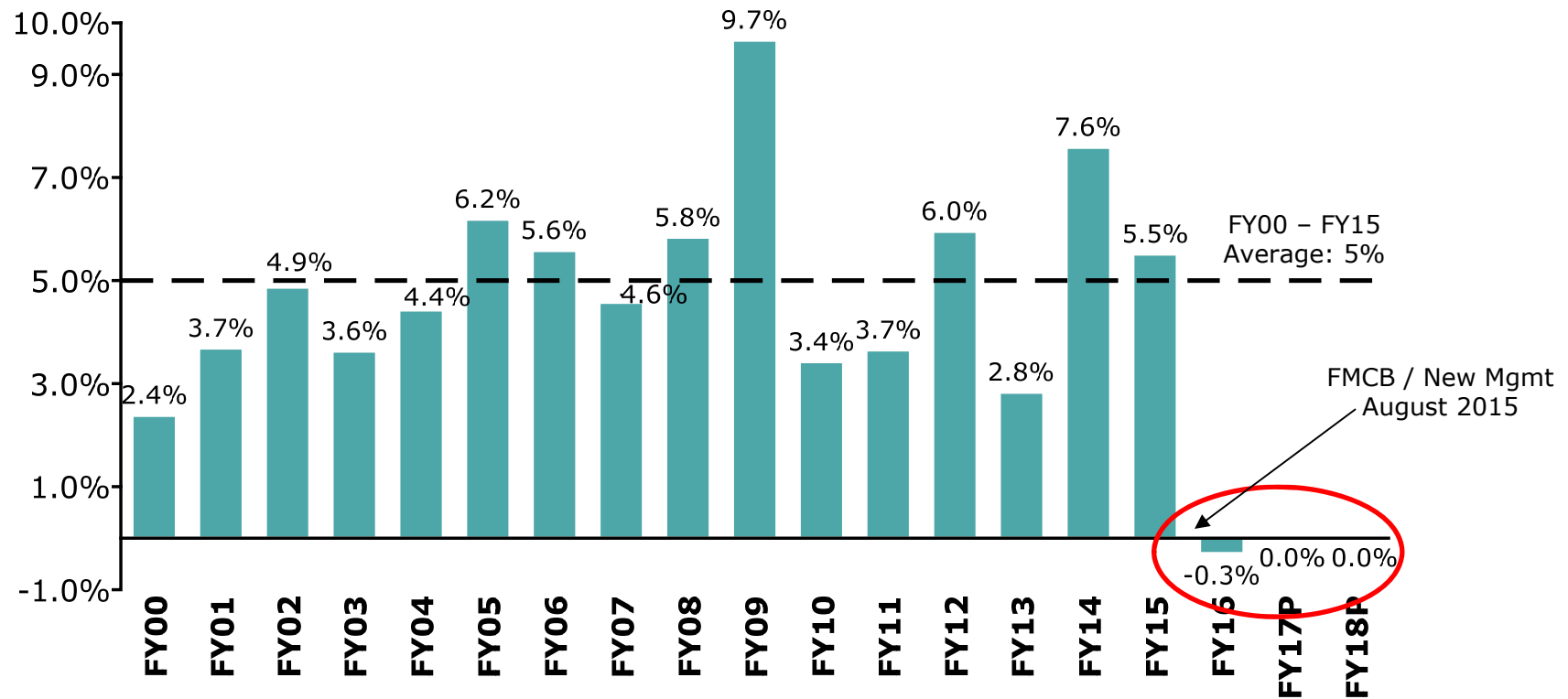
- Highly developed critical thinking / business analytics skills
- Expertise in using financial and operational data to drive decision-making
- Ability to drive continual improvements in productivity and efficiency
- Ability to manage complex, cross-enterprise projects



Since FMCB, operating expense growth lowest in 15 years

Annual operating expense growth rate
(excluding debt)

Incremental operating expense FY08 – FY15: \$470M



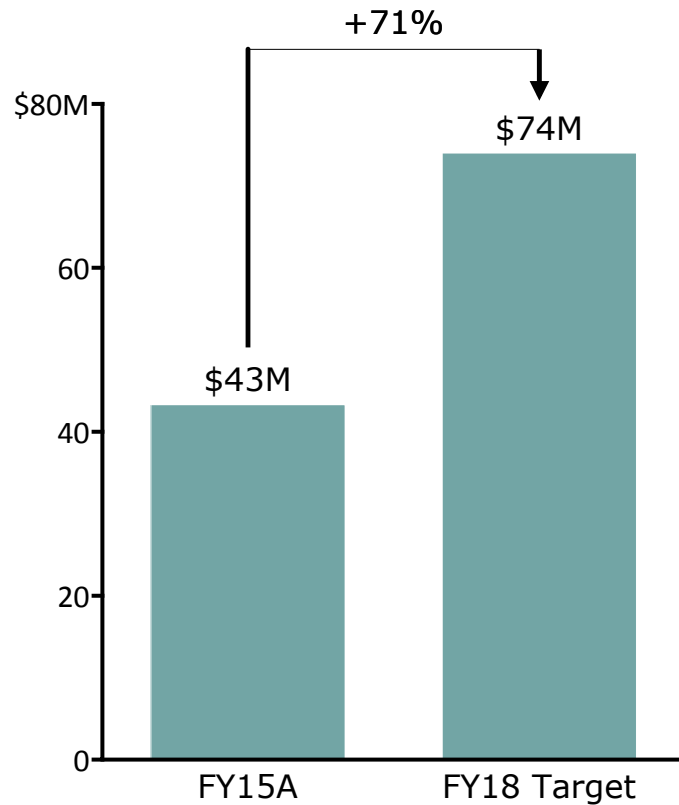
Note: For comparative purposes, FY17 core operating expenses exclude new Amtrak/PRIAA expenses and capital employees transferred in FY17. Energy costs forecast to be \$8M less in FY17 than in FY16

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Since FMCB, own-source revenue up 70%

MBTA Own-Source Revenue



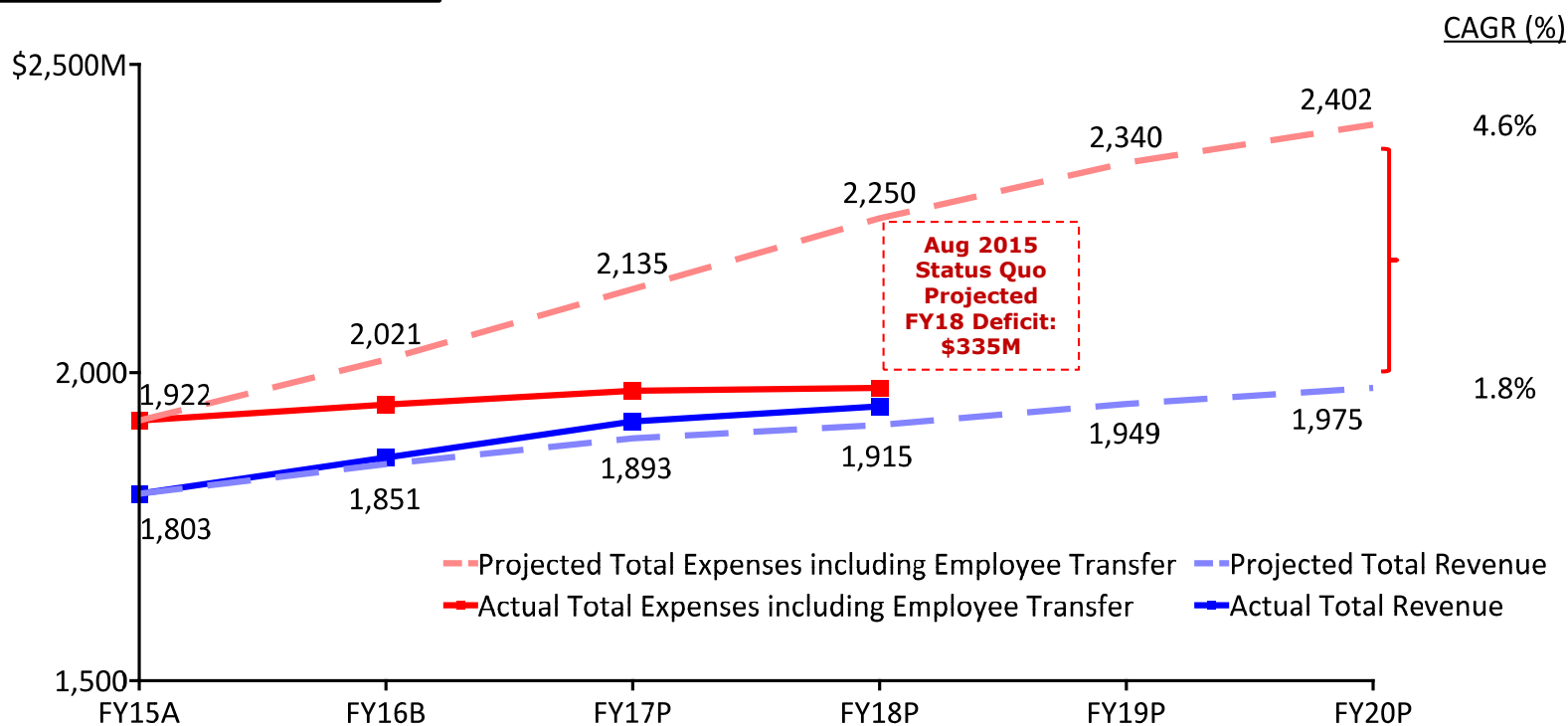
Competitive rebid process drove best value for MBTA





Cost control puts MBTA on track for Forward Funding goal: Dedicated revenues cover operating expenses

STATUS QUO FY17:20 PRO FORMA
August 2015



Structural Deficit
Includes Debt Service

-\$119M

-\$170M

-\$242M

-\$335M

-\$391M

-\$427M

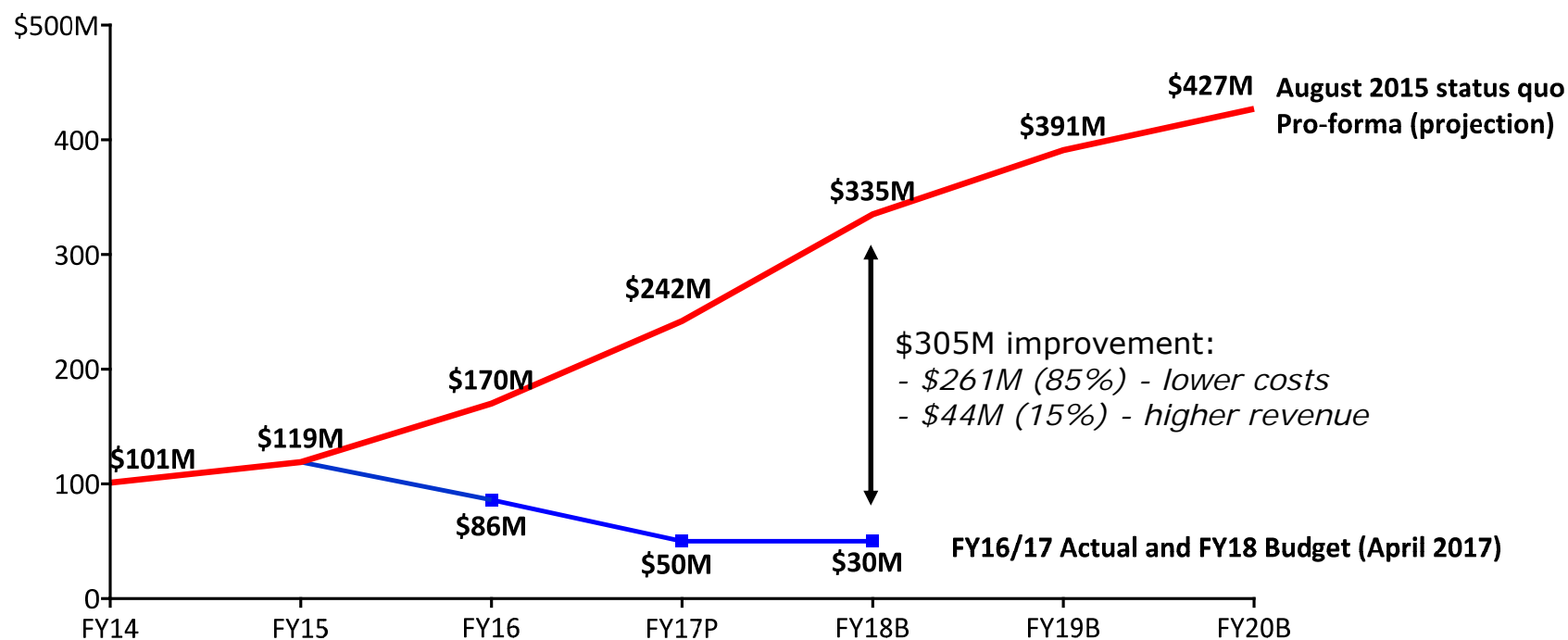
Note: Structural deficit includes debt service and transferred capital employees annual expense, does not include Additional Assistance

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FY18 budgeted operating deficit forecast reduced \$305M

Structural deficit



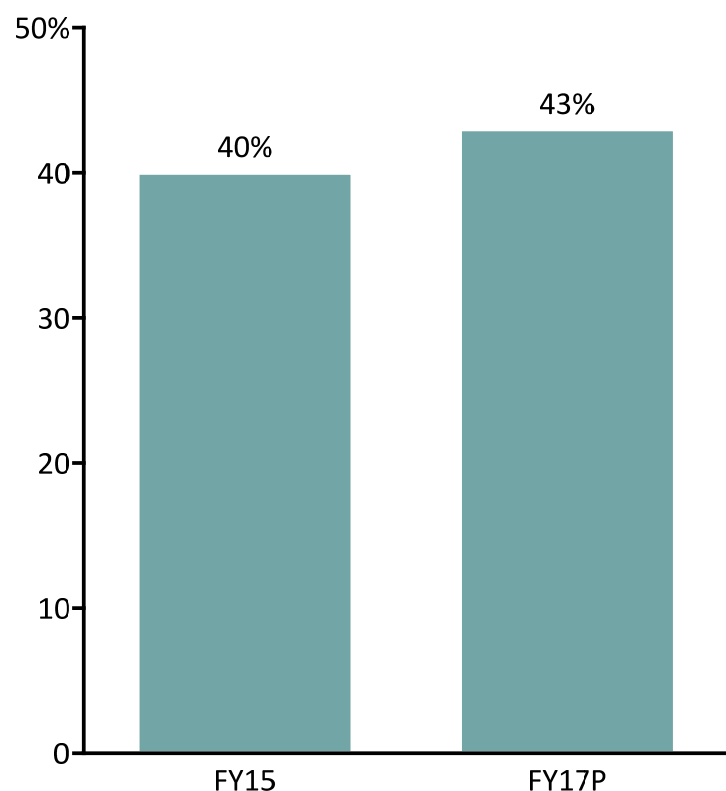
Source: MBTA management in process of recasting FY18-FY20.

Operating Deficit does not include additional state assistance of \$155M in FY16 or \$187M FY17 (forecast)



Stronger fare recovery ratio = improving operating efficiency

MBTA Fare Recovery Ratio



- “Fare recovery ratio” (FRR) measures transit system operating efficiency
- Calculation: total fare revenue / non-debt operating expense
- FRR shows what total % of system operating expense (not including debt) are covered by riders
- Systems with higher FRR require less taxpayer subsidy



New approaches



Management / FMCB actions – first 24 months

Goal: Zero opex growth without core service cuts

Bending the cost curve:

- ✓ Set monthly financial targets / zero-based budgeting
- ✓ Streamlined workforce, 30% reduction in corporate/admin positions
- ✓ Re-negotiated Carmen's Union contract wage rates and work-rules
- ✓ Introduced and enforced overtime/attendance policies
- ✓ Restructured and refinanced debt portfolio
- ✓ Consolidated paratransit RIDE call centers

Modernizing MBTA through industry partnerships:

- ✓ Contracted for cash-handling, warehouse, Uber/Lyft, call center
- ✓ Launched first full turnkey contract bus operation in Winthrop



Management / FMCB actions – first 24 months

Goal: Drive revenue growth, accelerate capital investment

Driving revenue growth:

- ✓ Rebid system-wide parking and advertising contract, digital focus
- ✓ Raised system-wide fares average 9.3%, reduced cash bus fare
- ✓ Enforced third-party contract terms (revenue and cost)

Accelerating capital investment delivery:

- ✓ Invested \$100M in winter resiliency infrastructure
- ✓ Voted to replace entire Red Line #3 fleet with 120 new cars
- ✓ Replaced one-third of bus fleet with 375 new hybrid and CNG buses
- ✓ Fast-tracked modernization of automated fare collection system
- ✓ Reset GLX project with new team & \$600M in value engineering
- ✓ Deposited \$140M in operating savings into the capital lockbox



Management /FMCB actions – first 24 months

Goal: Modernize procurement, strengthen executive management

Upgrading/modernizing internal systems:

- ✓ Shifted MBTA onto statewide payroll (HRCMS) and contracts platform
- ✓ Transitioned off of “cash-vouchers” to electronic purchase orders
- ✓ Implemented digital platform to create visibility on open requisitions
- ✓ Partnered with TPA for leave management programs (FMLA/ADA)
- ✓ Implementing HASTUS electronic roster-picking for operators
- ✓ Launched AFC 2.0 procurement to replace fare collection system

Strengthening executive leadership:

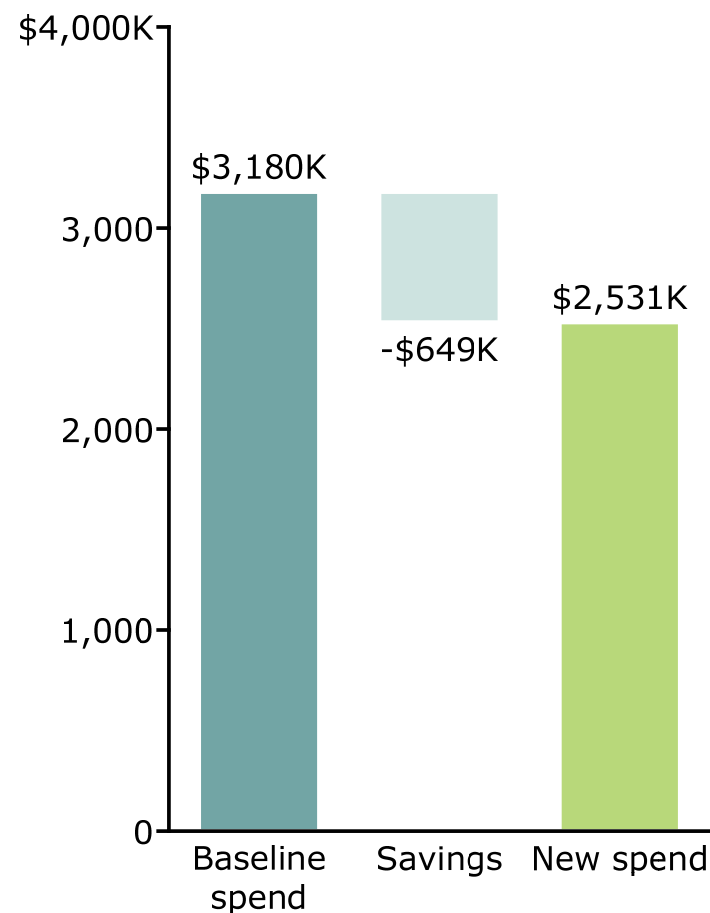
- ✓ 40% of current executive management team new since July 2015
- ✓ Recruited top-tier talent to run capital delivery and GLX programs



Every dollar counts: Drop no-use cell phones

- 580 devices – ~1/3 of total devices – identified with no usage
- Disconnected / suspended 553 devices
- Resized minute pool to reflect actual usage
- Removed global calling, navigation, caller name ID and changed hot-spot plans

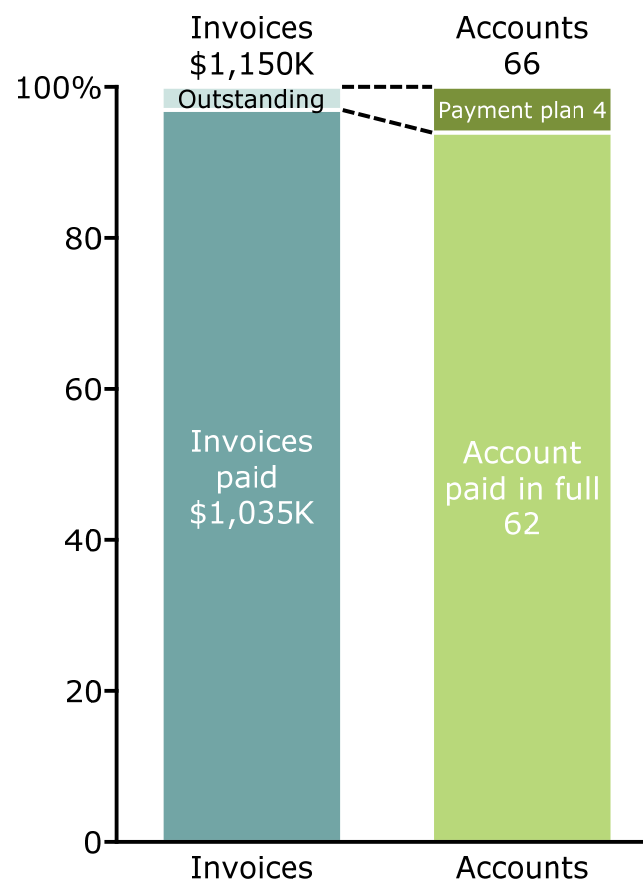
MBTA Annual Wireless Spend





Every dollar counts: Invoice for tenants for electricity as per leases

- The MBTA leases space across the subway system and should bill for utilities
 - Leases generally require tenants to pay electricity
- MBTA recently concluded the first systematic review of utility billing in over 15 years, led by Energy and Environment Department (E&E)
 - Review identified found that 66 of 78 total accounts had not been invoiced for electricity in more that 20 months
 - The other 12 accounts had never been billed
- To date, MBTA has recovered \$1M through invoice reconciliation (over 95%)
- Going forward recurring revenue from utility billing to increase by 40%

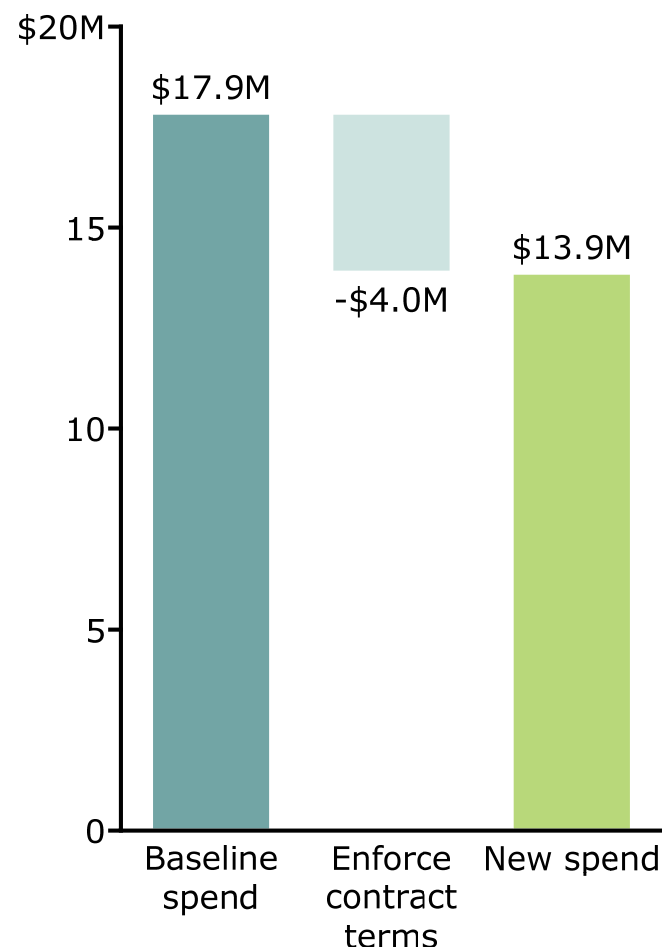




Every dollar counts: Enforce 2014 janitorial contract performance terms

- MBTA station cleaning has been out-sourced since 1991 to private janitorial contractors
- In 2014, the MBTA competitively bid cleaning contracts on a performance basis (with vendor to set staffing levels based on industry productivity metrics)
- Performance based contract set a fixed price and established performance standards
- Previous management had not enforced performance contract pricing

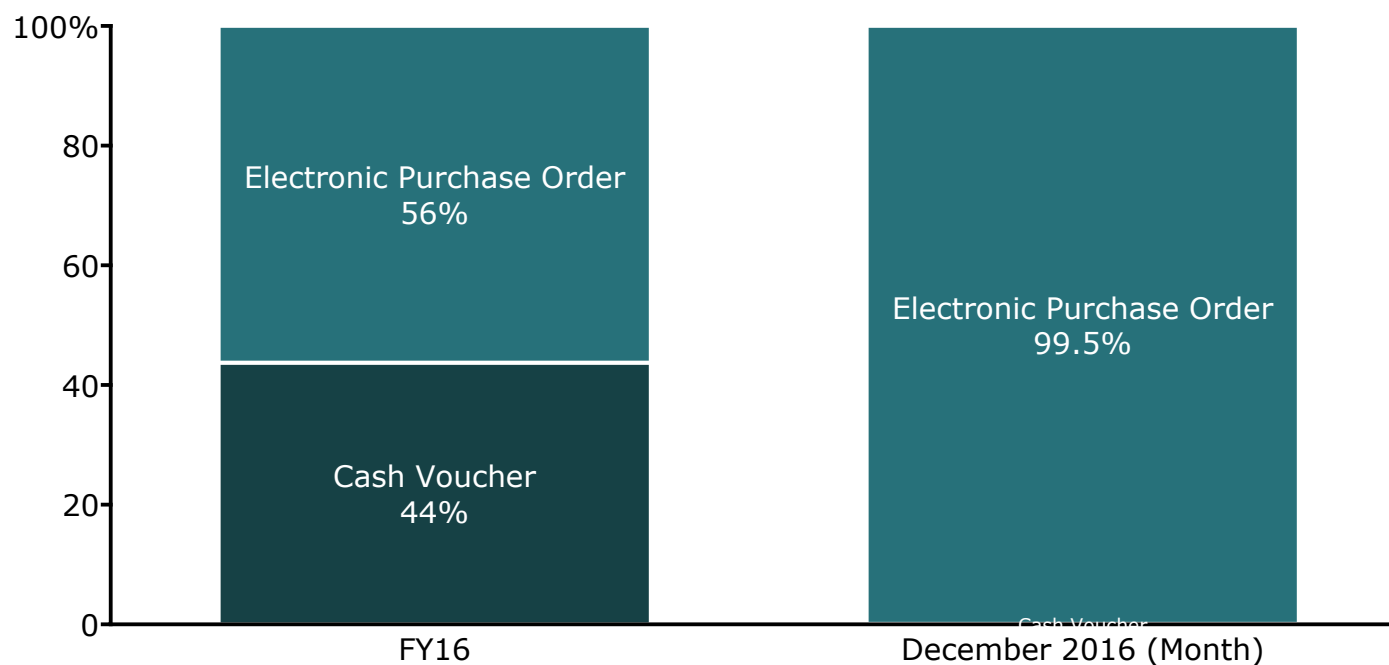
MBTA Station Cleaning Contracts





Every dollar counts: End use of cash vouchers for purchasing

MBTA Operating Budget Materials and Services Spend



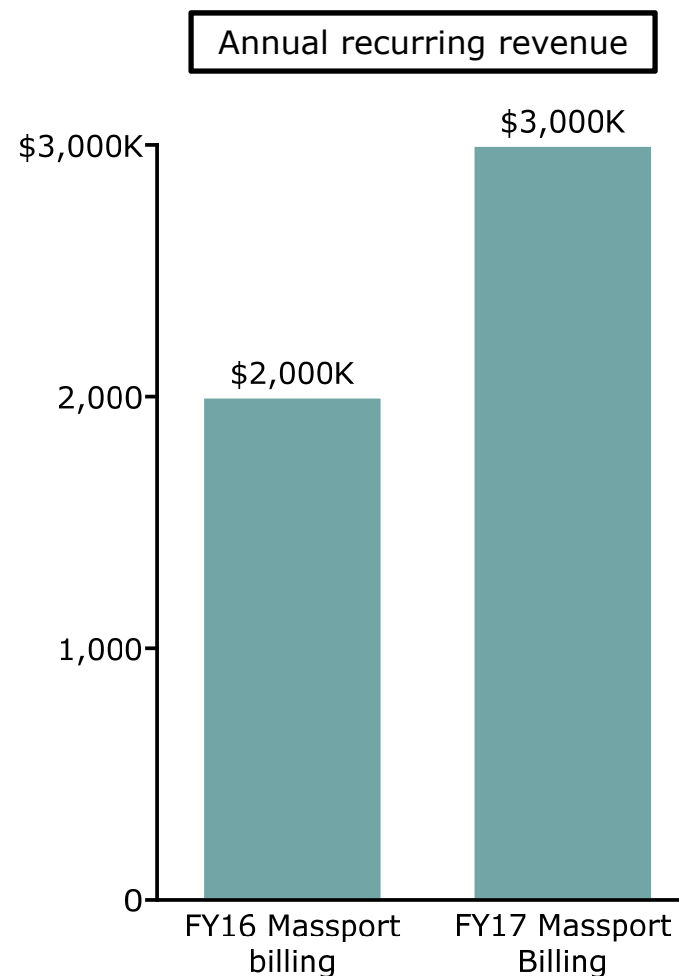
Source: MBTA Internal Data

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Every dollar counts: Invoice Massport per 2004 contract terms

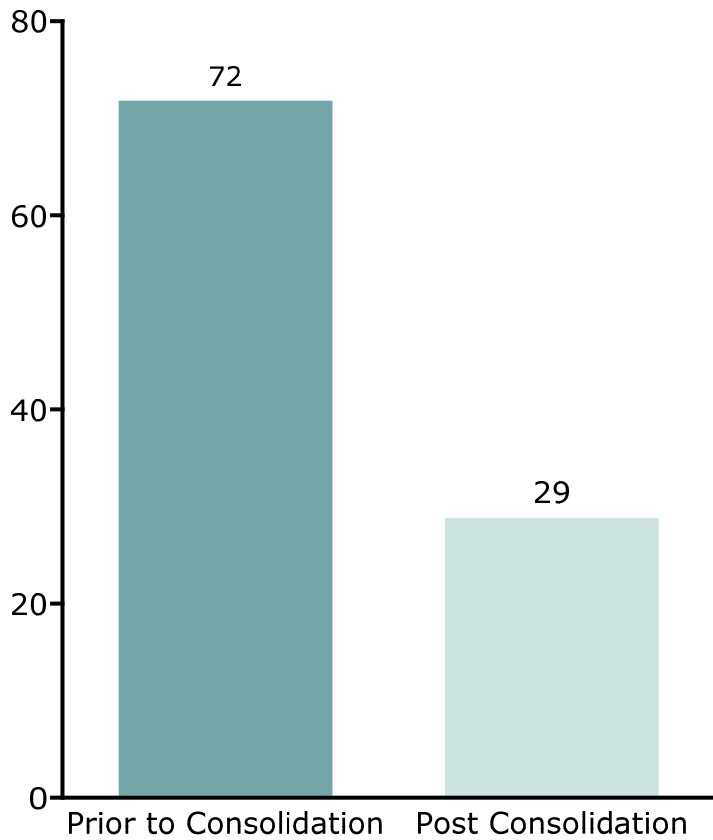
- In December 2004, MBTA and Massport executed an agreement for Silver Line service between South Station and Logan International Airport
- For more than 10 years, the MBTA did not accurately bill Massport (74% / 26% split, contract based on actual MBTA costs)
- Current review identified \$7.8M owed to the MBTA
- The MBTA forecasts future annual revenue of \$3 million from Massport
- Massport has been a great and cooperative partner in this effort



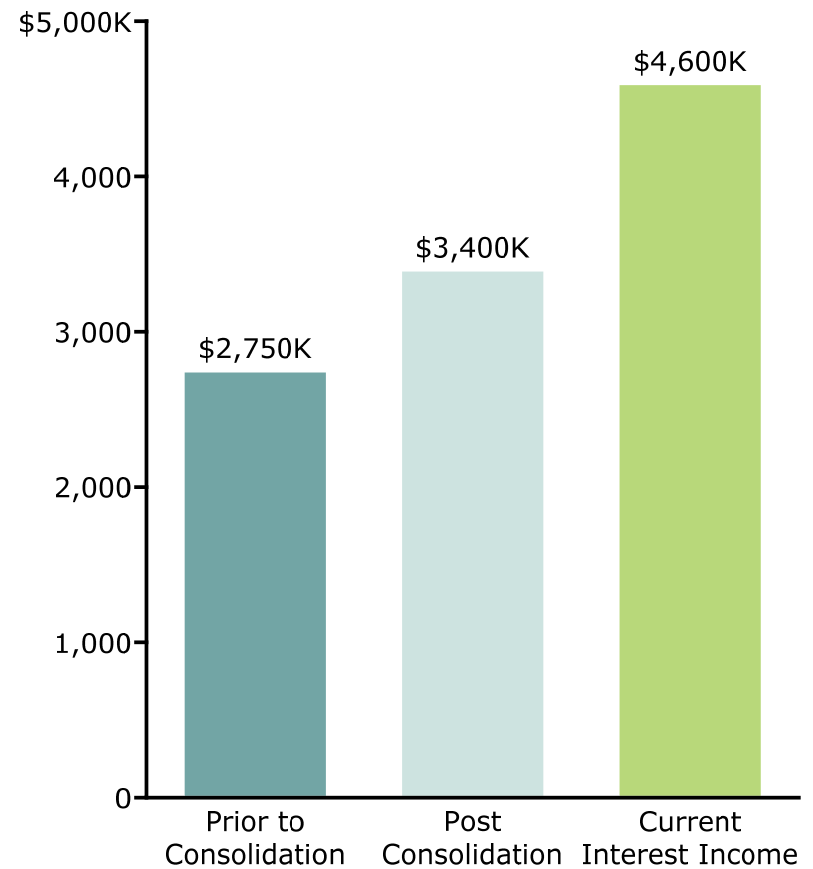


Every dollar counts: Consolidate bank accounts to get better rates

of Bank Accounts



\$\$ Interest Income



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Every dollar counts:

Shift to statewide payroll system enables automated reconciliation with GIC

- GIC provides coverage to the MBTA, including 6,500 employees, 5,000 retirees and 400 survivors
- MBTA was an offline agency and transacted with the GIC via paper enrollment*
- After GIC raised reconciliation issue, MBTA conducted a review (12,000 hours of review by hand)
 - Team identified more than 4,000 errors, impacting 1,300 employees
- MBTA corrected employee benefit files and ensured paycheck deductions were appropriately applied
- As a result of the findings, the MBTA is transitioning all employees onto the Commonwealth's HRCMS system
- New process enables real time GIC reconciliation through state software system



*Stockpiled paper reconciliation packages

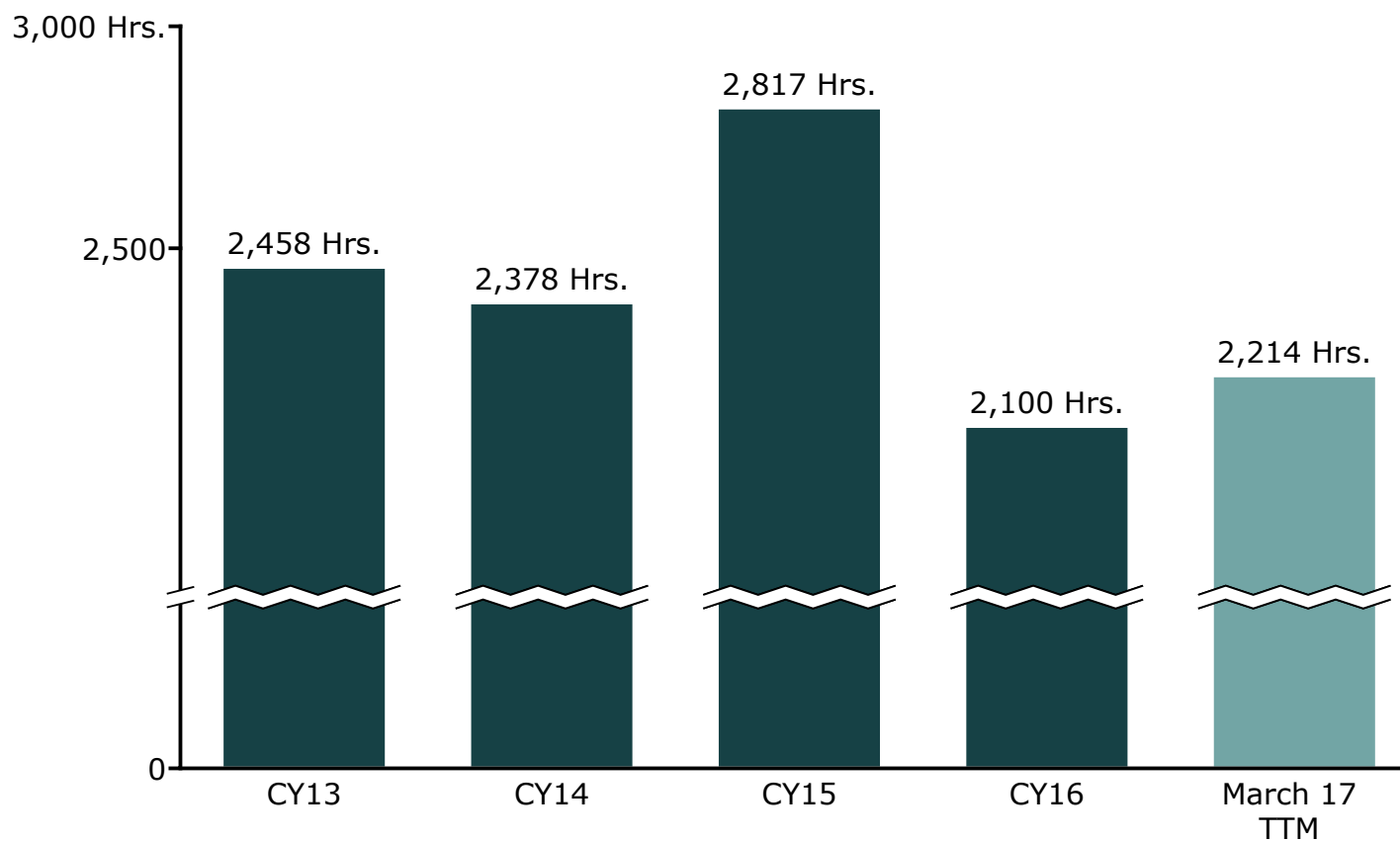


- GIC has been a great partner to the MBTA in this effort
- MBTA appreciates their cooperation and engagement



Bending the cost curve: Overtime hours per day lowest in 5 years

Average Operating OT Hours per Day (TTM*)



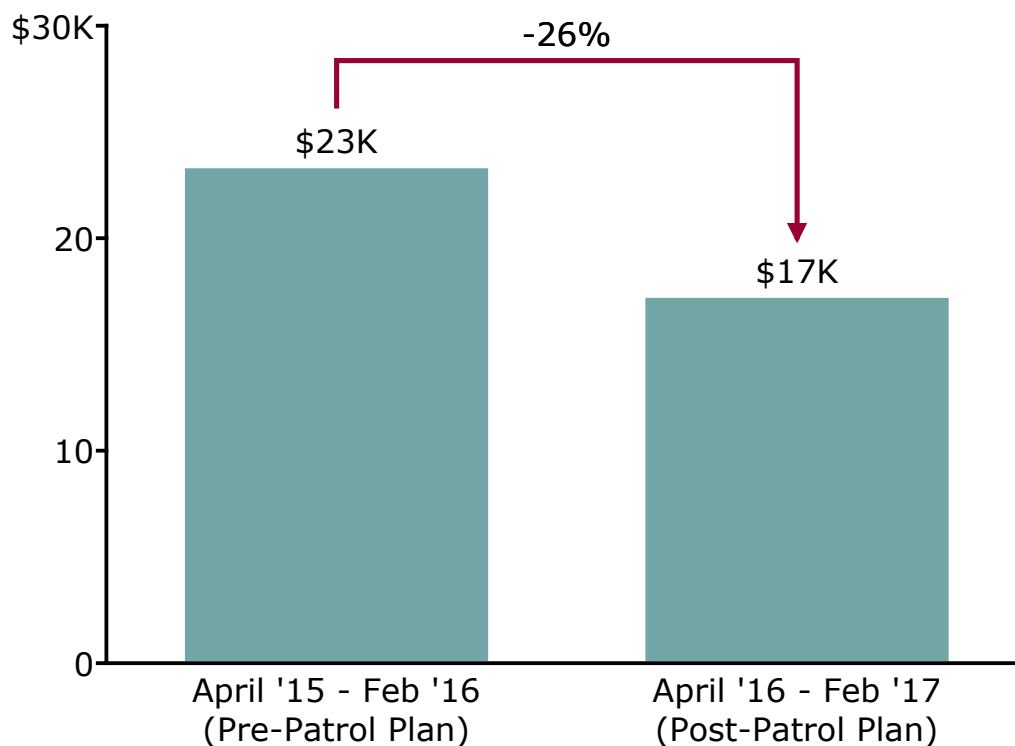
*Trailing twelve months (TTM) computes the average for the past year from a particular point in time
Source: MBTA Internal Data

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Bending the cost curve: New patrol plan has reduced police overtime by 26%

Average Daily Overtime Expense
(MBTA Transit Police)



Effect of New Patrol Plan

- Implemented in March of 2016
- New plan better aligned patrols with ridership patterns and high-risk crime periods, resulting in less overtime usage
- Daily OT expense down 26% vs. prior year period



Note: includes both operating and capital budget overtime expenses
Source: MBTA Internal Data

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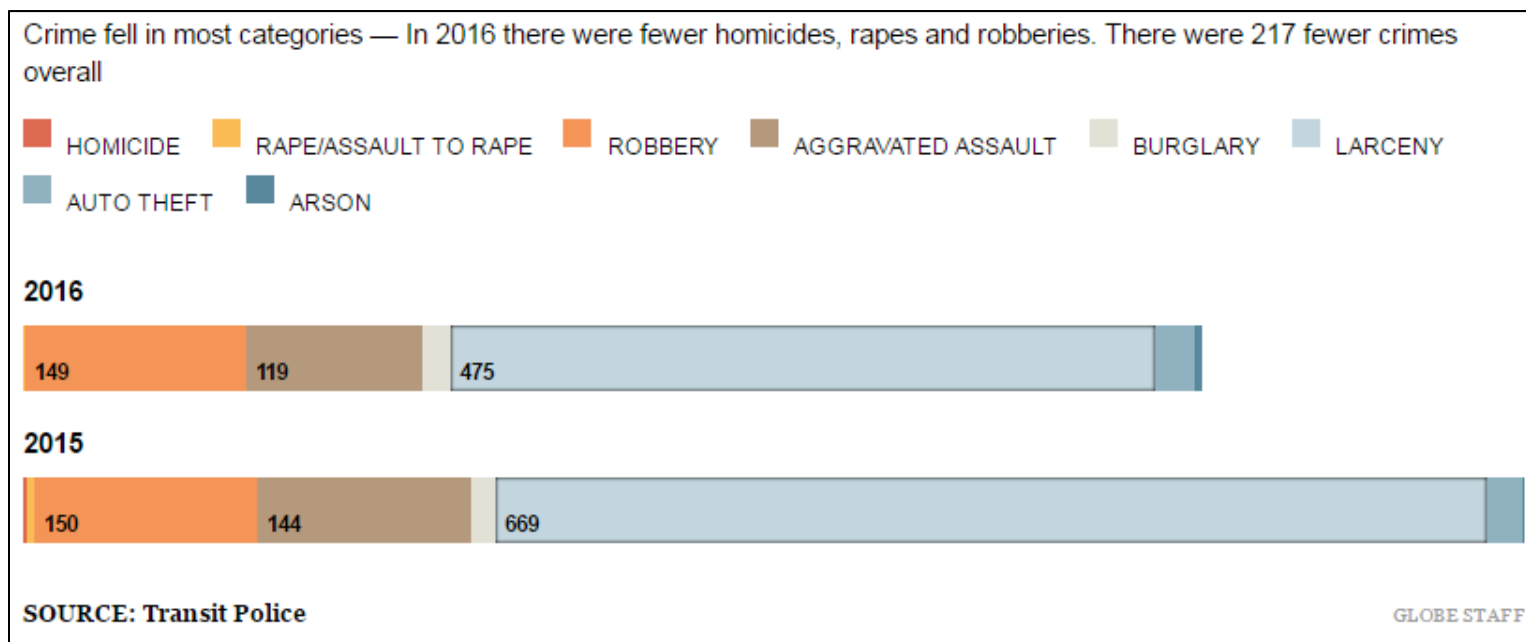


Transit police patrol plan: New patrol plan resulted in crime dropping 21% to lowest level since 1997

The Boston Globe

Crime last year on MBTA dropped to lowest level since 1997

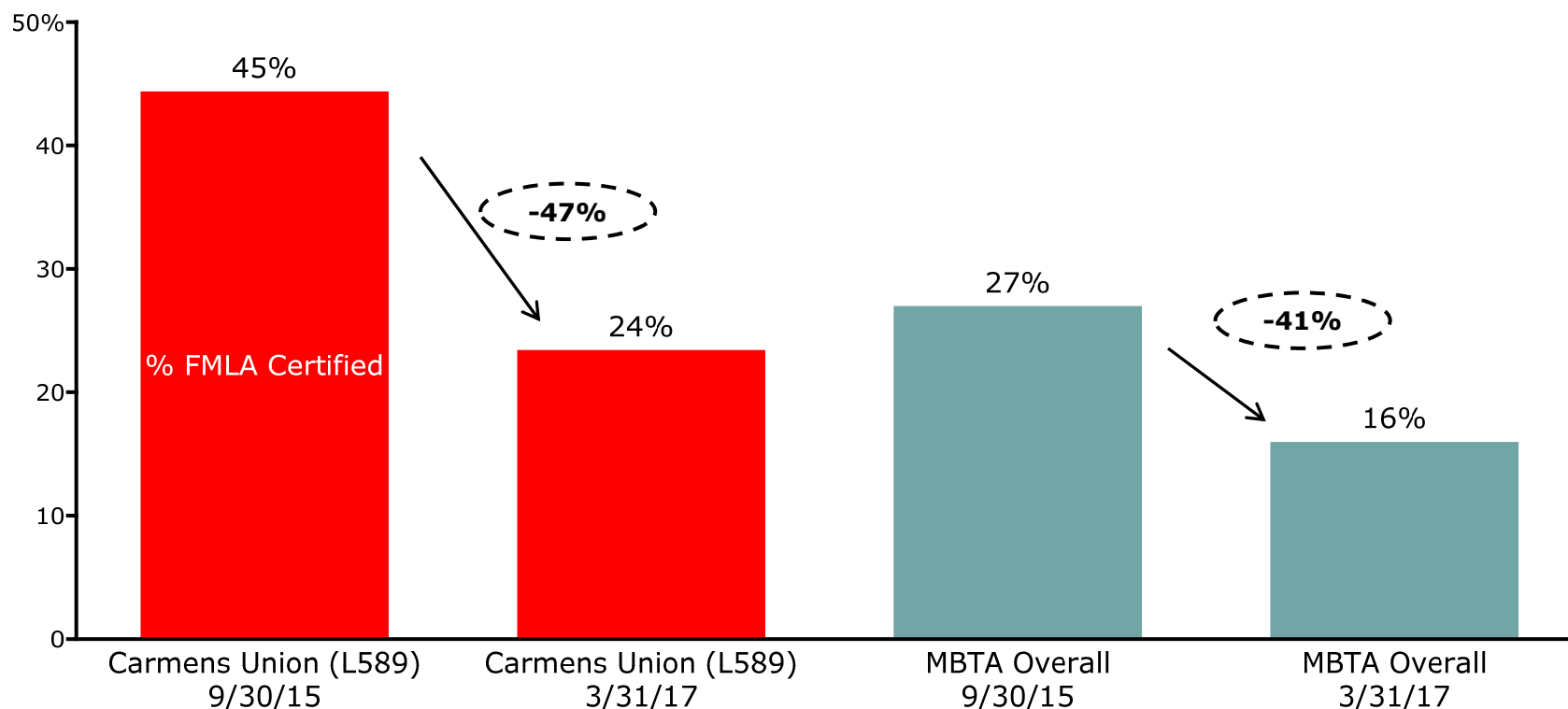
By [Laura Crimaldi](#) | GLOBE STAFF MARCH 08, 2017





Bending the cost curve: Third-party administrator (TPA) in place to manage FMLA/ADA

% of Employees with Active Family Medical Leave Act (FMLA) Certification



Source: Internal MBTA data



Bending the cost curve: First Competitive Bond Sale In 20 Years Realized \$160M In Future Savings

- Both new bond series were issued to refund existing bonds carrying higher interest rates – refinancing closed on 7/22/16

- \$218 million Senior Sales Tax Bonds
 - Purchased by J.P. Morgan
 - Yields ranged from 1.28% to 2.67% on maturities from 2021 through 2033
 - Refunded bonds yielded 4.55% to 4.82%
 - \$79 million in future cash flow savings (Present value savings of \$53 million)

- \$119 million Assessment Bonds
 - Purchased by Morgan Stanley
 - Average yield was approximately 1.75% on maturities from 2024 through 2028
 - Refunded bonds yielded 4.00% to 5.00%
 - \$84 million in future cash flow savings (Present value savings of \$57 million)

Massachusetts Bay Transp \$115,900,000 Assessment Bonds, 2016 Series A

The following bids were submitted using *PARITY*[®] and displayed ranked by lowest TIC.
Click on the name of each bidder to see the respective bids.

Bid Award*	Bidder Name	TIC
<input checked="" type="checkbox"/> Reoffering	Morgan Stanley & Co. LLC	1.760022
<input type="checkbox"/>	Wells Fargo Bank, National Association	1.768218
<input type="checkbox"/>	Citigroup Global Markets Inc.	1.774014
<input type="checkbox"/>	Barclays Capital Inc.	1.780146
<input type="checkbox"/>	J.P. Morgan Securities LLC	1.785387
<input type="checkbox"/>	Raymond James & Associates, Inc.	1.790460
<input type="checkbox"/>	Goldman Sachs & Co.	1.793498
<input type="checkbox"/>	Bank of America Merrill Lynch	1.795526
<input type="checkbox"/>	Jefferies LLC	1.809908



Low
bidder

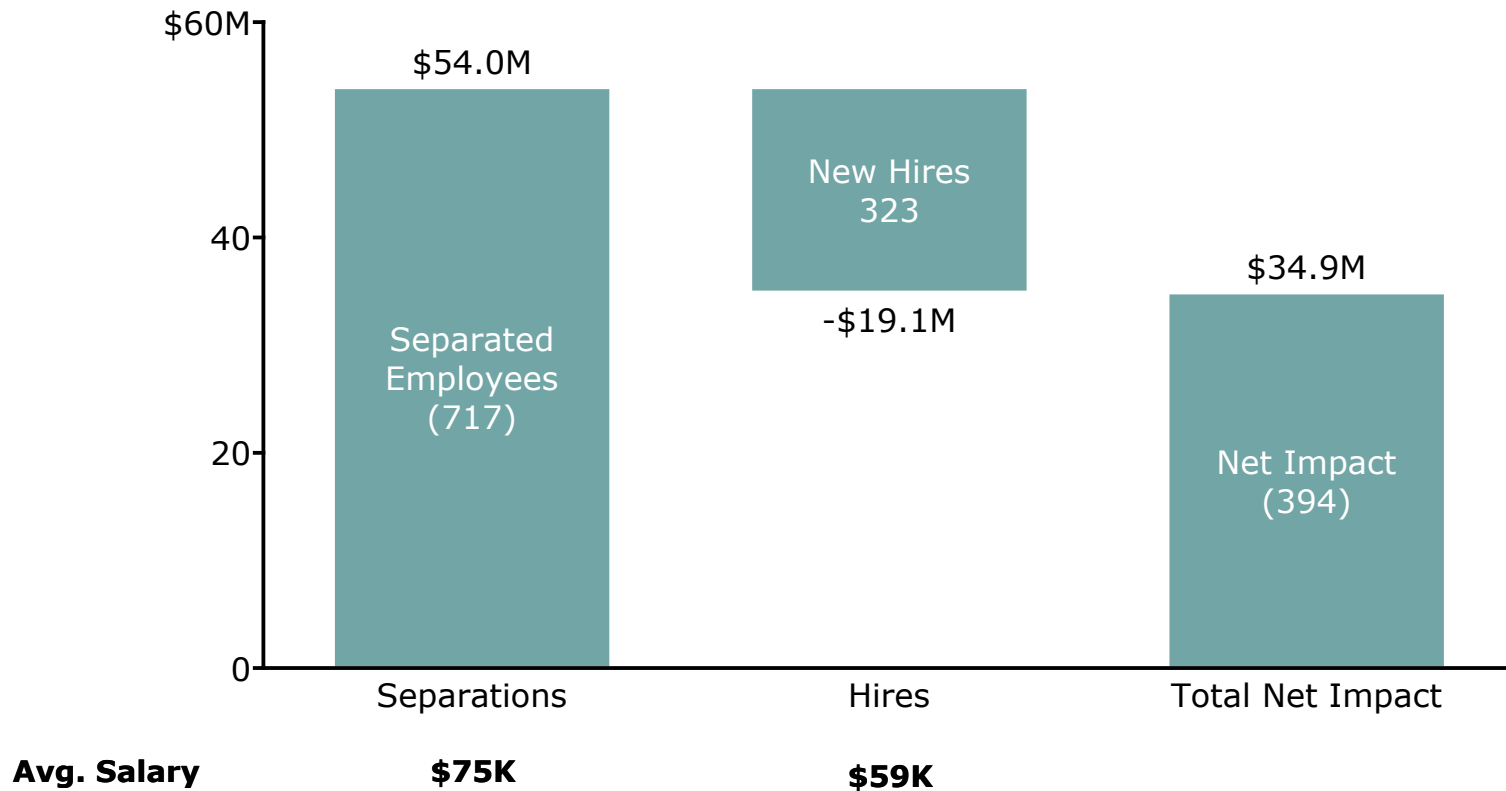
- 9 banks participated in competitive bid process for Assessment Bonds
- Bids were within 5bps of each other



Bending the cost curve: Streamlining workforce

**MBTA Separations / Hires
Salary (\$ Millions)**

FY 2017
\$35M net salary reduction
(\$50M including cash fringe)





Bending the cost curve: New labor contract Local 589 12/19 Agreement – Principles

Bargaining unit work contracted out to private companies:

- Cash handling operations
- Warehousing and logistics
- Bus diversions to support capital program
- In-station customer service agents
- Future lifecycle maintenance programs (new Red / Orange Line cars)

Work rule modernization:

- 40-hour work week to earn overtime
- Electronic rostering (end paper-based PICK process)
- Bi-weekly pay

New hire wage rates:

- 15% discount to current rates / longer progression

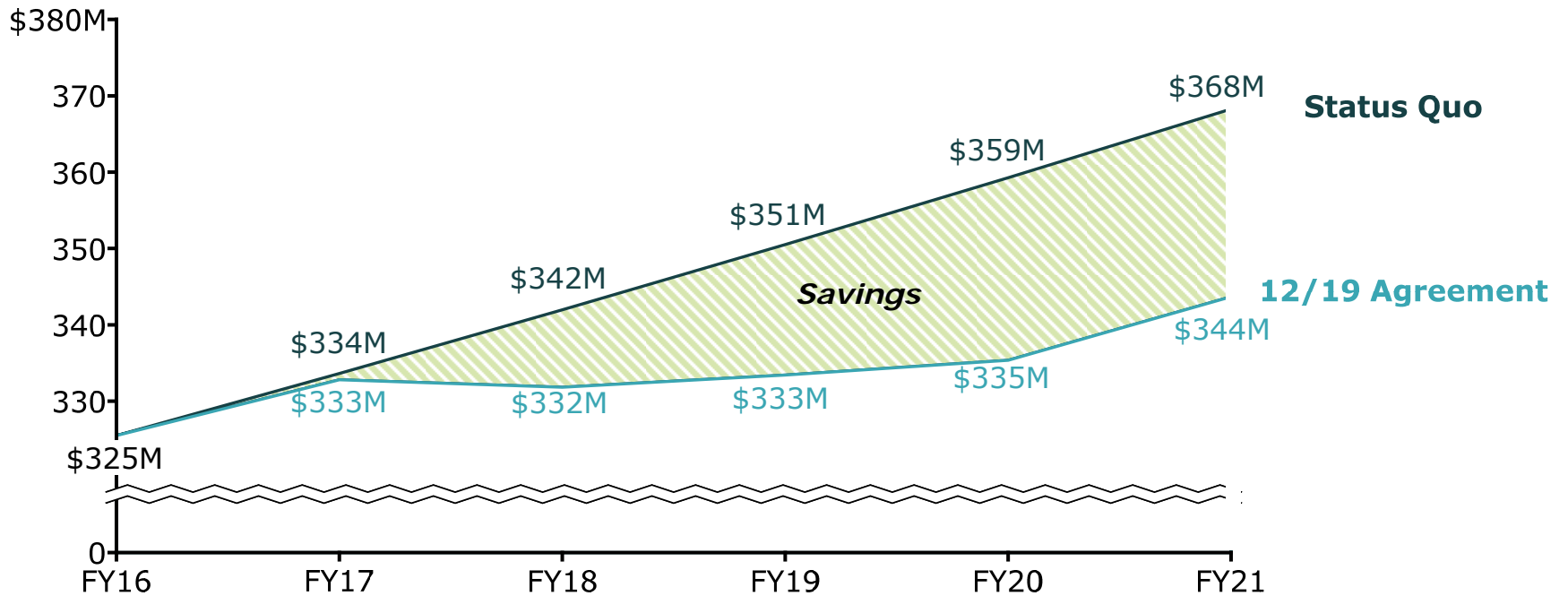
Annual wage increase (ATBs):

- 7/1/17: 0%, 7/1/18: 1.5%, 7/1/19: 1.5%, 6/20/20: 2.5%, 12/20/20: 1.5%



Bending the cost curve: Milestone agreement with Carmen's Union

Total wage spend (incl. pension and FICA)
L589 Members



**12/19 Agreement
Savings**

\$1M

\$10M

\$17M

\$24M

\$25M

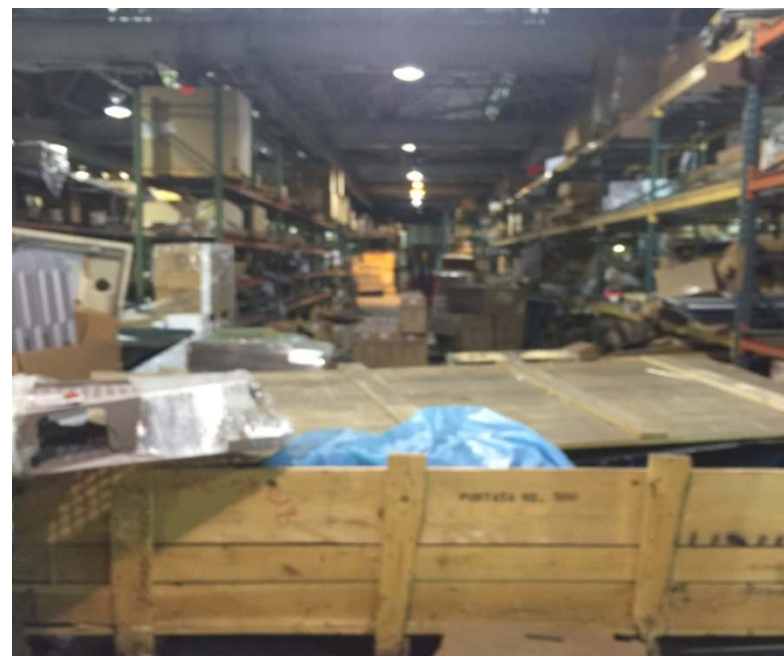


Bending the cost curve: Leveraging flexible contracting to improve performance and reduce cost

Money Room: lack of controls and unproductive



Warehouse: poorly maintained and inefficient

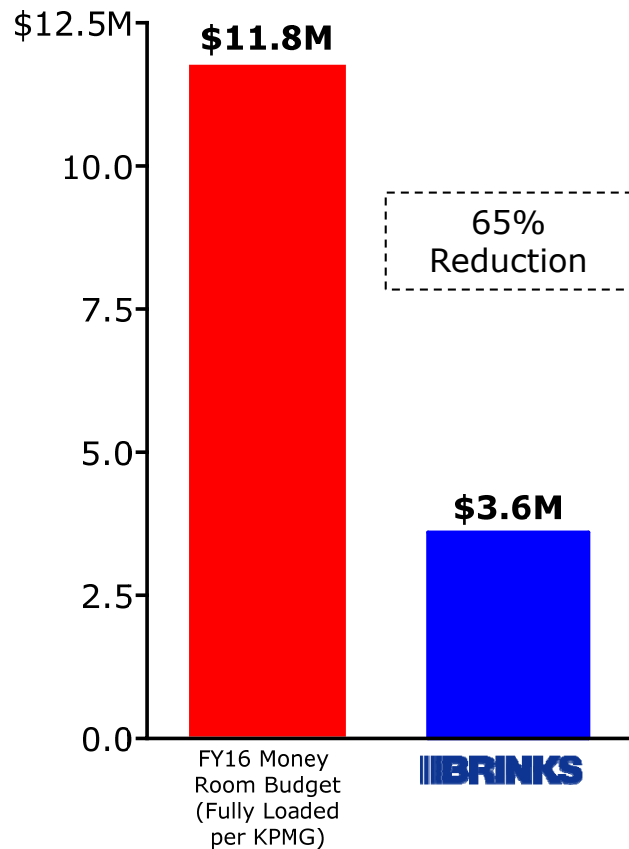




Bending the cost curve: Money room and warehouse partnerships

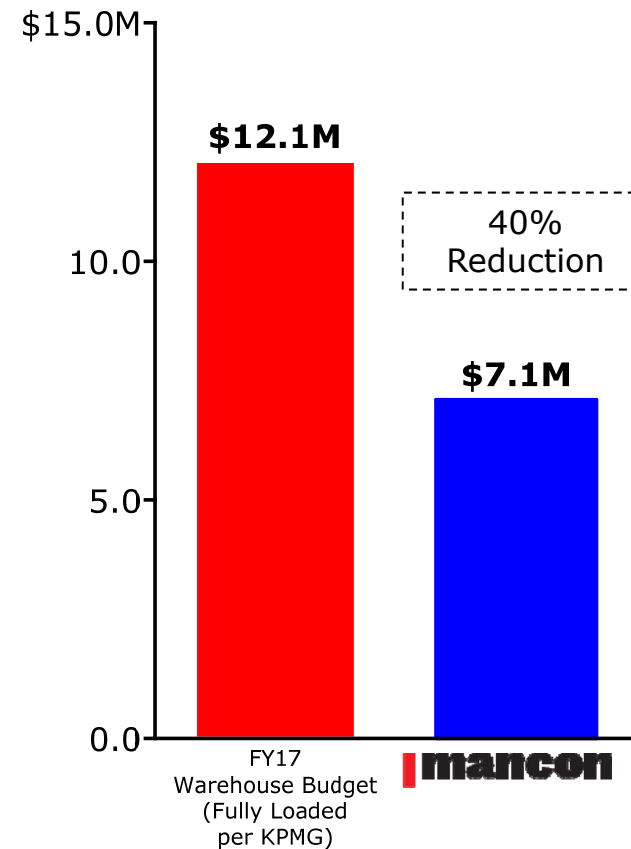
Money Room

Annual Cost
(Fully Loaded)



Warehouse

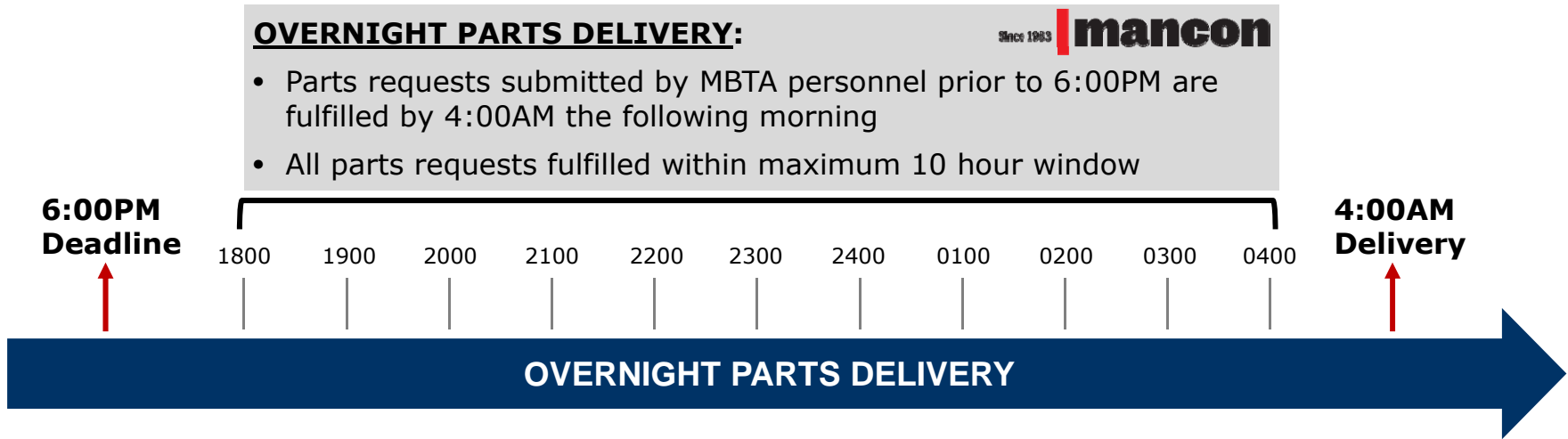
Annual Cost
(Fully Loaded)



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Bending the cost curve: Vastly improved warehouse / logistics service levels



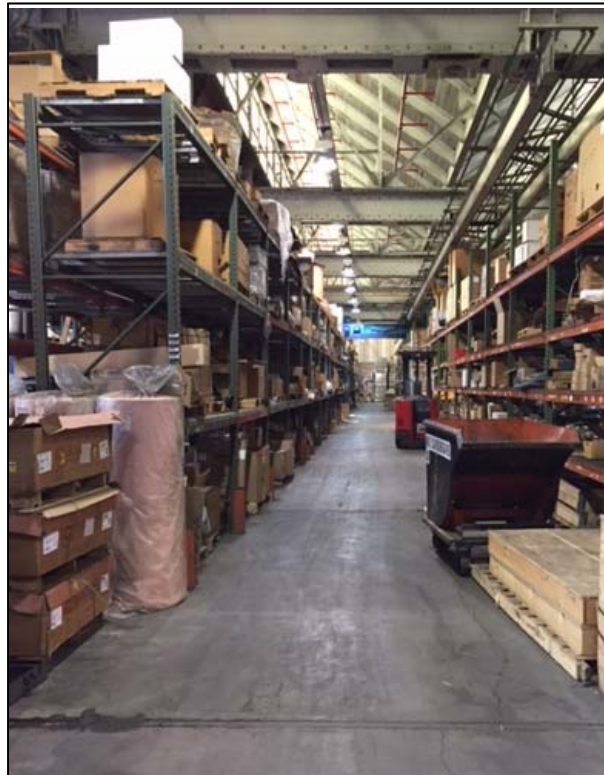
- MANCON took over operations and began deliveries on February 6th
- Completed 542 deliveries over the first 38 days of operation
- 99.8% compliance with 10-hour delivery standard (exceeds 95% SLA in contract)

Source: MBTA Internal Data; MANCON

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Warehouse Modernization: Better organized, cleaner, and more efficient





Fellsway Garage: Reorganized and efficient inventory management

Broken MBTA inventory system

- ✗ Disorganized storage
- ✗ No inventory management
- ✗ No standard stocking levels
- ✗ Lack of standard procedures

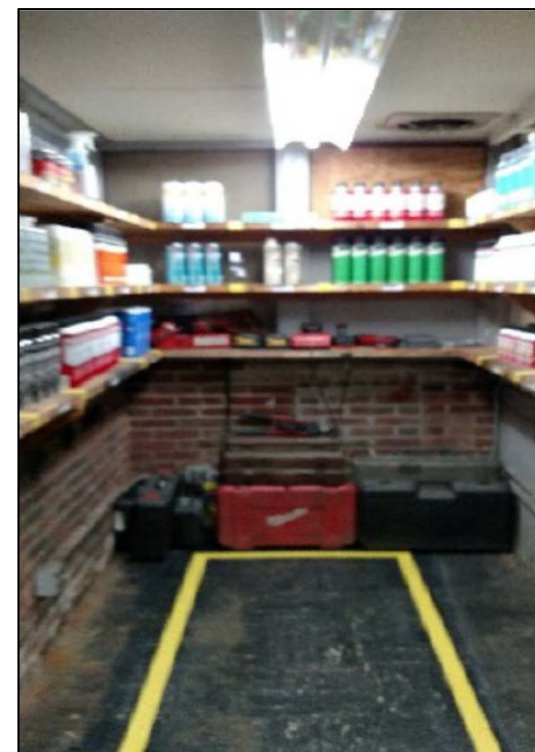
Mancon inventory system

- ✓ Organized storage
- ✓ Accurate inventory mgmt.
- ✓ Optimized stocking levels
- ✓ Standard procedures

Before



After



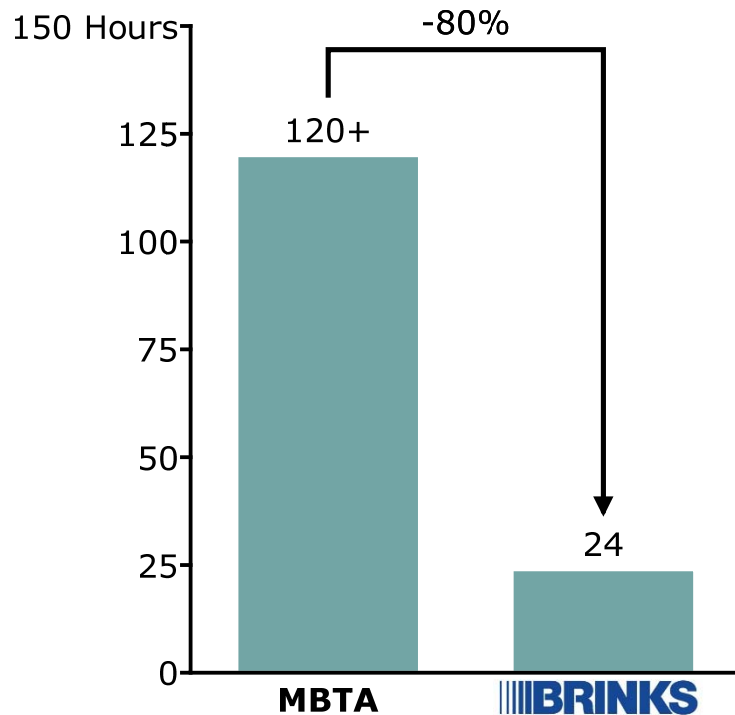
Better inventory management improves part retrieval time and maintenance efficiency



Bending the cost curve: Rapid improvement in cash collections efficiency

80% REDUCTION IN TIME TO DEPOSIT

Time From Collection to Bank Deposit (Hours)



BUSINESS PROCESS IMPROVEMENTS

- Streamlined route structure for trucks
- Shorter time “on premises” when BRINKS employees performing pick-ups
- Faster cash and coin processing
- BRINKS deposits cash on-site at processing facility into Santander virtual vault
- Faster reconciliation prior to deposit and real-time reporting

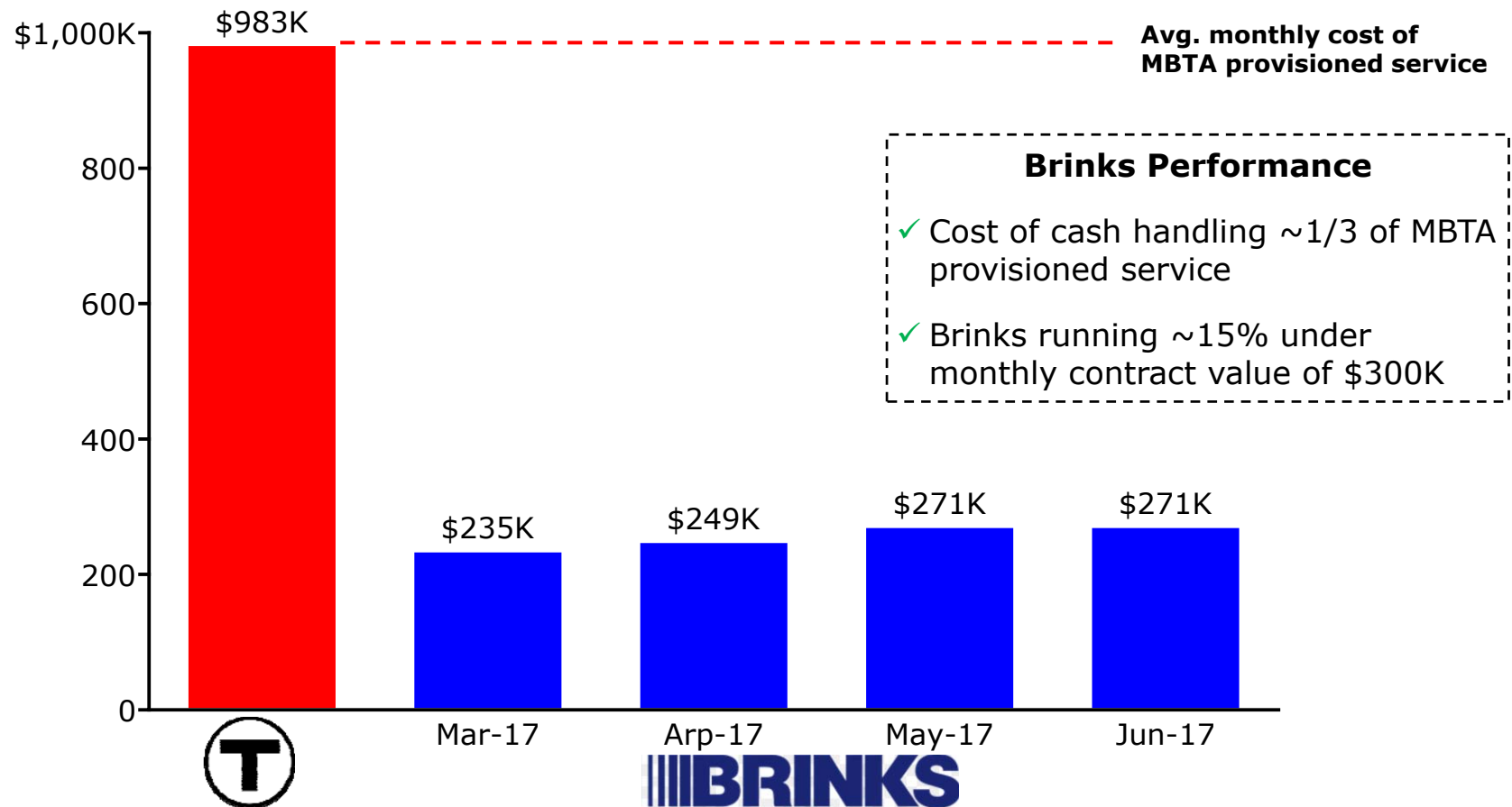
Source: MBTA Internal Data; BRINKS

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Cash handling contract management: March - June 2017 actuals

Cost of Cash Handling



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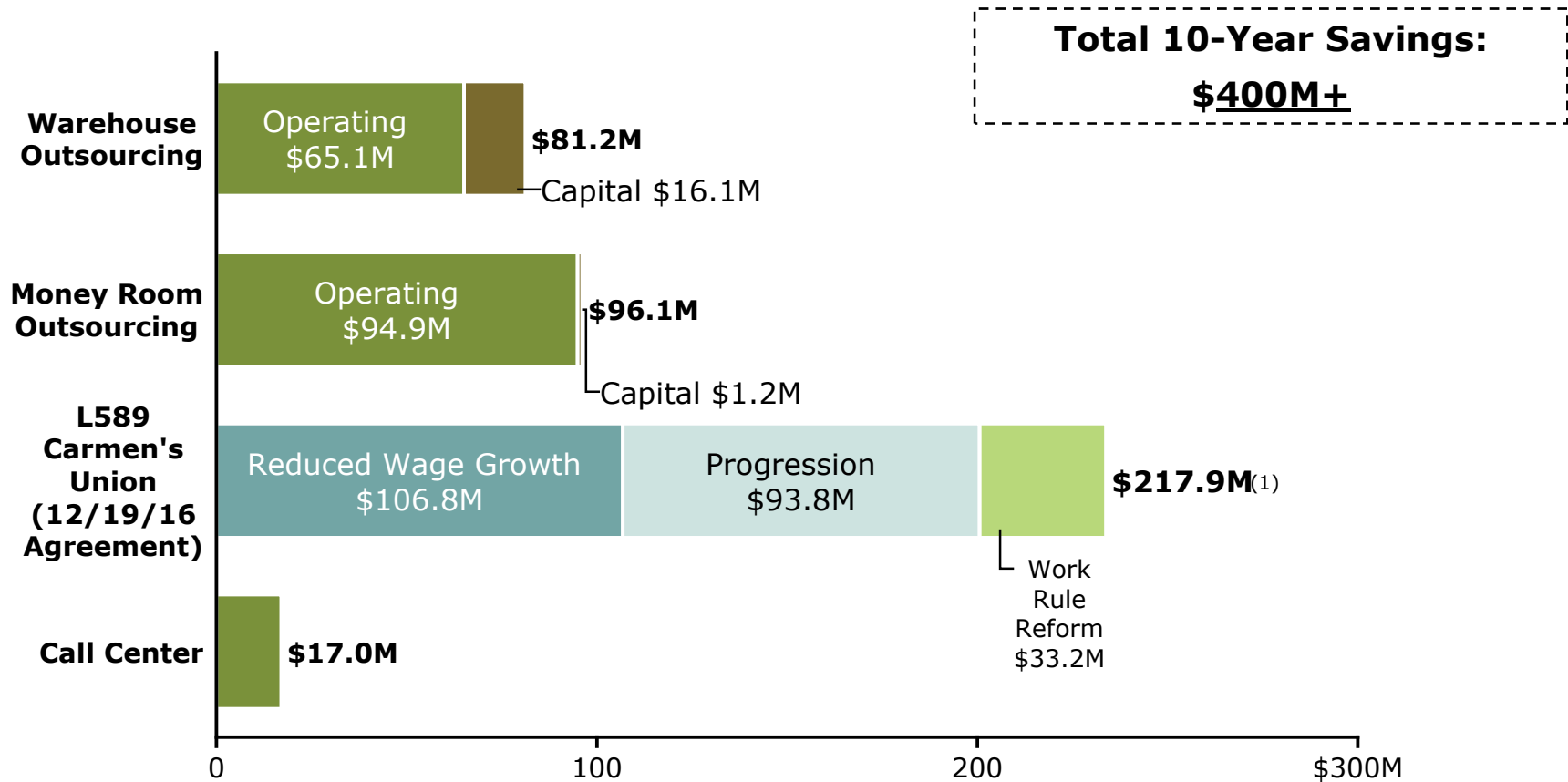
*money room fully loaded

Jun-17 included 2% Incentive added to Transportation invoice for exceeding Performance SLA



Flexible contracting: Driving savings through outsourcing and internal labor productivity

10-Year Projected Savings

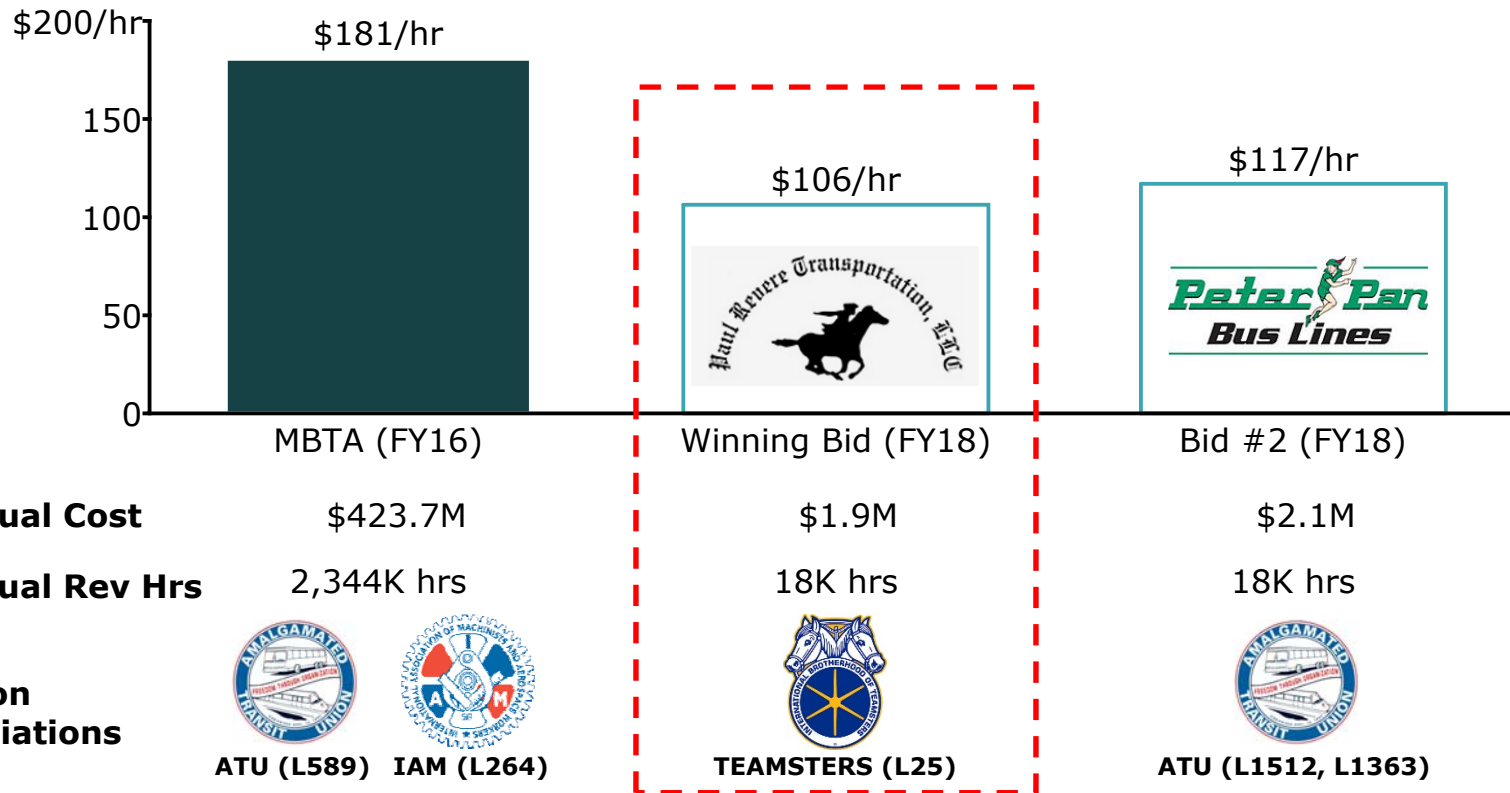


(1) Total L589 Carmen's Union savings net of \$16.0M in MTA contributions to Health & Welfare Trust over next ten years.
 Note: Warehouse and Logistics savings excludes \$22.7M in potential revenues from sale of excess inventory. Money Room savings excludes \$3.2M in potential revenues from sale of current money room facility and vehicle fleet.



Bending the cost curve: First full turnkey operations and maintenance contract

Total Cost per Revenue Hour



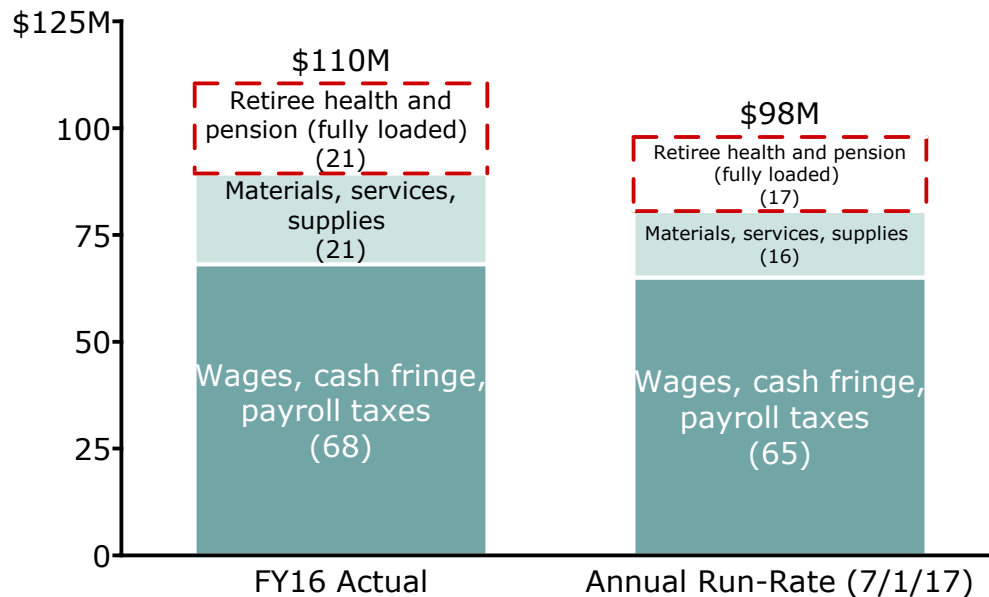
Note: MBTA FY16 costs include present value of fully funded pension and retiree health costs, include Everett Bus Shop, and exclude Non-Revenue Shops; MBTA internal costs only includes a portion of total bus G&A expense and reflect pure cost only (no profit margin)
Source: MBTA Internal Data

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**A Management actions to drive productivity:
\$8.8M cash savings (short of \$21M savings budgeted for FY18)**

MBTA Bus Maintenance Fully Loaded Cost (L264 Garages*)



Fully Loaded Savings	(\$12.5M)
Cash Savings	(\$8.8M)

MANAGEMENT ACTIONS



- ✓ Streamline workforce with new staffing model *Headcount down 13%*
- ✓ Overtime management *OT down 20%*
- ✓ Supply chain (materials) *Spend down 27%*

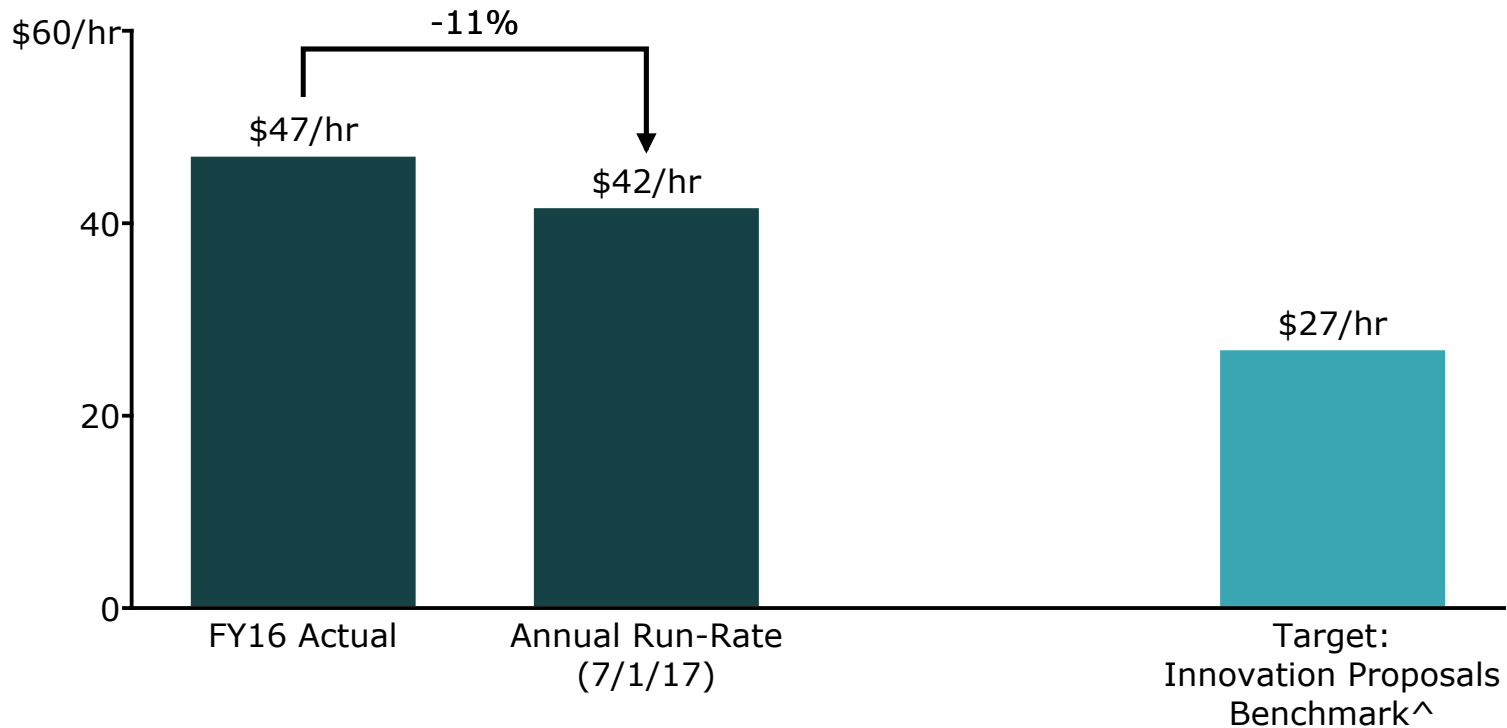
Headcount* 544 473

*Cost and headcount figures do not include areas without L264/Alliance presence (Admin. and No. Cambridge Carhouse); includes Everett Bus Shop and excludes both Non-Revenue Shops and fuel costs; Annual run-rate (7/1/17) figures also include wage costs associated with transfer of employees from capital to operating budget at Everett Bus Shop (\$3.2M regular wages, \$0.5M OT, \$1.8M cash fringe)
 Note: "Retiree health and pension (fully loaded)" reflects present value of OPEB/retiree health costs if fully funded, as well as funding pension using a 5.0% discount rate instead of actuarially derived pension fund liability calculation rate of 7.75%



A Maintenance cost per revenue hour after management actions applied to all L264 garages is \$42

Bus Maintenance Fully Loaded Cost per Revenue Hour (L264 Garages*)



*Cost figures do not include areas without L264/Alliance presence (Admin. and No. Cambridge Carhouse); includes Everett Bus Shop and excludes both Non-Revenue Shops and fuel costs; Annual run-rate (7/1/17) figures also include wage costs associated with transfer of employees from capital to operating budget at Everett Bus Shop (\$3.2M regular wages, \$0.5M OT, \$1.8M cash fringe)

[^]Based on average of innovation proposals received in March of 2017 from First Transit and TransDev to operate maintenance at Arborway and Quincy garages
Note: Includes fully loaded retiree health and pension costs



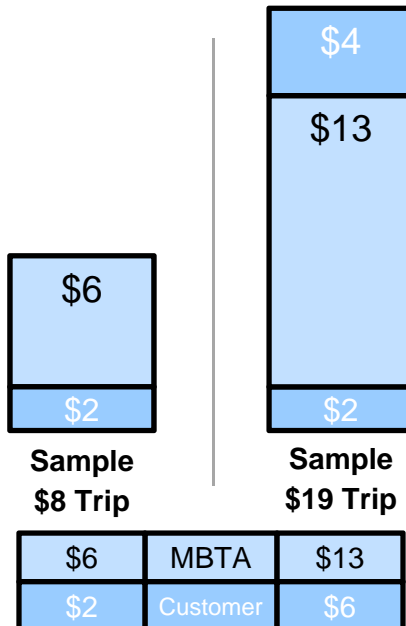
Focus on the customer



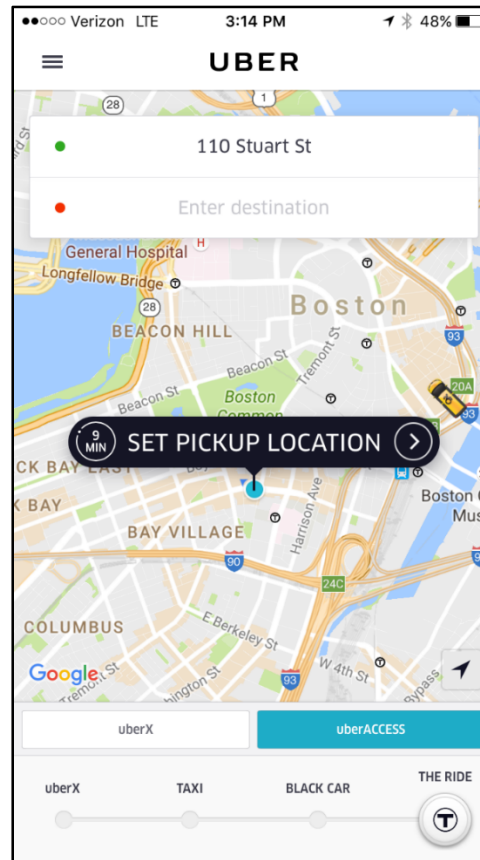
Focus on the customer: Uber/Lyft Service has been available to RIDE customers since October

Pricing

Customer pays first \$2, the MBTA pays next \$13, and the customer pays remainder of the trip's cost



Apps



Ordering Options



**Call-In
Ordering**



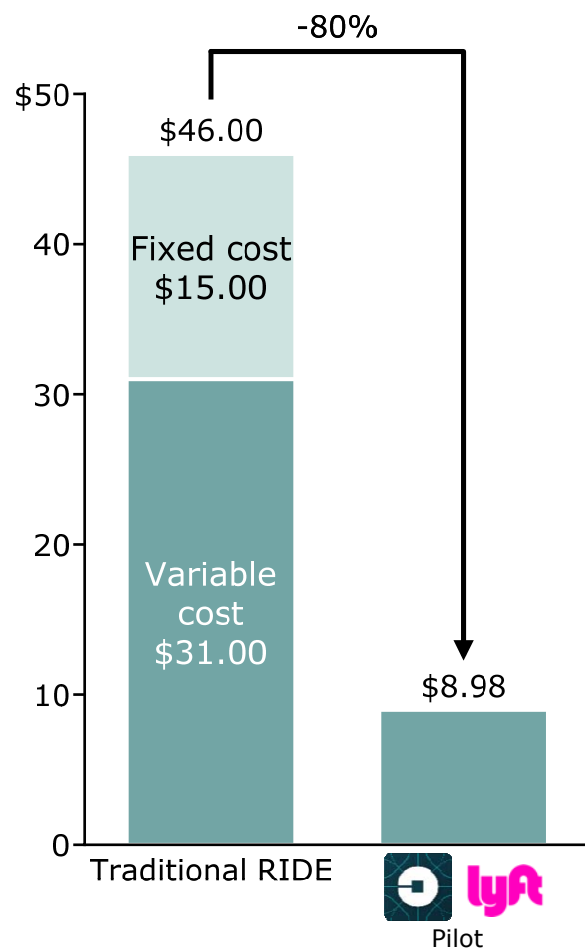
**Provided
Smartphones**



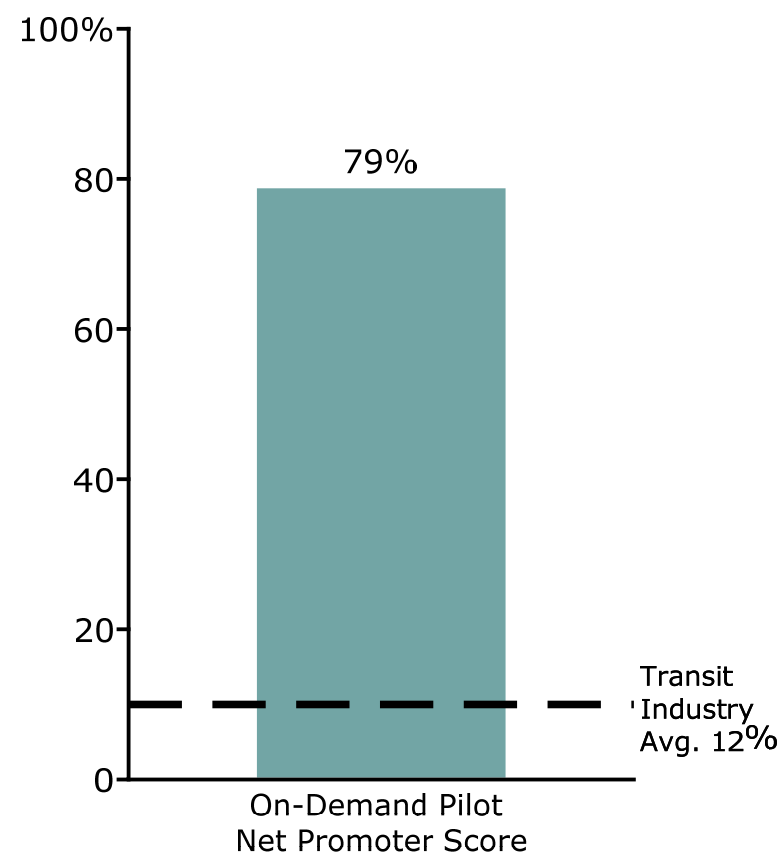


Focus on the customer: RIDE Modernization

**Average Cost
per Trip**



**Customer Satisfaction
(Net Promoter Score)**





**Focus on the customer:
Targeted expansion of core service**

☰ Menu	The Boston Globe	Metro	Breaking: US appeals court upholds travel ban decision
Feds OK Green Line extension costs, securing project's future			



**Green
Line
Extension**



**Commuter
Rail**

☰ Menu	The Boston Globe	Metro	Nominate Now	Top Places to Work
MBTA breaks ground on Blue Hill Avenue station				

☰ Menu	The Boston Globe	Metro	Nominate Now	Top Places to Work
Silver Line service to Chelsea to begin next spring				



**Silver
Line**

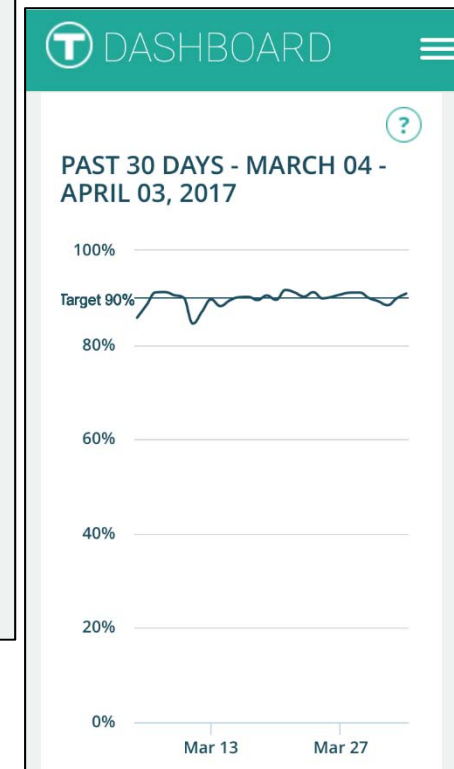
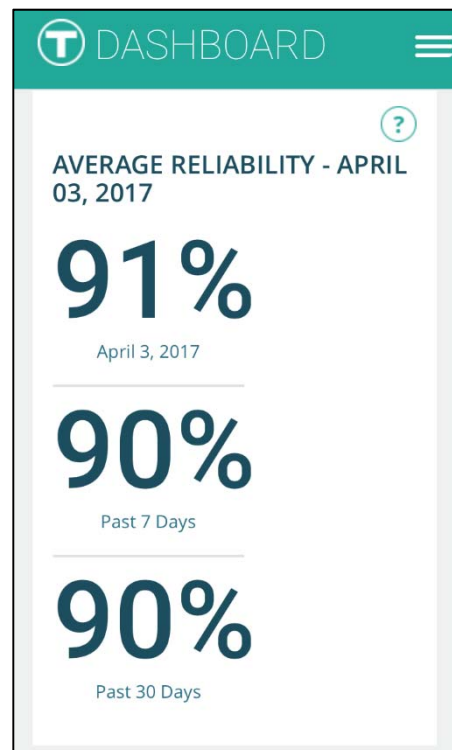


**Focus on driving service improvement:
Performance metrics published daily at www.mbtackontrack.com**

COMMUTER RAIL

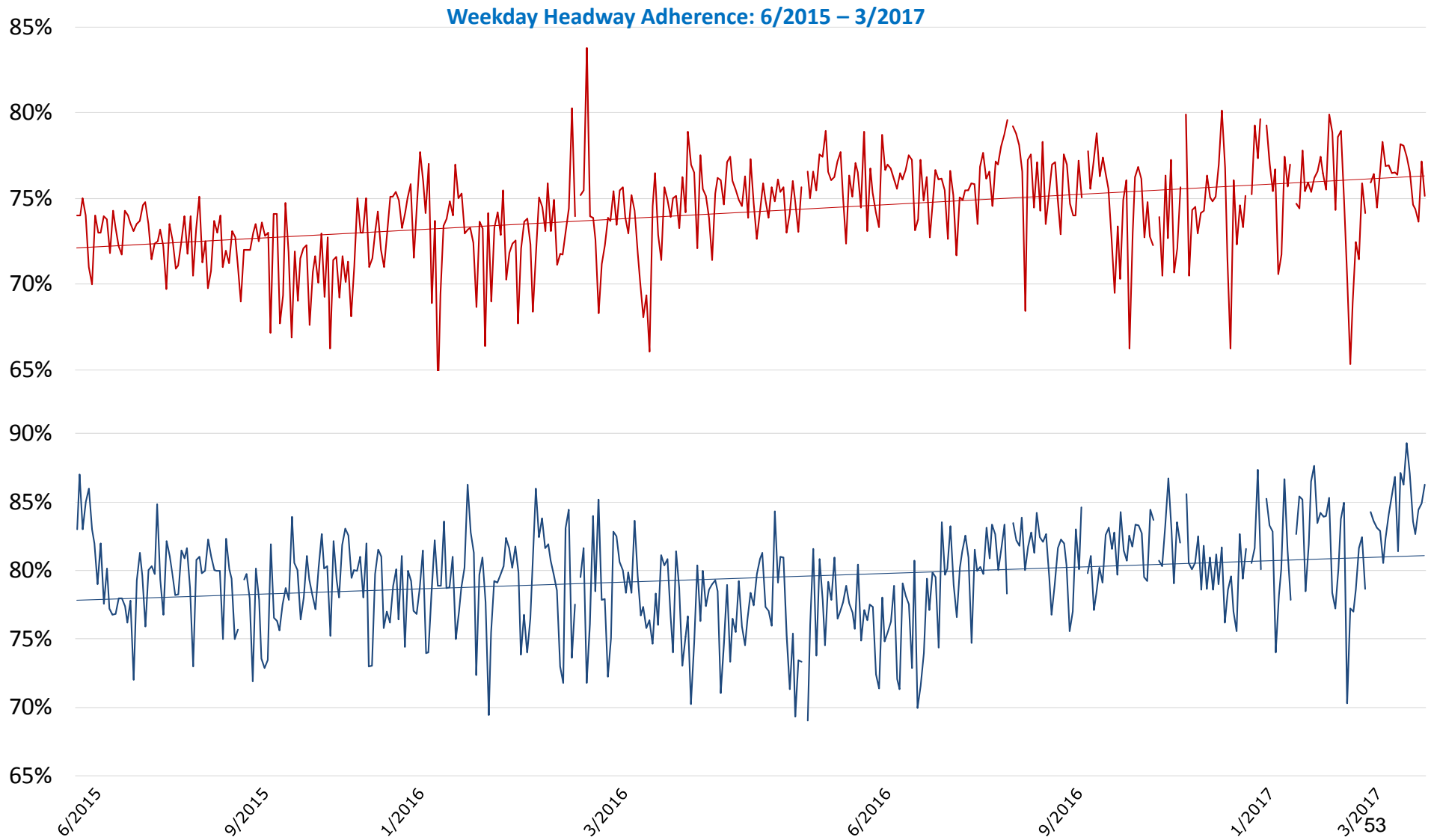


SUBWAY





Focus on driving service improvement: Core system reliability





Focus on the customer: Implementing a new automated fare collection system (AFC 2.0)

- **Improve customer experience**
 - Speed up buses by 10% by allowing all door boarding everywhere
 - Easier to pay with phone, auto reload, large retail reload network, cards available everywhere
 - Payment standardized across Bus, Subway, Commuter Rail, Ferries, the RIDE, and private carriers
 - All gates more accessible
- **Allow MBTA to focus on fare policy, fare enforcement, not maintenance of fare equipment**
 - Align incentives over long term with Design-Build-Finance-Operate-Maintain model
 - Improve ability to collect all fares
- **On track for award in Q2 of FY18, revenue service in FY21**



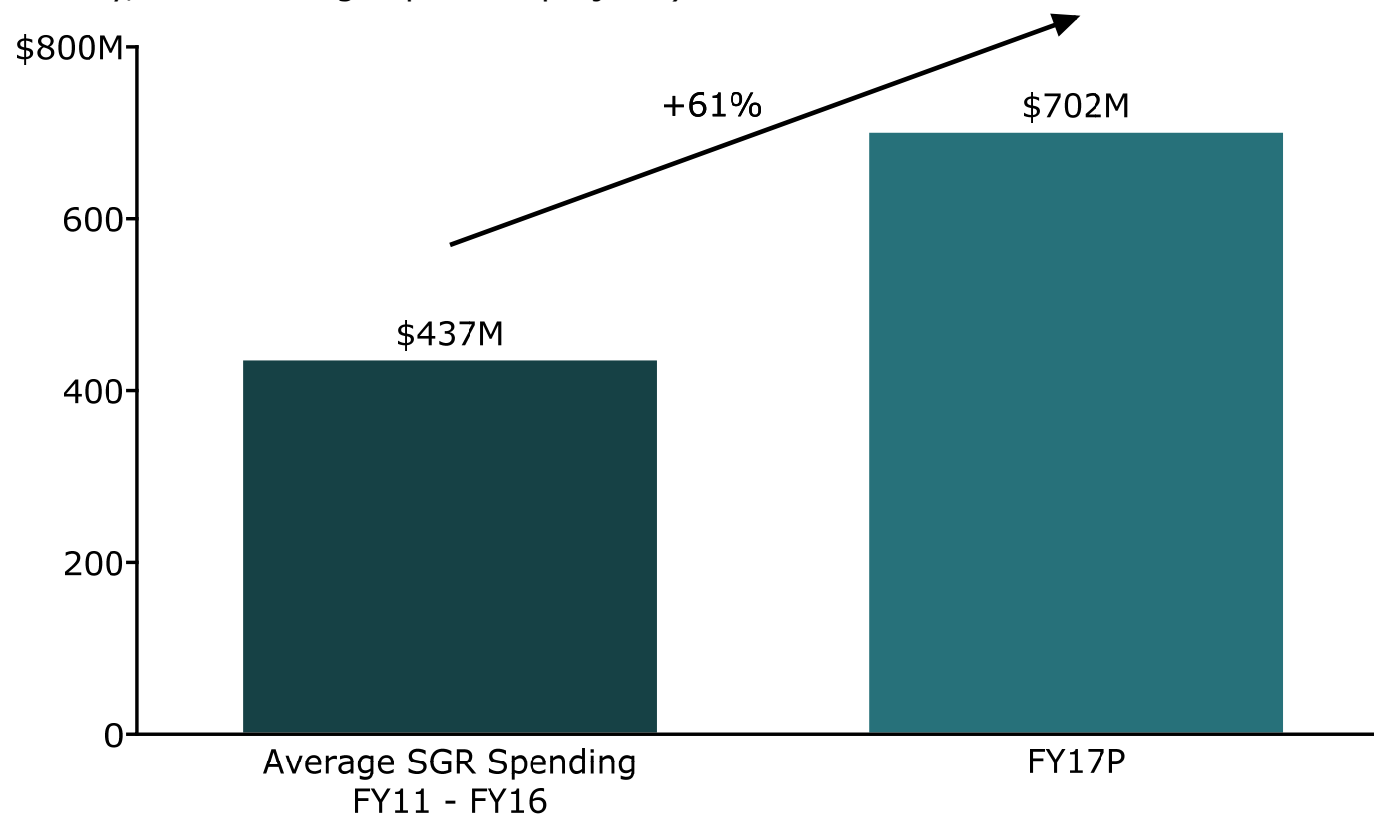


Key Challenge: Accelerate Capital Delivery



Accelerating capital delivery: FY17 State of good repair (SGR) investment up 61% from 6 year avg.

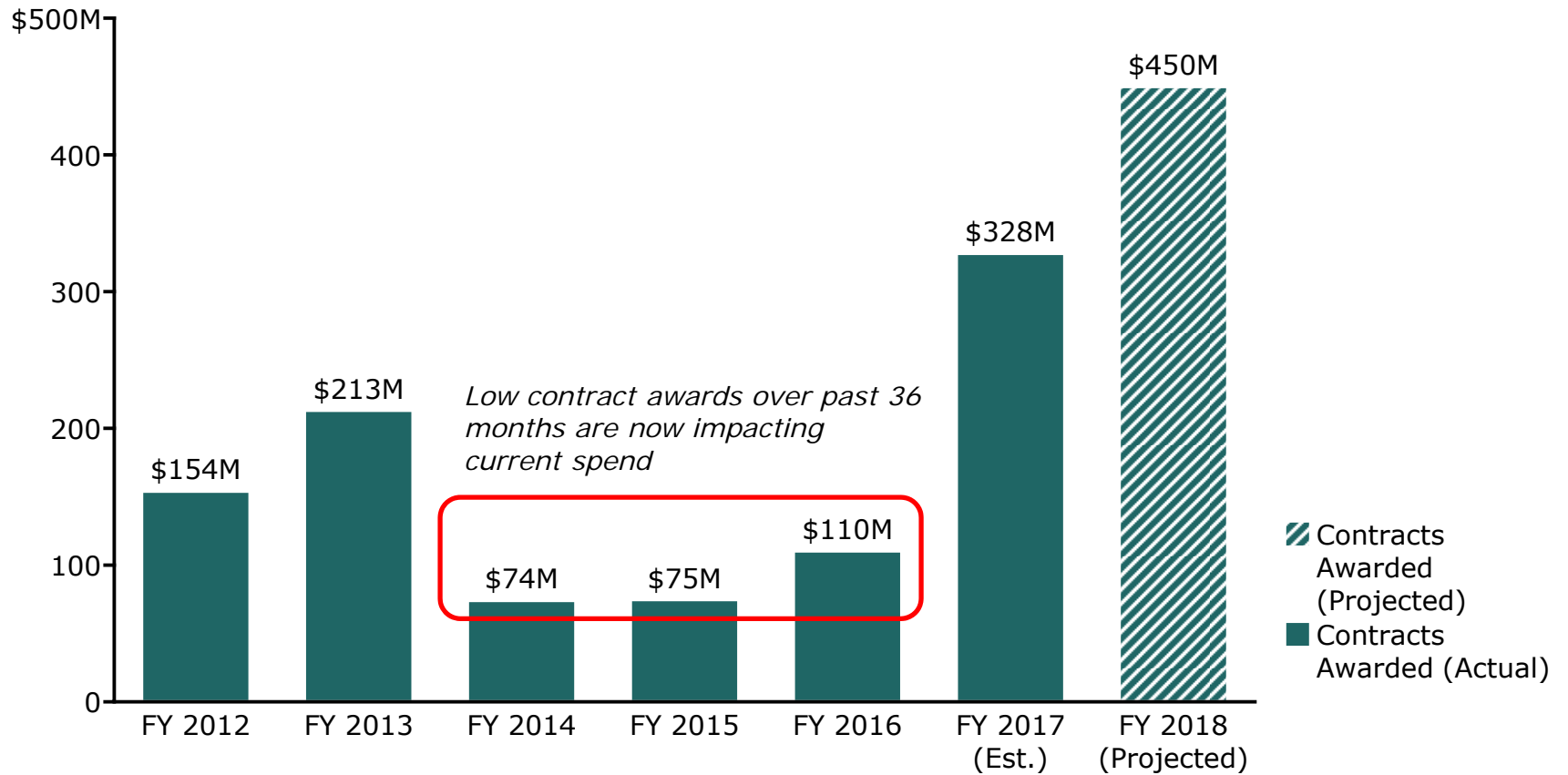
MBTA Capital Spending
(SGR only, not including expansion projects)





Accelerating capital delivery: MBTA FY17 goal is to award 3x more contracts than FY14-16

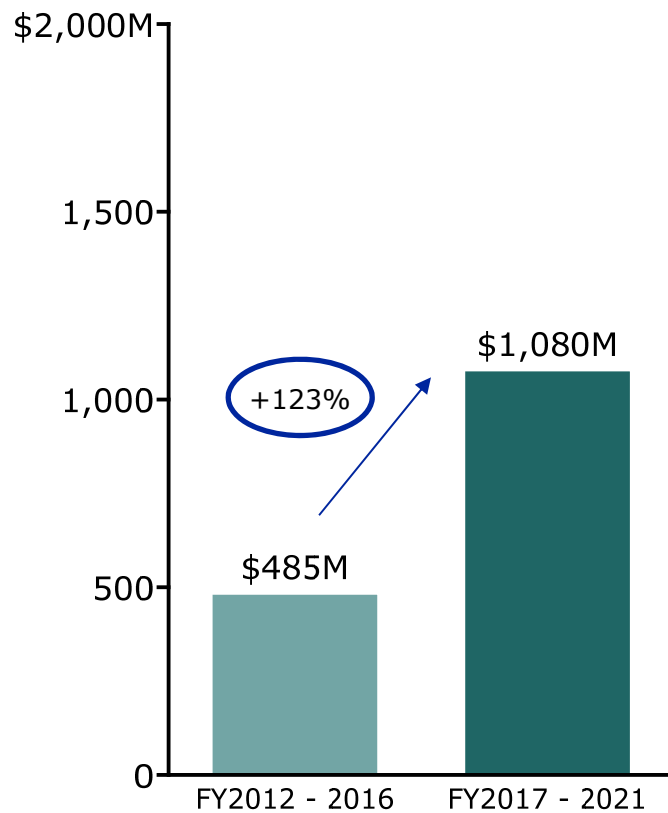
Dollar Value of Contracts (\$M)



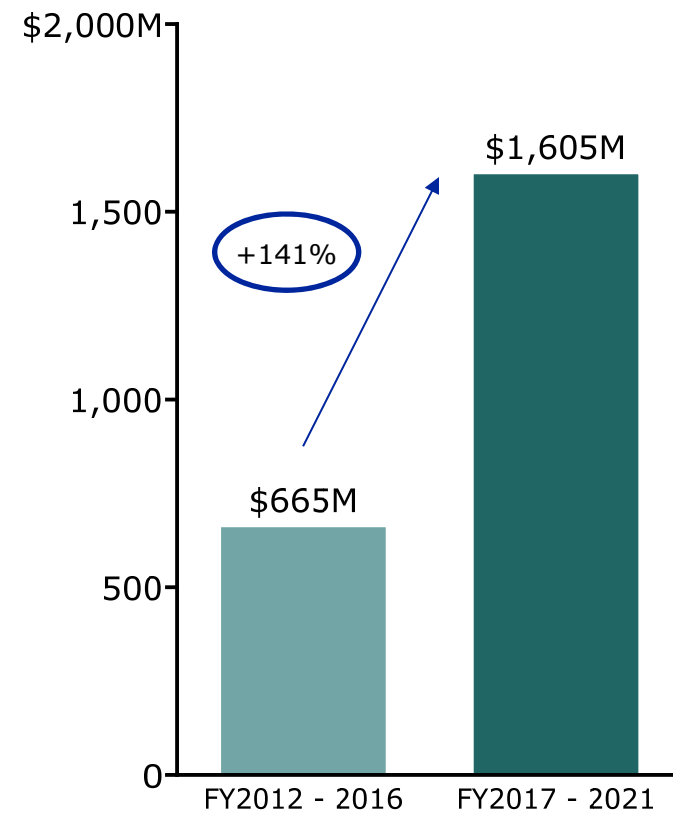


Capital delivery strategy: 5YR Capital Plan doubles investment in track/power signals and vehicles

Track, signals, and power spending



Revenue vehicle spending



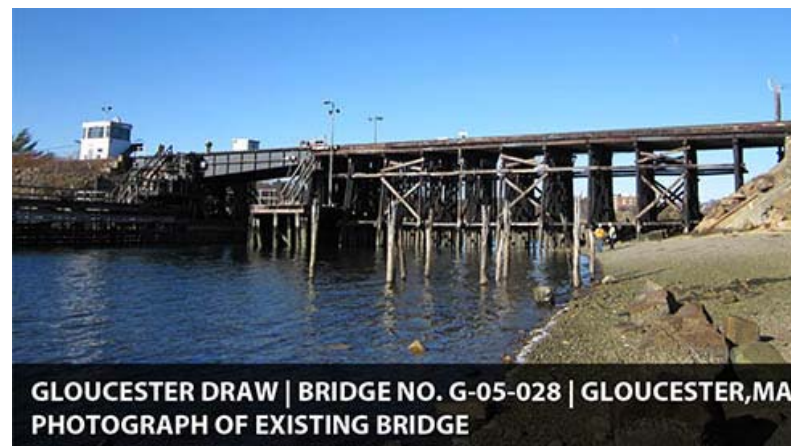
Source: DOT and MBTA internal estimates of available sources and applicable uses; Division initial estimates of program sizes

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Accelerating SGR capital delivery: \$50M Gloucester drawbridge will go out to bid within 2 months

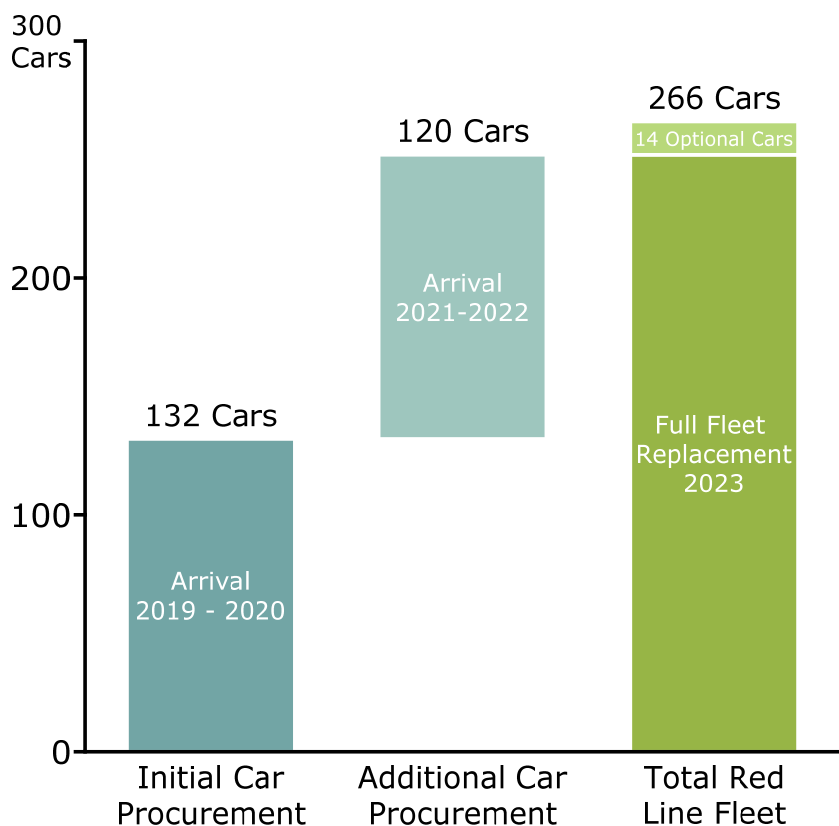
- Replacing the 106-year-old Annisquam River drawbridge is example an SGR investment in core system
- First identified as past its useful life in 2010, drawbridge critical to Newburyport / Rockport line
 - Transports CR passengers on the Rockport line
 - An average of 26 trains pass over the bridge on a daily basis
- Trains often delayed during the summer as rails expanded in the heat and had to hosed down with water
- \$50M project will modernize the drawbridge over 4 years
 - Wooden trestles and piles replaced with concrete and steel
 - New mechanical and electrical components





Capital delivery strategy: Full Red Line fleet replacement positions the MBTA for long-term success

Red Line Fleet CRRC Procurement



Red Line Subway Car





Backup



FMCB goal:
Deliver a balanced MBTA operating budget

Under Section 203 of Chapter 46 of the Acts of 2015, the FMCB may:

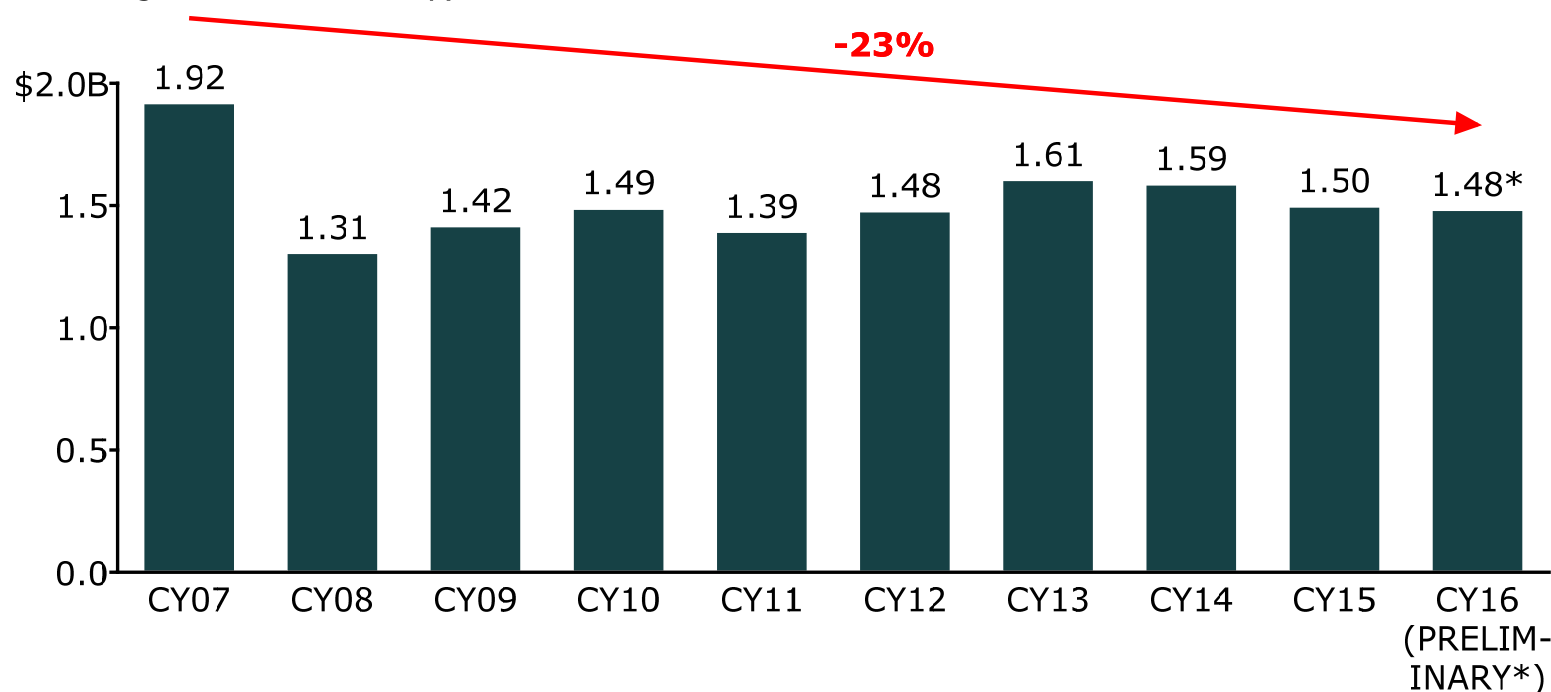
“Establish 1- and 5-year operating budgets, beginning in fiscal year 2017, which are balanced primarily through a combination of internal cost controls and increased own-source revenues”



MBTA pension assets have declined by 23% over last 10 years...

PRESENTED AT FMCB
JUNE 2016

Year-end MBTARF Net Assets: Market Value
(not including unfunded liability)



**Market
Funded % 92%**

58%

*Preliminary estimates as of 5/1/2017

Source: MBTA Pension Fund Data; MBTARF Annual Reports

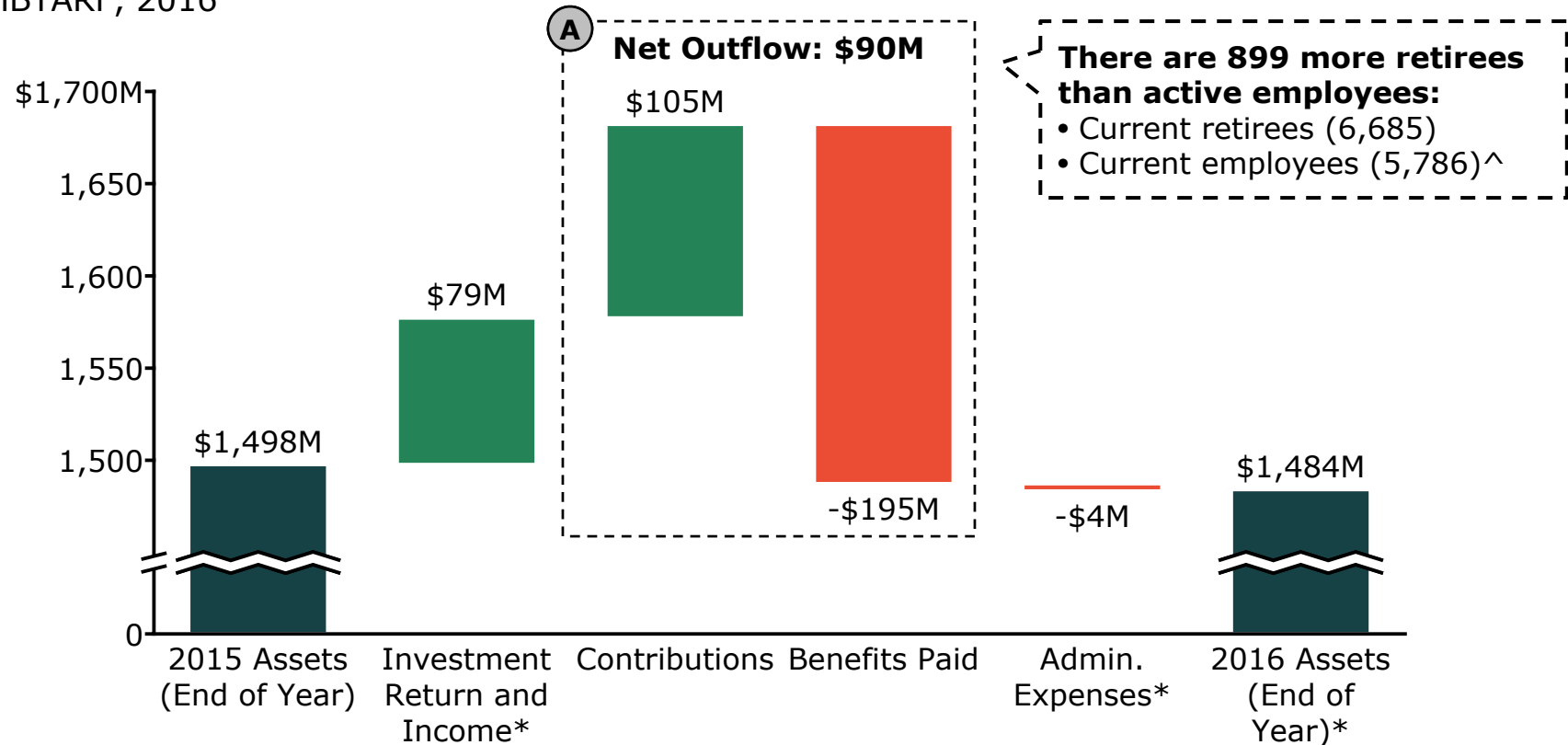
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Annual benefit payments now nearly double contributions

PRELIMINARY 2016

Total Additions and Deductions from the MBTARF, 2016



*Preliminary estimates as of 5/1/2017

^Current retiree and active employee counts are preliminary, will be confirmed by 12/31/16 valuation when complete

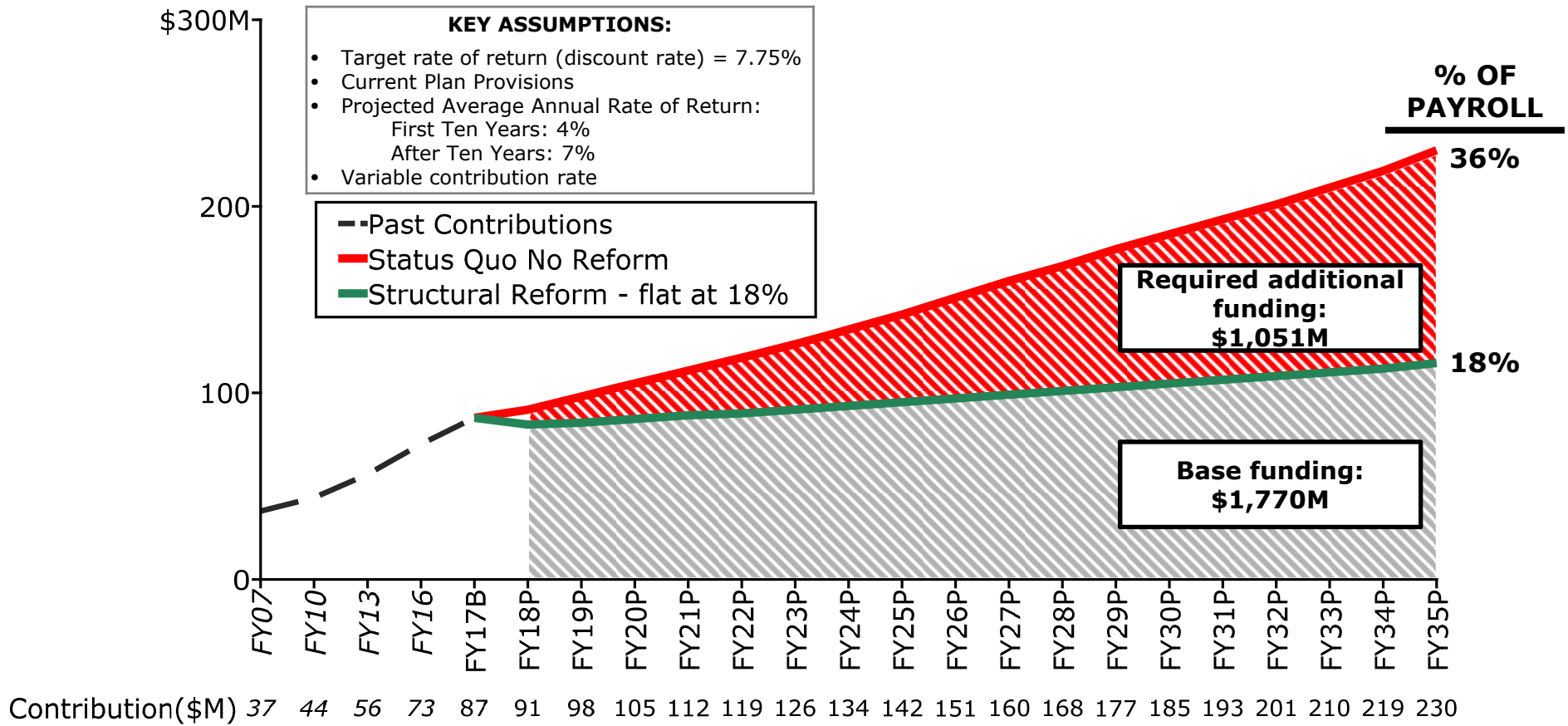
Source: MBTA Pension Fund Data; MBTARF Annual Reports

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Without action, MBTARF could require \$3B in taxpayer funding over next 20 years

MBTARF Contribution Scenarios





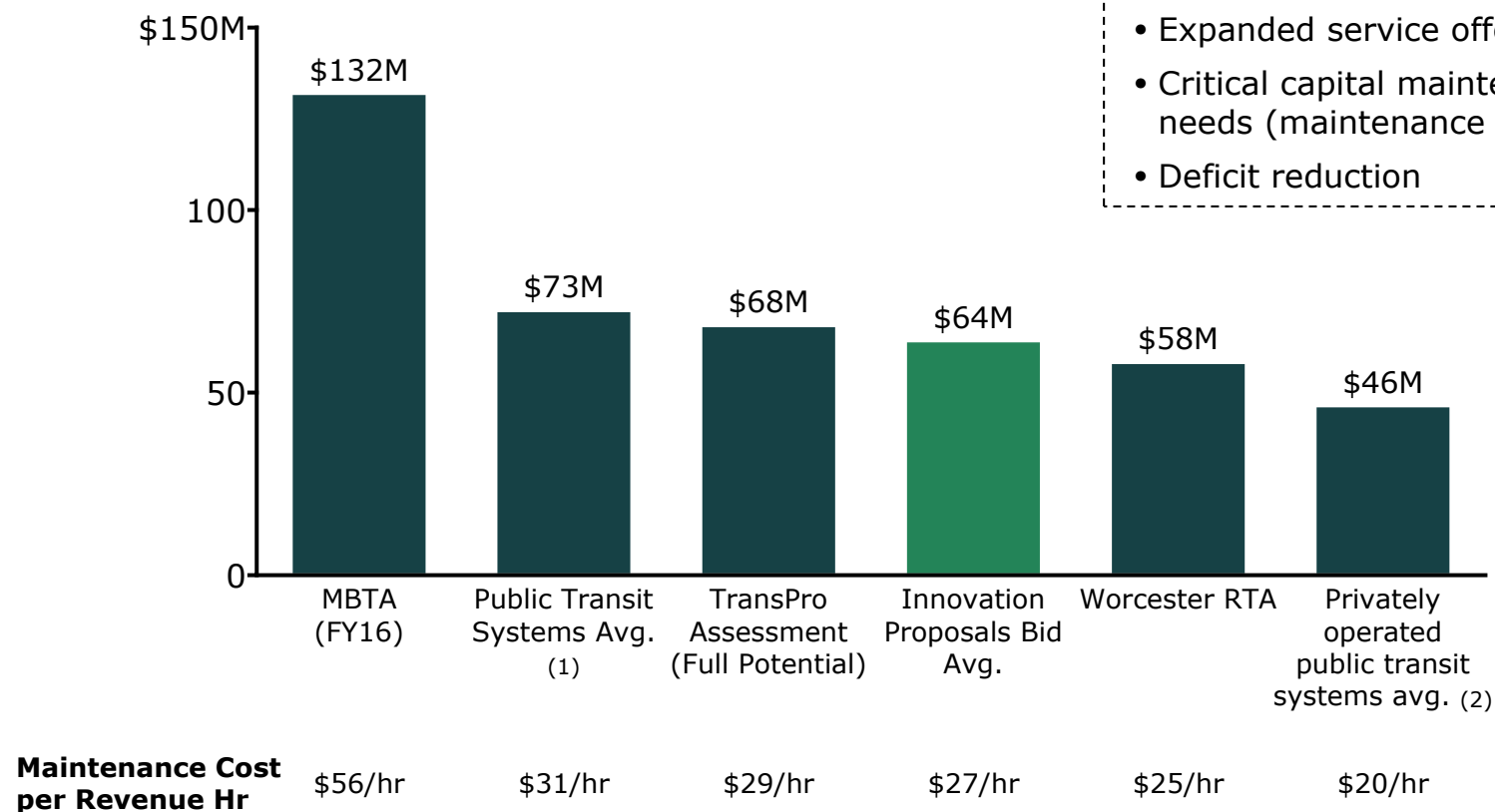
Modernizing the MBTA through flexible contracting: Bus maintenance

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



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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Private sector v. MBTA maintenance model differences: Productivity example – “Working Supervisors”

LEGACY MBTA OPERATING MODEL

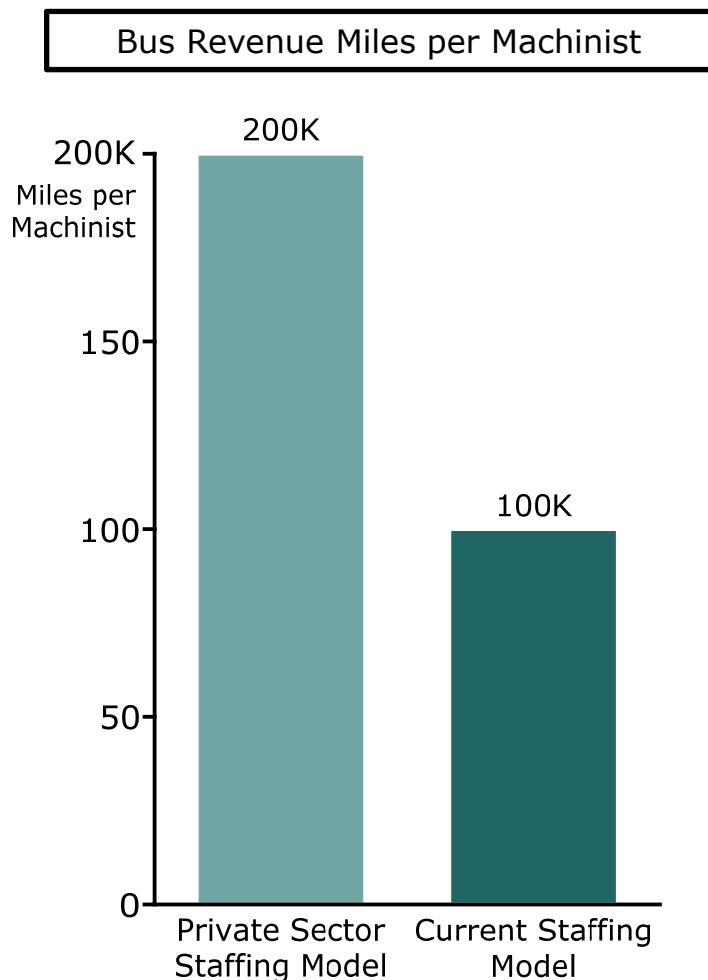
- No executive non-union managers staffed at the garage level
- Union supervisors (foremen) on the floor
- Work rules and workplace practices specifically prevent foremen and asst. foremen from performing machinist work
- **ARTICLE XXXIV – BARGAINING UNIT WORK:**
“A. It shall be Authority policy not to permit Foremen and Assistant Foremen to do [L264] bargaining unit work, except by way of assistance or instruction.”

MODERNIZED OPERATING MODEL

- Executive non-union supervisors on the floor, driving workflow
- All supervisors are “working supervisors”
- Supervisors work alongside machinists to complete tasks / pitch in where needed
- Working supervisors model keeps supervisor skills sharp and helps to balance staffing needs
- Supervisors / machinists cross-trained in all tasks



Bus maintenance productivity comparison Public sector v. private sector



- In private sector model, executive non-union managers and supervisors drive productivity in garages
 - Supervisors are cross-trained and assist machinists in completing tasks
 - Machinists staffing is based on 200K miles per machinist (2x the MBTA staffing model)
 - Cabot garage example:
 - Annual mileage: 4.5M
 - MBTA model: 45 machinists
 - Private sector: 23 machinists



MBTA bus operations and maintenance: Expansion service model

MBTA contracting with private bus company to run Winthrop routes 712/713

- Winthrop service has been contracted out by MBTA since 1991
- Private contractor (Paul Revere) has traditionally run service using own fleet

New model mirrors national best practices for contracted bus service

- MBTA will provide 6 New Flyer buses to private contractor to operate and maintain
- Service Level Agreements govern performance and maintenance
- Private company employees operate and maintain buses
- Contract runs for 4 years with up to 2 option years
- Fixed price contract caps costs at 2% annual growth over contract period

Consistent with the L589 12/19 agreement, the MBTA can utilize this model for all expansion bus service in the future


- Contract terms provide cost stability
- Assets are owned by MBTA while operated and maintained by private company





MBTA to provide 6 New Flyer Xcelsior XDE40 FT buses



Maintenance Requirements: Private Operator To Use Daily/Weekly/Monthly Checklists Specified By OEM

DAILY CHECKLIST	
	
Daily Preventive Maintenance	
<p>2.6.6. Floor Covering</p> <div style="border: 1px solid black; background-color: yellow; padding: 2px; width: fit-content; margin: 5px 0;">CAUTION</div> <p>DO NOT clean the vehicle interior with pressure washing equipment. This type of cleaning causes excessive soaking of the floor covering and can result in separation of the rubber floor covering from the floor substrate, warping or deterioration of the floor substrate, and possible damage to floor mounted equipment such as floor heaters.</p> <p>Inspect the interior flooring for cleanliness on a regular basis depending on operating conditions. Exposure to salt, sand, or slush during the winter months may require</p>	<p>2.6.7. Crankcase Breather Tube</p> <p>Check breather tube for kinks, dents, or other damage. Also check inside of tube for sludge, debris, or ice formation (in freezing conditions). Clean or replace tube as required.</p> <p>2.6.8. Aftertreatment Exhaust Piping</p> <p>Inspect exhaust aftertreatment system for leaks cracks, and loose connections. Inspect for leaks at V-band connections and tighten clamps as necessary.</p> <p>2.6.9. Air Intake Piping</p> <p>Inspect air intake tubes and hoses, for evidence of wear, punctures, or other damage. Inspect for loose connections and</p>

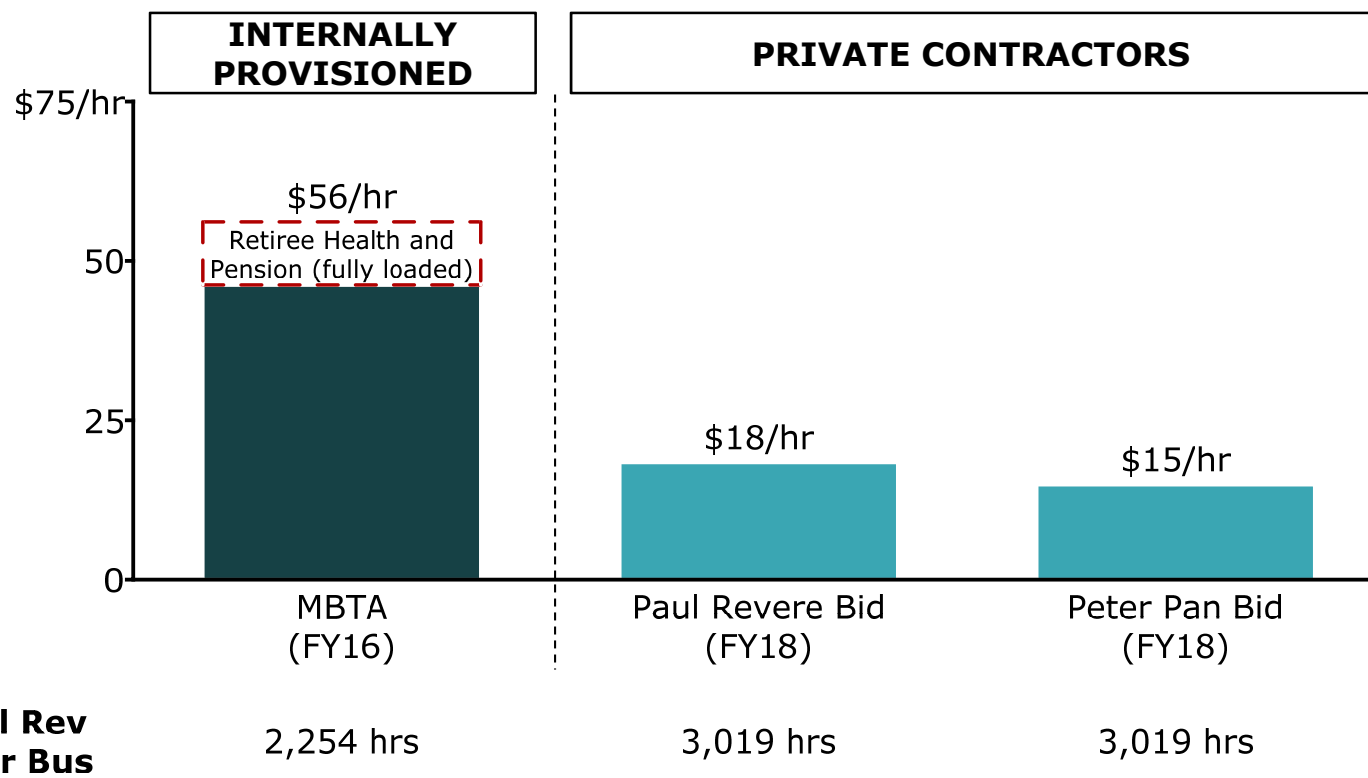
WEEKLY CHECKLIST	
	
Weekly Preventive Maintenance	
<p>2.7. Weekly Preventive Maintenance</p> <p>2.7.1. Radiator</p> <p>Test the function of the fan reverse switch and LED indicator on a weekly basis or any time service work is being performed in the engine compartment. Operating the fan reverse switch will not only clear debris from the radiator core, but will also confirm operation of the LED indicator which is used to display diagnostic fault codes. If any active fault codes are indicated, refer to Section 6 of this manual for troubleshooting and vendor information.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Ensure that the support arm magnet contacts and retains the support arm. Adjust magnet position as required. <input type="checkbox"/> Ensure that the support arm hooks pull out smoothly, stop at the stop screw, slide easily into the stowed position, and self stow on the magnet when released. <input type="checkbox"/> Check the pivot bolt assemblies to ensure they are tight. <input type="checkbox"/> Check pivot bolt bronze oilite bushings for wear or cracks. Replace as necessary. <input type="checkbox"/> Check that all mounting bracket fasteners are tight, including the hardware for the

MONTHLY CHECKLIST	
	
Monthly Preventive Maintenance	
<p>2.8.2. Air Tanks</p> <p>It is recommended that all air tanks be drained monthly and a record of the contents collected be recorded. Performing these inspections on a regular basis will establish trend monitoring to assess the performance of the compressor (excessive oil passing) and air dryer (saturated desiccant cartridge).</p> <p>The following factors can influence that amount of water collected and should be taken into consideration before making an assessment:</p> <ul style="list-style-type: none"> <input type="checkbox"/> An outside air source was used to charge the system and did not pass through the air dryer. <input type="checkbox"/> Exceptionally high air usage, exceeding 25% compressor duty cycle due to either heavy accessory demand or system leakage <input type="checkbox"/> Daily temperature range exceeds 30°F (17°C) resulting in condensation. Under these conditions the presence of small amounts of moisture is normal and should not be considered as an indication that the air dryer is not functioning properly. <p>NOTE: <i>A small amount of oil in the system is not unusual and should not be considered a reason to replace the desiccant cartridge. Oil stained desiccant can function adequately.</i></p>	<p>5. Evaluate volume collected as follows:</p> <ul style="list-style-type: none"> a. More than one unit of oil in a 30 day period will require the desiccant cartridge to be changed and is considered cause for further inspection of the air compressor. Worn pistons or rings will allow oil bypass and may require repair if amount of oil bypassed is excessive. Also inspect compressor discharge line for excessive carbon buildup. b. More than one unit of water or emulsion will be cause to conduct an air system leakage test. Refer to Section 8 of this Service Manual for procedure. c. More than five units of water in a 30 day period indicates unsatisfactory air dryer performance. Replace air dryer desiccant cartridges. <p>2.8.3. Fire Suppression System</p> <ul style="list-style-type: none"> <input type="checkbox"/> Open access door behind streetside light panel, opposite the exit door, to access gauge. See "Fig. PM-1: Fire Suppression Cylinder Inspection" on page 19. <input type="checkbox"/> Check pressure gauge on agent cylinder to ensure it is in the operating (green) range. <input type="checkbox"/> Check all nameplates and instructional labels for legibility. <input type="checkbox"/> Check physical condition of all components for mechanical damage and security of mounting



Market Pricing: Lifecycle maintenance Costs New Flyer Xcelsior Diesel-Electric 40 Ft. Transit Bus

Maintenance Cost per Revenue Hour



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; MBTA internal costs only includes a portion of total bus G&A expense and reflect pure cost only (no profit margin)
Source: MBTA Internal Data

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Bank Account Consolidation and Yield Optimization (cont'd)

- Reduced the number of open bank accounts from 72 to 29
- New treasury management platform consolidates all banking information
 - Balances and transactions post automatically, providing instant real-time information
 - No more logging into individual bank websites to check balance or send payments
 - Transaction info automatically posts to annual cash forecast, giving the T immediate insight to liquidity

Excel-based Manual Reporting

	A	B	C	D	E	F	G	H
1								
2	SANTANDER BANK							
3	DAILY CASH SHEET							
4	Date:	6/13/2016						
5	Mon Tue Wed Thu Fri							
6								
7		REG CASH				BOND PROCEEDS		
8								
9	OPENING BALANCE		2,434,392				612,044	
10								
11	MMDT et al							
12	BUCKETING							
13	FEDERAL FUNDS							
14	WIRE/ACH/AR							
15	WIRE/ACH/AR							
16	COMM RAIL							
17	GREYSTONE							
18	BOND		8,761	SANTANDER BONDS				
19								
20	SUBTOTALS		2,443,153				612,044	
21								
22	A/P		ACH		8,208		CHECKS	
23	BC/BS		PAYROLL				ACH'S	
24	FED TAX		POLICE				WIRE	
25	FICA		BOND				LAND ACQUISITIO	

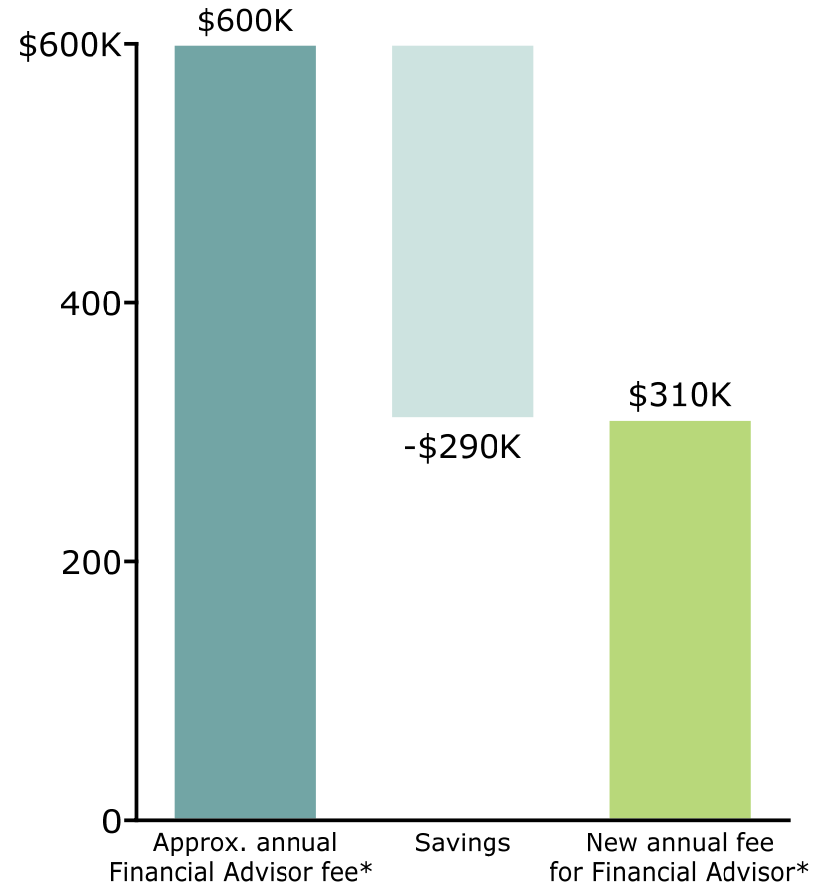
REVAL Automated Reporting

Business Unit		Account	OB 05/24/20...	T 05/24/20...	CB 05/24/2...	OB 05/25/20...	T 05/25/2...	CB 05/25/2...
BOA								
UNRESTRICT	Parking Violations-	B of A	0.00	0.00	0.00	0.00	0.00	0.00
UNRESTRICT	Prepaid Card-	B of A	24,275.02	0.00	24,275.02	24,275.02	0.00	24,275.02
			I	24,275.02				
CITIZENS								
RESTRIC-IN	Force Acct-	Citizens	898,309.55	0.00	898,309.55	898,309.55	0.00	898,309.55
RESTRIC-IN	Security Deposit-	Citizens	5,980,399.11	0.00	5,980,399.11	5,980,399.11	0.00	5,980,399.11
UNRESTRICT	Operating-	Citizens	2,041,303.88	0.00	2,041,303.88	2,041,303.88	0.00	2,041,303.88
			I	8,920,012.54				
EASTWEST								
RESTRIC-IN	2014A Proceeds-	East West	0.00	0.00	0.00	0.00	0.00	0.00
RESTRIC-IN	2015A Proceeds-	East West	35,425.63	0.00	35,425.63	35,425.63	0.00	35,425.63
UNRESTRICT	Cert of Deposit 1-	East West	0.00	0.00	0.00	0.00	0.00	0.00
UNRESTRICT	Cert of Deposit 2-	East West	0.00	0.00	0.00	0.00	0.00	0.00
UNRESTRICT	Op Contingency-	East West	82,947,362.41	0.00	82,947,362.41	82,947,362.41	0.00	82,947,362.41
UNRESTRICT	Operating Acct-	East West	48,054,591.73	0.00	48,054,591.73	48,054,591.73	0.00	48,054,591.73



MBTA recently rationalized relationship with its Financial Advisor, saving ~\$290K per year

- Historically, MBTA relied on Financial Advisor for a variety of services:
 - Debt service reserve fund reporting
 - Investment management and reporting
 - Swap valuation and reporting
 - Build America Bond subsidy filings
 - One-off projects (i.e. FDA amendments / terminations)
- MBTA terminated investment management and reporting service relationship
- MBTA can perform function in house with current staff and resources
 - Established trading relationship with 6 banks
 - Investing in line with Investment Policy
- New arrangement will save the roughly \$290K per year or ~50% of current spend (approx. \$600K)
- Financial Advisor will continue to perform key functions and work closely with MBTA staff



*Annual fee to Financial Advisor changes based on MBTA investable assets. Draft for Discussion & Policy Purposes Only



**FY18 Budget Package (April 2017):
Target bus maintenance full year cash savings of \$21M**

(\$ Millions)

		FULL-YEAR RUN-RATE IMPACT	TARGET DATE	ESTIMATED FY18 IMPACT
	BASELINE STRUCTURAL DEFICIT	(\$42)		(\$42)
INCLUDED IN FY18 ITEMIZED BUDGET	Hybrid In-Station Customer Service Model	\$6	8/1/2017	\$6
	Four (Focus40) Garage RFPs	\$11		
	Cabot Garage Efficiency	\$5		\$8
	Everett Bus Shop	\$5		
	Chelsea Silver Line	(\$5)	1/1/2018	(\$3)
	Strategic Operations Hires	(\$7)	7/1/2017	(\$7)
	SUBTOTAL - Adjusted Structural Deficit	(\$27)		(\$38)
FY18 DEFICIT SPENDING	The RIDE	\$3	7/1/2017	\$1
	Commuter Rail	\$5		\$5
	CR Revenue Expansion and Advertising	\$4	1/1/2018	\$2
	STRUCTURAL DEFICIT	(\$15)		(\$30)
	TARGET PAY-GO TRANSFER AS OPEX SAVINGS ACHIEVED (\$37M – STRUCTURAL DEFICIT)	\$22		\$7

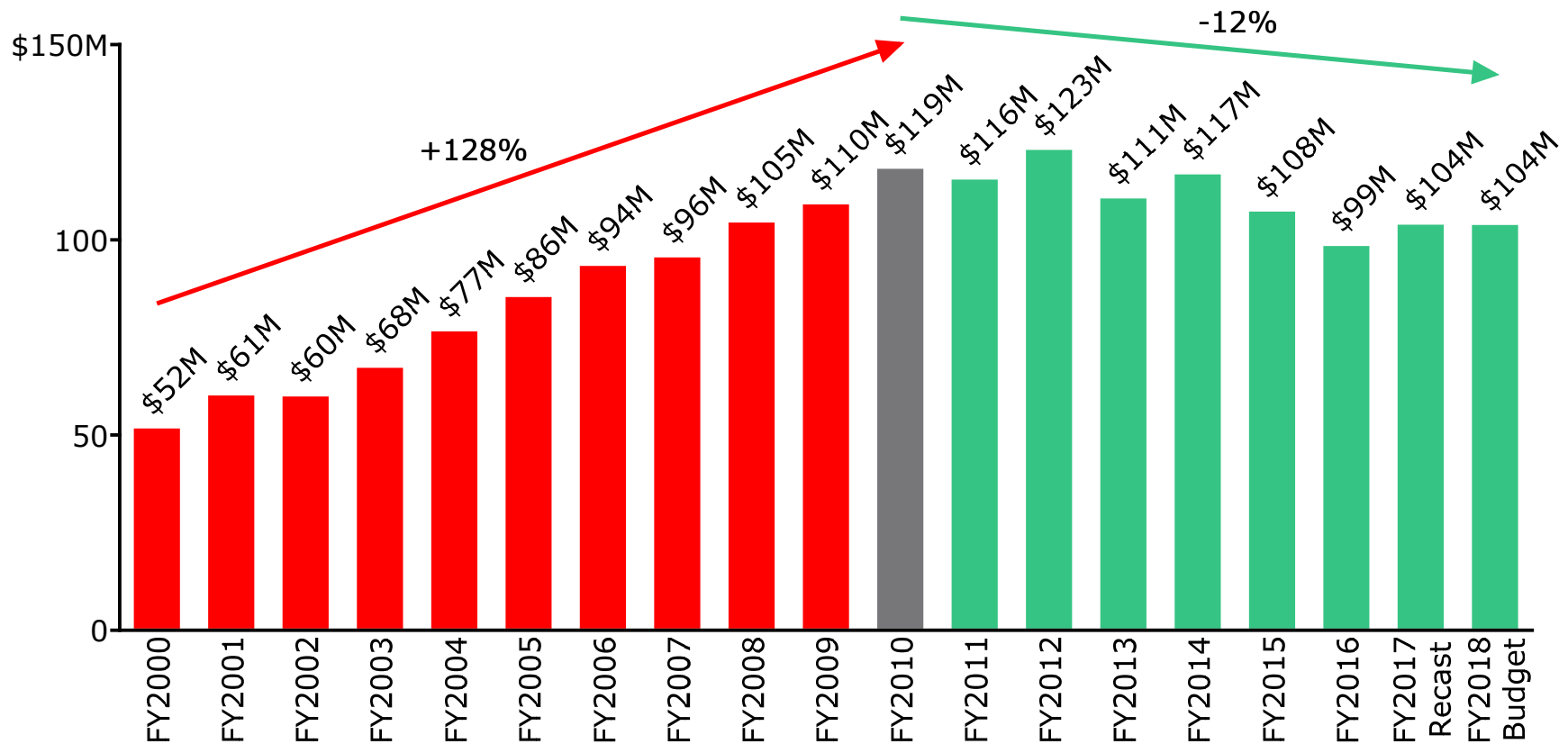


MBTA stabilized health care cost growth after moving from collectively bargained benefits to GIC in FY2010

PRE-GIC, HEALTH CARE COSTS WERE GROWING AT 9% PER YEAR

SINCE TRANSITION TO GIC BEGAN IN FY2010, COSTS HAVE DECLINED AT -2% PER YEAR

MBTA Net Health Care Costs, 2000-2018B

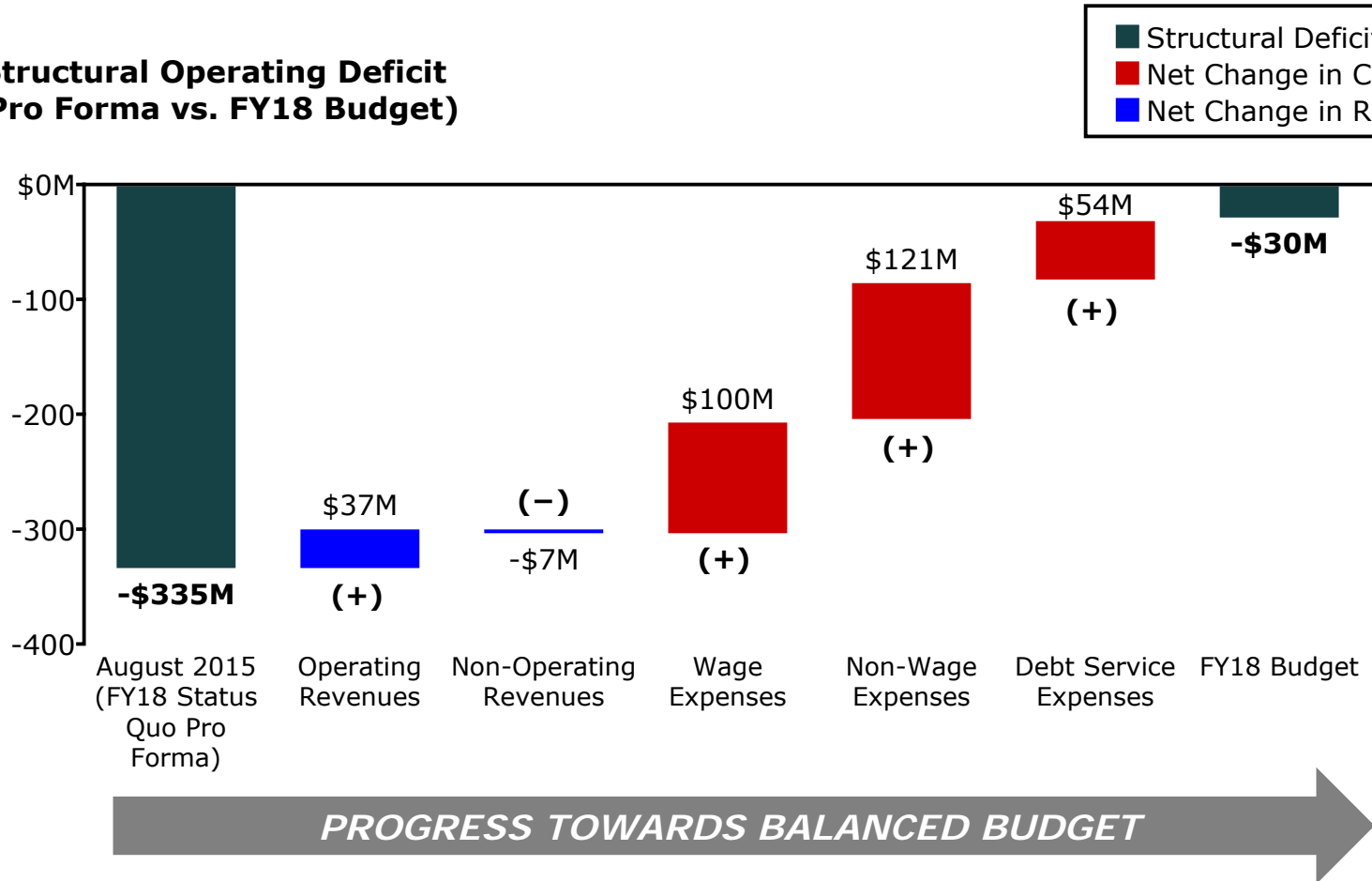


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Cost control has driven 85% of the reduction in FY18 projected deficit

MBTA Structural Operating Deficit (FY18 Pro Forma vs. FY18 Budget)



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Status quo FY18 Pro Forma (August 2015) vs. FY18 Budget approved April 2017

	(\$M)	STATUS QUO FY18 AUGUST PRO FORMA	FY18 BUDGET	\$ VARIANCE	% VARIANCE
REVENUES	Operating Revenues	\$707.4	\$744.1	\$36.7	5.2%
	Non-Operating Revenues	\$1,207.5	\$1,201.0	(\$6.5)	-0.5%
	Total Revenues	\$1,914.9	\$1,945.1	\$30.2	1.6%
EXPENSES	Wages, Benefits and Payroll Taxes	\$862.2	\$762.7	(\$99.5)	-11.5%
	Non-Wage	\$883.1	\$761.7	(\$121.4)	-13.7%
	Operating Expenses	\$1,745.3	\$1,524.4	(\$220.9)	-12.7%
	Debt Service	\$505.1	\$451.2	(\$53.9)	-10.7%
	Total Expenses	\$2,250.4	\$1,975.5	(\$274.9)	-12.2%
	Structural Deficit	\$335.4	\$30.5	(\$304.9)	-90.9%

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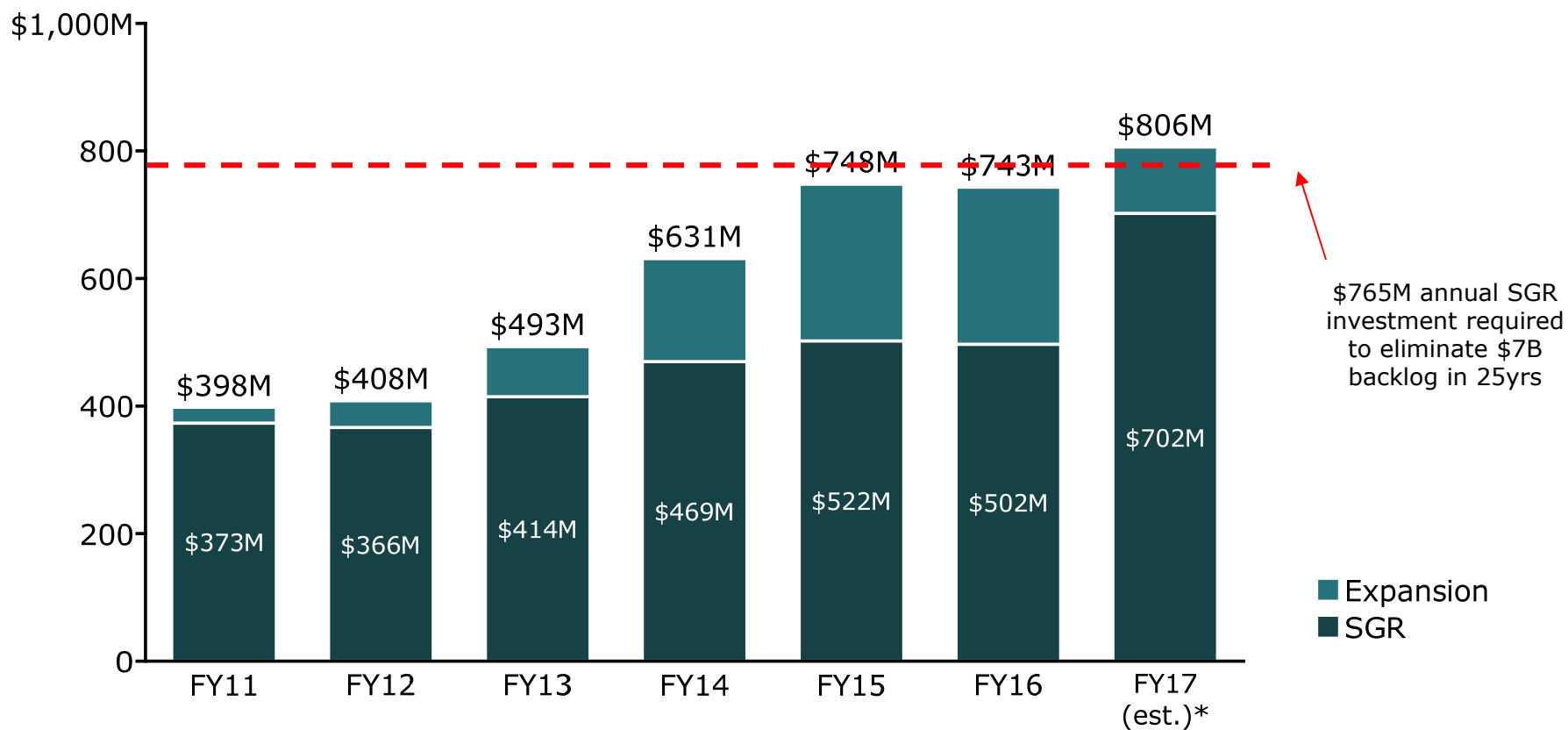
Janitorial Services Contracts

- 1. Effective September 1, 2016, MBTA began enforcing its janitorial services contracts according to their performance specification terms—resulting in approximately \$4 million in savings/year.**
- 2. Two janitorial contractors—ABM and SJ Services. After September 1, 2016 concerns arose about the quality of cleaning and employees' lack of healthcare on the SJ Services contract. The MBTA issued a Request For Responses (a re-bid of services) for the SJ Services contract, which tested the market for these services. During the re-bid process, MBTA received an unsolicited proposal from SJ Services requesting the opportunity to improve its performance.**
- 3. MBTA has resolved matters with SJ Services pursuant to a Performance Improvement Plan (PIP) which will remain in effect until June 30, 2018 and includes:**
 - 2 additional supervisors**
 - 70 additional hours of cleaning services/week**
 - 30 part time employees will become full time employees with health care benefits**
 - New direct penalty regime for key performance items**
 - Payment of additional \$300,000/year (total of \$375,000 through the June 30, 2018)**



Capital delivery strategy: MBTA had under invested in State of Good Repair (SGR)

MBTA Capital Spending



*FY17 spend numbers may increase due to additional processing of indirect labor costs on projects up until August 15th