Getting The MBTA Back On Track

FMCB

June 2017
Governor’s Special Panel On MBTA – April 2015 Findings

- Unsustainable Operating Budget
- Chronic Capital Underinvestment
- Flawed Contracting Processes
- Bottlenecked Project Delivery
- Lack of Accountability
- Ineffective Workplace Practices
- Lack of Customer Focus
- Organizational Instability
- Shortsighted Expansion Program

Winter 2015
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)
Operating budget stability
The fiscal challenge: Operating expenses not controlled

MBTA increased operating expenses by $470M between FY08 and FY15

Unlinked Trips Growth Rate

<table>
<thead>
<tr>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.7%</td>
<td>6.8%</td>
<td>-0.1%</td>
<td>0.3%</td>
<td>1.3%</td>
<td>-3.7%</td>
<td>-6.0%</td>
<td>3.7%</td>
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</table>

Opex Growth Rate

<table>
<thead>
<tr>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.7%</td>
<td>4.9%</td>
<td>3.6%</td>
<td>4.4%</td>
<td>6.2%</td>
<td>5.6%</td>
<td>4.6%</td>
<td>5.8%</td>
</tr>
</tbody>
</table>

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.mbtabackontrack.com/blog/65-ntd-ridership

Draft for Discussion & Policy Purposes Only
MBTA operating and debt service expenses
$2B annual

Currently Contracted
- Ferry & local bus $15M
  $499M
- The Ride $102M

Debt Portfolio
- Lease $5M
  $444M
- Capital Plan Principal and Interest $296M

Services delivered primarily by MBTA Internal Employees/Mgmt
- Other $10M
  $402M
- OCC & Training $19M
  $365M
- BUS Transportation $203M
- Rail maintenance $105M
- Power systems, MOW, signals $88M
- Transit Facilities Maint $72M
- Heavy rail transport $78M
- Bus maintenance $127M

Total FY16 = $1,948M

*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%

Expected Growth:
10.0% (Internal target)
3.5% (Legislative Cap)
0.7% (FY17P / FY16A Local Assessments)
0.6% (FY17P / FY16A Local Assessments)

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.
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*

- **Projected Structural Deficit** ($400M)
- **CAGR (%)** 4.4%
- **CAGR (%)** 1.6%

**CAGR (%)**
- **$2,500M**
- **$2,000M**
- **$1,500M**

**FY16B**
- 1,851
- 1,893
- 1,915
- 1,949
- 1,975

**FY17P**
- 2,021
- 2,135
- 2,250
- 2,340
- 2,402

**FY18P:**
- **$335M**

**FY19P**
- **$351M**

**FY20P**
- **$391M**

- **Total Expenses including Employee Transfer**
- **Total Revenue**

**Structural Deficit**
- **-$170M**
- **-$242M**
- **-$335M**
- **-$391M**
- **-$427M**

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

*Draft for Discussion & Policy Purposes Only*
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

<table>
<thead>
<tr>
<th>Year</th>
<th>Original # of Executives</th>
<th>Local 453</th>
<th>Steelworkers</th>
<th>Transit Executives Association</th>
<th>Resulting # of Executive Positions*</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>590</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/2000</td>
<td>-222</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/2001</td>
<td>-106</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12/2014</td>
<td>-80</td>
<td></td>
<td></td>
<td></td>
<td>182</td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
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</tbody>
</table>

Draft for Discussion & Policy Purposes Only
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/PRIA expenses and capital employees transferred in FY17. Energy costs forecast to be $8M less in FY17 than in FY16

FMCB / New Mgmt
August 2015
Since FMCB, own-source revenue up 70%
Cost control puts MBTA on track for Forward Funding goal: Dedicated revenues cover operating expenses

STATUS QUO FY17:20 PRO FORMA
August 2015

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

$305M improvement:
- $261M (85%) - lower costs
- $44M (15%) - higher revenue

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

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY17P</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRR</td>
<td>40%</td>
<td>43%</td>
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</table>

Draft for Discussion & Policy Purposes Only
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
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 than 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
Every dollar counts:  
End use of cash vouchers for purchasing

MBTA Operating Budget Materials and Services Spend

Source: MBTA Internal Data
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

<table>
<thead>
<tr>
<th># of Bank Accounts</th>
<th>$$ Interest Income</th>
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<tbody>
<tr>
<td>Prior to Consolidation</td>
<td>$2,750K</td>
</tr>
<tr>
<td>Post Consolidation</td>
<td>$3,400K</td>
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<tr>
<td>Current Interest Income</td>
<td>$4,600K</td>
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</table>
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
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
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

Crime fell in most categories — In 2016 there were fewer homicides, rapes and robberies. There were 217 fewer crimes overall

<table>
<thead>
<tr>
<th>Category</th>
<th>2016</th>
<th>2015</th>
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<tbody>
<tr>
<td>HOMICIDE</td>
<td>149</td>
<td>150</td>
</tr>
<tr>
<td>RAPE/ASSAULT TO RAPE</td>
<td>119</td>
<td>144</td>
</tr>
<tr>
<td>ROBBERY</td>
<td>475</td>
<td>669</td>
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<tr>
<td>AGGRAVATED ASSAULT</td>
<td></td>
<td></td>
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<tr>
<td>BURGLARY</td>
<td></td>
<td></td>
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<tr>
<td>LARCENY</td>
<td></td>
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<tr>
<td>AUTO THEFT</td>
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<td>ARSON</td>
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</table>

SOURCE: Transit Police

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

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

- Carmens Union (L589) 9/30/15: 45%
- Carmens Union (L589) 3/31/17: 24%
- MBTA Overall 9/30/15: 27%
- MBTA Overall 3/31/17: 16%

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)

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

Low bidder:

<table>
<thead>
<tr>
<th>Bid Award*</th>
<th>Bidder Name</th>
<th>TIC</th>
</tr>
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<tbody>
<tr>
<td>Reoffering</td>
<td>Morgan Stanley &amp; Co. LLC</td>
<td>1.760022</td>
</tr>
<tr>
<td></td>
<td>Wells Fargo Bank, National Association</td>
<td>1.768218</td>
</tr>
<tr>
<td></td>
<td>Citigroup Global Markets Inc</td>
<td>1.774014</td>
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<td></td>
<td>Barclays Capital Inc</td>
<td>1.780146</td>
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<td></td>
<td>J.P. Morgan Securities LLC</td>
<td>1.785387</td>
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<tr>
<td></td>
<td>Raymond James &amp; Associates Inc</td>
<td>1.790460</td>
</tr>
<tr>
<td></td>
<td>Goldman Sachs &amp; Co.</td>
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<tr>
<td></td>
<td>Bank of America Merrill Lynch</td>
<td>1.796526</td>
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<tr>
<td></td>
<td>Jefferies LLC</td>
<td>1.809908</td>
</tr>
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</table>
Bending the cost curve: Streamlining workforce

MBTA Separations / Hires
Salary ($ Millions)

- Separated Employees (717): $54.0M
- New Hires 323: -$19.1M
- Total Net Impact (394): $34.9M

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

Avg. Salary
- Separations: $75K
- Hires: $59K

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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

Status Quo

$325M

$33M

$34M

$35M

$36M

FY16
FY17
FY18
FY19
FY20
FY21

12/19 Agreement

Savings

$1M

$10M

$17M

$24M

$25M

12/19 Agreement

Savings
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

<table>
<thead>
<tr>
<th>Annual Cost (Fully Loaded)</th>
<th>$11.8M</th>
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<tbody>
<tr>
<td>FY16 Money Room Budget (Fully Loaded per KPMG)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>$3.6M</th>
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<tbody>
<tr>
<td>BRINKS</td>
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</tbody>
</table>

| 65% Reduction |

| Warehouse |

<table>
<thead>
<tr>
<th>Annual Cost (Fully Loaded)</th>
<th>$12.1M</th>
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</thead>
<tbody>
<tr>
<td>FY17 Warehouse Budget (Fully Loaded per KPMG)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>$7.1M</th>
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<tr>
<td>MANCON</td>
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</table>

| 40% Reduction |
Flexible Contracting

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

OVERNIGHT PARTS DELIVERY:
• Parts requests submitted by MBTA personnel prior to 6:00PM are fulfilled by 4:00AM the following morning
• All parts requests fulfilled within maximum 10 hour window

• 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
Warehouse Modernization: Better organized, cleaner, and more efficient

- Everett Pre-Mancon
- Everett Post-Mancon
- New Central Warehouse Stoughton

Images:
- New Shelving
- New Racking

Dates:
- 2/6/17
- 2/21/17
- Full Parts Move

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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

**Better inventory management improves part retrieval time and maintenance efficiency**
Flexible Contracting

Bending the cost curve:
Rapid improvement in cash collections efficiency

80% REDUCTION IN TIME TO DEPOSIT

Time From Collection to Bank Deposit (Hours)

Source: MBTA Internal Data; BRINKS

<table>
<thead>
<tr>
<th>Time From Collection to Bank Deposit (Hours)</th>
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<tbody>
<tr>
<td>150 Hours</td>
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<tr>
<td>120+</td>
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<tr>
<td>-80%</td>
</tr>
<tr>
<td>24</td>
</tr>
</tbody>
</table>

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
Cash handling contract management: March - June 2017 actuals

Cost of Cash Handling

<table>
<thead>
<tr>
<th>Month</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Mar-17</td>
<td>$235K</td>
</tr>
<tr>
<td>Arp-17</td>
<td>$249K</td>
</tr>
<tr>
<td>May-17</td>
<td>$271K</td>
</tr>
<tr>
<td>Jun-17</td>
<td>$271K</td>
</tr>
</tbody>
</table>

Avg. monthly cost of MBTA provisioned service: $983K

Brinks Performance

- Cost of cash handling ~1/3 of MBTA provisioned service
- Brinks running ~15% under monthly contract value of $300K

*money room fully loaded
Jun-17 included 2% Incentive added to Transportation invoice for exceeding Performance SLA

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Flexible Contracting and Productivity Improvements: 10-Year Projected Savings

Flexible contracting:
Driving savings through outsourcing and internal labor productivity

10-Year Projected Savings

- **Warehouse Outsourcing**
  - Operating: $65.1M
  - Capital: $16.1M

- **Money Room Outsourcing**
  - Operating: $94.9M
  - Capital: $1.2M

- **L589 Carmen’s Union (12/19/16 Agreement)**
  - Reduced Wage Growth: $106.8M
  - Progression: $93.8M

- **Call Center**
  - $17.0M

**Total 10-Year Savings:** $400M+

(1) Total L589 Carmen’s Union savings net of $16.0M in MBTA 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

<table>
<thead>
<tr>
<th></th>
<th>MBTA (FY16)</th>
<th>Winning Bid (FY18)</th>
<th>Bid #2 (FY18)</th>
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</thead>
<tbody>
<tr>
<td>$200/hr</td>
<td>$181/hr</td>
<td>$106/hr</td>
<td>$117/hr</td>
</tr>
<tr>
<td>Annual Cost</td>
<td>$423.7M</td>
<td>$1.9M</td>
<td>$2.1M</td>
</tr>
<tr>
<td>Annual Rev Hrs</td>
<td>2,344K hrs</td>
<td>18K hrs</td>
<td>18K hrs</td>
</tr>
<tr>
<td>Union Affiliations</td>
<td>ATU (L589) IAM (L264)</td>
<td>TEAMSTERS (L25)</td>
<td>ATU (L1512, L1363)</td>
</tr>
</tbody>
</table>

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

**MBTA Bus Maintenance Fully Loaded Cost (L264 Garages*)**

- **Wages, cash fringe, payroll taxes (68)**
- **Materials, services, supplies (21)**
- **Retiree health and pension (fully loaded) (21)**

**FY16 Actual**

- $110M

**Annual Run-Rate (7/1/17)**

- $98M

**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%
Bus Maintenance – Management Actions

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*)

$60/hr

$47/hr

-11%

$42/hr

$27/hr

FY16 Actual

Annual Run-Rate (7/1/17)

Target: Innovation Proposals Benchmark^*

*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

Draft for Discussion & Policy Purposes Only
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

<table>
<thead>
<tr>
<th>Sample</th>
<th>$8 Trip</th>
<th>$6</th>
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<tbody>
<tr>
<td></td>
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<td>$2</td>
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<tr>
<td>Sample</td>
<td>$19 Trip</td>
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Apps

Ordering Options

Call-In Ordering

Provided Smartphones
Focus on the customer: RIDE Modernization

**Average Cost per Trip**

- **Traditional RIDE**:
  - Fixed cost: $15.00
  - Variable cost: $31.00
  - Total: $46.00

- **Pilot**:
  - $8.98

- **Comparison**:
  - Original average cost: $46.00
  - New average cost: $8.98
  - Reduction: -80%

**Customer Satisfaction (Net Promoter Score)**

- **On-Demand Pilot**:
  - Net Promoter Score: 79%

- **Transit Industry Avg.**:
  - 12%
Focus on the customer:
Targeted expansion of core service

Feds OK Green Line extension costs, securing project’s future

MBTA breaks ground on Blue Hill Avenue station

Silver Line service to Chelsea to begin next spring
Focus on driving service improvement:
Performance metrics published daily at www.mbtabackontrack.com
Focus on driving service improvement:
Core system reliability

Focus on the customer:
Implementing a new automated fair 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.
Accelerating capital delivery:
MBTA FY17 goal is to award 3x more contracts than FY14-16

Dollar Value of Contracts ($M)

Low contract awards over past 36 months are now impacting current spend

Contracts Awarded (Projected)

Contracts Awarded (Actual)
Capital delivery strategy: 5YR Capital Plan doubles investment in track/power signals and vehicles

Track, signals, and power spending:
- FY2012 - 2016: $485M
- FY2017 - 2021: $1,080M
- Increase: +123%

Revenue vehicle spending:
- FY2012 - 2016: $665M
- FY2017 - 2021: $1,605M
- Increase: +141%

Source: DOT and MBTA internal estimates of available sources and applicable uses; Division initial estimates of program sizes
Accelerating SGR capital delivery:
$50M Gloucester drawbridge will go out to bid within 2 months

- Replacing the 106-year-old Annisquam River drawbridge is an example of an SGR investment in core system.
- First identified as past its useful life in 2010, the drawbridge is critical to the 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 expand in the heat and have to be 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

- Initial Car Procurement: 132 Cars (Arrival 2019-2020)
- Additional Car Procurement: 120 Cars (Arrival 2021-2022)
- Full Fleet Replacement: 266 Cars
  - 14 Optional Cars

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...

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

**Market Funded %**

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>CY07</td>
<td>1.92</td>
</tr>
<tr>
<td>CY08</td>
<td>1.31</td>
</tr>
<tr>
<td>CY09</td>
<td>1.42</td>
</tr>
<tr>
<td>CY10</td>
<td>1.49</td>
</tr>
<tr>
<td>CY11</td>
<td>1.39</td>
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<td>CY12</td>
<td>1.48</td>
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<td>CY13</td>
<td>1.61</td>
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<tr>
<td>CY14</td>
<td>1.59</td>
</tr>
<tr>
<td>CY15</td>
<td>1.50</td>
</tr>
<tr>
<td>CY16 (PRELIMINARY*)</td>
<td>1.48*</td>
</tr>
</tbody>
</table>

*Preliminary estimates as of 5/1/2017
Source: MBTA Pension Fund Data; MBTARF Annual Reports
Annual benefit payments now nearly double contributions

Total Additions and Deductions from the MBTARF, 2016

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>2015 Assets (End of Year)</td>
<td>$1,498M</td>
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<tr>
<td>Investment Return and Income*</td>
<td>$79M</td>
</tr>
<tr>
<td>Contributions</td>
<td>$105M</td>
</tr>
<tr>
<td>Benefits Paid</td>
<td>-$195M</td>
</tr>
<tr>
<td>Admin. Expenses*</td>
<td>-$4M</td>
</tr>
<tr>
<td>2016 Assets (End of Year)*</td>
<td>$1,484M</td>
</tr>
</tbody>
</table>

Net Outflow: $90M

There are 899 more retirees than active employees:
- Current retirees (6,685)
- Current employees (5,786)

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

**MBTARF Contribution Scenarios**

**KEY ASSUMPTIONS:**
- Target rate of return (discount rate) = 7.75%
- Projected Average Annual Rate of Return:
  - First Ten Years: 4%
  - After Ten Years: 7%
- Variable contribution rate

- Past Contributions
- Status Quo No Reform
- Structural Reform - flat at 18%

**Base funding:** $1,770M

**Required additional funding:** $1,051M

**% OF PAYROLL**
- 36%
- 18%

Contribution($M) 37 44 56 73 87 91 98 105 112 119 126 134 142 151 160 168 177 185 193 201 210 219 230

Draft for Discussion & Policy Purposes Only
Modernizing the MBTA through flexible contracting:
Bus maintenance

<table>
<thead>
<tr>
<th>Bus Maintenance Total Cost</th>
<th>FY16 = 2.34M revenue hrs</th>
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</thead>
<tbody>
<tr>
<td>MBTA (FY16)</td>
<td>$132M</td>
</tr>
<tr>
<td>Public Transit Systems Avg. (1)</td>
<td>$73M</td>
</tr>
<tr>
<td>TransPro Assessment (Full Potential)</td>
<td>$68M</td>
</tr>
<tr>
<td>Innovation Proposals Bid Avg.</td>
<td>$64M</td>
</tr>
<tr>
<td>Worcester RTA</td>
<td>$58M</td>
</tr>
<tr>
<td>Privately operated public transit systems avg. (2)</td>
<td>$46M</td>
</tr>
</tbody>
</table>

**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

Savings could be reinvested in:
- Expanded service offerings
- Critical capital maintenance needs (maintenance lockbox)
- Deficit reduction
Private sector v. MBTA maintenance model differences: Productivity example – “Working Supervisors”

<table>
<thead>
<tr>
<th>LEGACY MBTA OPERATING MODEL</th>
<th>MODERNIZED OPERATING MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>No executive non-union managers staffed at the garage level</td>
<td>Executive non-union supervisors on the floor, driving workflow</td>
</tr>
<tr>
<td>Union supervisors (foremen) on the floor</td>
<td>All supervisors are “working supervisors”</td>
</tr>
<tr>
<td>Work rules and workplace practices specifically prevent foremen and asst. foremen from performing machinist work</td>
<td>Supervisors work alongside machinists to complete tasks / pitch in where needed</td>
</tr>
<tr>
<td>ARTICLE XXXIV – BARGAINING UNIT WORK: &quot;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.&quot;</td>
<td>Working supervisors model keeps supervisor skills sharp and helps to balance staffing needs</td>
</tr>
<tr>
<td></td>
<td>Supervisors / machinists cross-trained in all tasks</td>
</tr>
</tbody>
</table>
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
Maintenance Requirements:
Private Operator To Use Daily/Weekly/Monthly Checklists Specified By OEM

**DAILY CHECKLIST**

### Daily Preventive Maintenance

1. **2.6.6. Floor Covering**
   - **CAUTION:** Do NOT clean the vehicle interior with pressure washing equipment. This type of cleaning causes excessive soiling 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.
   - Inspect the interior flooring for cleanliness on a regular basis depending on operating conditions. Exposure to salt, sand, or dust during the winter months may require

2. **2.6.7. Chassis Breather Tube**
   - Check breather tube for leaks, kinks, or other damage. Also check inside of tube for sludge, debris, or ice formation (in freezing conditions). Clean or replace tube as required.

3. **2.6.8. Aftertreatment Exhaust Piping**
   - Inspect exhaust aftertreatment system for leaks, cracks, and loose connections. Inspect for leaks at V-bend connections and tighten clamps as necessary.

4. **2.6.9. Air Intake Piping**
   - Inspect air intake tubes and hose, for evidence of wear, punctures, or other damage.

### WEEKLY CHECKLIST

**Weekly Preventive Maintenance**

- Ensure that the support arm is in direct contact with the crossmember and held by the support arm. Adjust the support arm as required.
- Ensure that the support arm hooks pull out smoothly, stop at the stop, slide into the lowest position, and rest on the magnet when released.
- Check the pivot bolt assemblies to ensure they are tight.
- Check front corner bootstrap bolts for wear or cracks. Replace as necessary.
- Check that all mounting brackets fasteners are tight, including the hardware for the...
Market Pricing:
Lifecycle maintenance Costs New Flyer Xcelsior Diesel-Electric 40 Ft. Transit Bus

Maintenance Cost per Revenue Hour

<table>
<thead>
<tr>
<th></th>
<th>INTERNALLY PROVISIONED</th>
<th>PRIVATE CONTRACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBTA (FY16)</td>
<td>$56/hr (Retiree Health and Pension (fully loaded))</td>
<td>$18/hr</td>
</tr>
<tr>
<td>Paul Revere Bid (FY18)</td>
<td>$18/hr</td>
<td>$15/hr</td>
</tr>
<tr>
<td>Peter Pan Bid (FY18)</td>
<td>$15/hr</td>
<td></td>
</tr>
</tbody>
</table>

**Annual Rev Hrs per Bus**

- MBTA (FY16): 2,254 hrs
- Paul Revere Bid (FY18): 3,019 hrs
- Peter Pan Bid (FY18): 3,019 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; 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

Draft for Discussion & Policy Purposes Only
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

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<td>7</td>
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</table>

REVAL Automated Reporting

Draft for Discussion & Policy Purposes Only
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.
## FY18 Budget Package (April 2017):
Target bus maintenance full year cash savings of $21M

<table>
<thead>
<tr>
<th>Included in FY18 Itemized Budget</th>
<th>Full-Year Run-Rate Impact</th>
<th>Target Date</th>
<th>Estimated FY18 Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hybrid In-Station Customer Service Model</td>
<td>$6</td>
<td>8/1/2017</td>
<td>$6</td>
</tr>
<tr>
<td>Four (Focus40) Garage RFPs</td>
<td>$11</td>
<td></td>
<td></td>
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<tr>
<td>Cabot Garage Efficiency</td>
<td>$5</td>
<td></td>
<td>$8</td>
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<tr>
<td>Everett Bus Shop</td>
<td>$5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chelsea Silver Line</td>
<td>($5)</td>
<td>1/1/2018</td>
<td>($3)</td>
</tr>
<tr>
<td>Strategic Operations Hires</td>
<td>($7)</td>
<td>7/1/2017</td>
<td>($7)</td>
</tr>
<tr>
<td><strong>Subtotal - Adjusted Structural Deficit</strong></td>
<td><strong>($27)</strong></td>
<td></td>
<td><strong>($38)</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FY18 Deficit Spending</th>
<th>Full-Year Run-Rate Impact</th>
<th>Target Date</th>
<th>Estimated FY18 Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>The RIDE</td>
<td>$3</td>
<td>7/1/2017</td>
<td>$1</td>
</tr>
<tr>
<td>Commuter Rail</td>
<td>$5</td>
<td></td>
<td>$5</td>
</tr>
<tr>
<td>CR Revenue Expansion and Advertising</td>
<td>$4</td>
<td>1/1/2018</td>
<td>$2</td>
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<tr>
<td><strong>Structural Deficit</strong></td>
<td><strong>($15)</strong></td>
<td></td>
<td><strong>($30)</strong></td>
</tr>
</tbody>
</table>

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

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

- **August 2015 (FY18 Status Quo Pro Forma)**: -$335M
- **Operating Revenues**: $37M (+)
- **Non-Operating Revenues**: -$7M
- **Wage Expenses**: $100M (+)
- **Non-Wage Expenses**: $121M (+)
- **Debt Service Expenses**: $54M
- **FY18 Budget**: -$30M

**PROGRESS TOWARDS BALANCED BUDGET**
# Status quo FY18 Pro Forma (August 2015) vs. FY18 Budget approved April 2017

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

$1,000M

$765M annual SGR investment required to eliminate $7B backlog in 25yrs

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

Draft for Discussion & Policy Purposes Only