Agenda

- RIDE FY17 Budget Forecast Update
- Winthrop Bus Routes
- Commuter rail performance
The RIDE is expected to end FY17 $17M over budget

RIDE Budget vs. Proj. Actual

<table>
<thead>
<tr>
<th>Service</th>
<th>FY17 Budget</th>
<th>FY17 Proj. Actual</th>
<th>Var.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$92M</td>
<td>$109M</td>
<td>+$17M</td>
</tr>
<tr>
<td>Traditional RIDE Service</td>
<td>$84.2M</td>
<td>$104.6M</td>
<td>+$20.4M</td>
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<tr>
<td>Call Center</td>
<td>$5.5M</td>
<td>$4.2M</td>
<td>-$1.3M</td>
</tr>
<tr>
<td>Pilot</td>
<td>$2.3M</td>
<td>$0.3M</td>
<td>-$2.0M</td>
</tr>
</tbody>
</table>

Call Center Build Out $4.2M

Pilot $0.3M

Call Center Build Out $5.5M

Pilot $2.3M

Traditional Ride Service $84.2M

Draft for Discussion & Policy Purposes Only
Agenda

- RIDE FY17 Budget Forecast Update
- Winthrop Bus Routes
- Commuter rail performance
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
Scope of Work and Service Information

**SCOPE OF WORK:**

- Contractor will provide full operation and maintenance of MBTA-owned vehicles for Routes 712/713
- For the first time, MBTA will provide six (6) new 40FT hybrid diesel/electric buses to contractor
  - Same New Flyer buses recently put into operation out of MBTA’s Cabot garage
- Contract Length: FY2018-FY2021 (4 years) with two (2) one-year option years

**SERVICE INFO:**

- Number of Buses: 6
- Annual Revenue Hours: 18,115
- Annual Revenue Hour per Bus: 3,019
- Ridership (FY2016): 735,390 passengers
Service Level Agreements and Maintenance Requirements

SERVICE LEVEL AGREEMENTS:

• Penalties will be assessed for “missed trips”, defined as the vehicle never arriving or arriving more than 30 minutes after the scheduled pick-up time

• Amount of penalty will be equal to twice the contractor’s per trip rate (daily rate divided by # of trips that day, times 2)

• Contractor responsible for providing weekly list of missed trips

MAINTENANCE REQUIREMENTS:

• **Facility**: contractor responsible for providing maintenance facility within 10 miles of the route

• **Experience**: lead mechanic applicants hired will have a minimum of 5 years maintaining heavy duty buses (a master technician with ASE certification is required); supporting mechanics will have at least 1 year of experience

• **Other Requirements**: adhere to MBTA-authorized PM schedules, adhere to all OEM standards, and allow for bi-annual audits by MBTA staff

Source: MBTA RFP No. 140-16
### FACILITY

- Maintenance facility must be within 10 miles of routes
- Contractor required to maintain and garage buses at this facility
- MBTA reserves right to inspect buses at this facility at any time

### EXPERIENCE AND TRAINING

- Lead mechanic(s) must have minimum 5 years’ experience maintaining heavy duty buses
- A master technician with ASE certification is required
- Supporting mechanics must have at least 1 year experience
- Trainer staff required to attend MBTA training modules on BAE hybrid propulsion, Cummins engines, Multiplex, etc.

### SAMPLE REQUIREMENTS

- Daily circle checks
- MBTA-authorized preventative maintenance (PM) schedules
- Adherence to all OEM requirements
- Electronic record-keeping in MIS system
- Monthly technical and engineering inspections
- Bi-annual maintenance audits by MBTA staff
- No body damage greater than 1” in length or that inhibits safe vehicle operation
- Passenger area free from excessively worn floor or broken seats
- Functioning heating and A/C
- Annual emission/opacity inspections
- Wheelchair ramp maintenance and performance
- Minimum 2 weeks parts inventory

**Failure to comply with standards will result in “hefty fines and sanctions”**
Maintenance Requirements:
Private Operator Must Adhere To All Specified OEM Standards For New Buses

- Preventative Maintenance
- Front Axle & Suspension
- Rear Axle & Suspension
- Steering System
- Engine System
- Hybrid Drive System
- Cooling System
- Fuel System
- Air System
- Electric System
- HVAC System
- Structures & Chassis
- Interior Panels & Applied Parts
- Exterior Panels & Applied Parts
- Windows
- Access Doors & Panels
- Entrance & Exit Doors
- Seating & Stanchions
- Destination Signs
- Driver’s Controls
- Wheelchair Ramps

Source: MBTA RFP No. 140-16
Maintenance Requirements:
Private Operator To Use Daily/Weekly/Monthly Checklists Specified By OEM

DAILY CHECKLIST

2.6.6. Floor Covering

2.6.7. Drainage/Exhaust Pipe
Check drainage/ exhaust pipe for kinks, dents, or other damage. Also check inside of pipe for sludge, debris, or ice formation (in freezing conditions). Clean or replace pipe as required.

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

2.6.9. Air Intake Piping
Inspect air intake tubes and hoses for evidence of wear, punctures, or other damage.

WEEKLY CHECKLIST

2.7. Weekly Preventive Maintenance

2.7.1. Radiator
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 it 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.

MONTHLY CHECKLIST

2.8.2. Air Tanks
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 trends in monitoring to assess the performance of the compressor (excessive oil peeling) and air dryer (saturated desiccant cartridge).

The following factors can influence the amount of water collected and should be taken into consideration before making an assessment:

☐ An outside air source was used to charge the system and did not pass through the air dryer.
☐ Exceptionally high air usage, exceeding 25% compressor duty cycle due to either heavy accessory demand or system leakage.

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 an indication that the air dryer is not functioning properly.

NOTE:
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.

2.8.3. Fire Suppression System
☐ Open access door behind wheelbase: light, pen, opposite the waft door, to access gouge. See “Fig. FM-1: Fire Suppression Cylinder Inspection” on page 10.
☐ Check pressure gauge on agent cylinder to ensure it is in the operating (green) range.
☐ Check all nozzles and instructional labels for legibility.
☐ Check physical condition of all components: mechanical damage and security of equipment.

5. Evaluate volume collected as follows:

a. More than one unit of oil in a 30 day period will require the desiccant cartridges to be changed, and is considered cause for further inspection of the air compressor. Wear 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 cause to conduct on air system leakage test. Refer to Section 6 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 cartridge.
Maintenance Requirements:
Private Operator Must Use MBTA-Authorized Inspection Forms

DAILY CIRCLE CHECK FORM
Operators must perform routine safety check before bringing bus into service

MBTA PM INSPECTION FORM
Private contractor’s staff must perform MBTA-specified preventative maintenance
Best Value Bid Was Paul Revere at $106 Per Revenue Hour

Total Cost per Revenue Hour

**$181/hr**

MBTA (FY16)

**$106/hr**

Winning Bid (FY18)

**$117/hr**

Bid #2 (FY18)

- **Annual Cost**: $423.7M
- **Annual Rev Hrs**: 2,344K hrs
- **Union Affiliations**: ATU (L589), IAM (L264)

- **Winning Bid (FY18)**
  - **Annual Cost**: $1.9M
  - **Annual Rev Hrs**: 18K hrs
  - **Union Affiliations**: TEAMSTERS (L25)

- **Bid #2 (FY18)**
  - **Annual Cost**: $2.1M
  - **Annual Rev Hrs**: 18K hrs
  - **Union Affiliations**: ATU (L1512, L1363)

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

Draft for Discussion & Policy Purposes Only
Market Pricing:
Lifecycle maintenance Costs New Flyer Xcelsior Diesel-Electric 40 Ft. Transit Bus

Maintenance Cost per Revenue Hour

<table>
<thead>
<tr>
<th>INTERNALLY PROVISIONED</th>
<th>PRIVATE CONTRACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>$75/hr</td>
<td>$56/hr</td>
</tr>
<tr>
<td>$56/hr Retiree Health and Pension (fully loaded)</td>
<td>$18/hr</td>
</tr>
<tr>
<td>$15/hr Peter Pan Bid (FY18)</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
Market Pricing: Lifecycle Maintenance Costs New Flyer Xcelsior Diesel-Electric 40 Ft. Transit Bus

Bus Maintenance Cost per Revenue Hour

<table>
<thead>
<tr>
<th></th>
<th>MBTA (FY16)</th>
<th>P. Revere (FY18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wages, fringe, taxes</td>
<td>$74.4M</td>
<td>$229K</td>
</tr>
<tr>
<td>Materials, services, supplies</td>
<td>$34.5M</td>
<td>$104K</td>
</tr>
<tr>
<td>Retiree health &amp; pension</td>
<td>$23.2M</td>
<td>-</td>
</tr>
<tr>
<td>Revenue Hours</td>
<td>2.34M</td>
<td>18.1K</td>
</tr>
</tbody>
</table>

Does not include all overhead expenses likely distributed over other Paul Revere contracts

Annual Rev Hrs per Bus

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Draft for Discussion & Policy Purposes Only
**Benefits of Contracted Service:**

- Bus service costs will grow at 2% annually (vs. historical 4-5% MBTA bus cost growth)
- Provides budget certainty and predictability
- "Not to exceed" provision means contractor bears financial risk
- Aligns costs with MBTA’s own long-term cost targets (below 2% annual growth) and closer to historical revenue growth

**Total Contract Cost**

- Year1 (FY18): $1.9M
- Year2 (FY19): $2.0M
- Year3 (FY20): $2.0M
- Year4 (FY21): $2.0M

**CAGR**

2%

Source: MBTA Internal Data
Agenda

- RIDE FY17 Budget Forecast Update
- Winthrop Bus Routes
- Commuter rail performance
Commuter Rail On-Time Performance Summary
By Line & Equipment Availability

Commuter Rail Weekly Operational Report

Last 7 Days Service Delivery
Cancellations/Trips 23/2971
Service Delivery 99.23%

Locomotive Availability

Coach Availability

Actual OTP
Actual OTP under 10 min
Actual OTP Target
Rolling 7 Days Actual OTP By Line
<85%
<90%
>=90%
Rolling 7 Days Actual OTP By Line
Rolling 7 Days Actual OTP By Line
Rolling 7 Days Actual OTP By Line
• Turbocharger failures on MPIs, legacy locomotive main engine failures and PTC program putting pressure on availability

• 1st UTEX locomotive progressing well, expected in revenue service ahead of schedule (mid April), 2\textsuperscript{nd} & 3\textsuperscript{rd} locomotives on plan
Coach availability

- Sudden decline in coach availability due to large number of coaches with damaged wheelsets coinciding with reduced wheel true facilities (capital replacement of wheel true machine at BET)
- Arranging wheel trueing with Amtrak and increased production on remaining machine at Readville to return to strong position rapidly