



**Massachusetts Bay  
Transportation Authority**

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## **CA Remarks**

**FMCB**

**October 2, 2017**



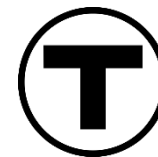
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## Agenda

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### **September Bond Issuance**

Winthrop Routes 712/713 Update



## MBTA bond issuance met by strong investor demand. Transaction was first on the Subordinated Sales Tax credit and included first-ever Sustainability Bonds.

- Authority raised \$576 million via competitive offering on September 26<sup>th</sup>. Funds will be received on October 12<sup>th</sup>.
- Transaction set important precedents for both the MBTA and the municipal marketplace.
  - First MBTA Subordinated Sales Tax issuance
  - First tax-exempt sustainability bond in the United States
- \$301 million of Bond Anticipate Notes priced at 1.37% TIC\*.
- \$275 million of longer term bonds (Sustainability and traditional) priced at an average of 3.61% TIC.
- Sustainability Bonds met the strongest investor demand.
  - 9 banks participated in the sustainable offering
  - 8 banks participated in the traditional offering
  - Of the 8 banks that participated in both offerings, 6 offered stronger bids on the sustainable series than the traditional series.

### Massachusetts Bay Transp \$100,145,000 Subordinated Sale Tax Bonds, 2017 Series A, Subseries A-1 (Sustainability Bonds)

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

Bid Award*	Bidder Name	TIC
<input type="checkbox"/>	<a href="#">Citigroup Global Markets Inc.</a>	3.608094
<input type="checkbox"/>	<a href="#">Wells Fargo Bank, National Association</a>	3.609497
<input type="checkbox"/>	<a href="#">Goldman Sachs &amp; Co. LLC</a>	3.618978
<input type="checkbox"/>	<a href="#">Bank of America Merrill Lynch</a>	3.624070
<input type="checkbox"/>	<a href="#">Morgan Stanley &amp; Co. LLC</a>	3.624589
<input type="checkbox"/>	<a href="#">J.P. Morgan Securities LLC</a>	3.626036
<input type="checkbox"/>	<a href="#">Jefferies LLC</a>	3.632301
<input type="checkbox"/>	<a href="#">Barclays Capital Inc.</a>	3.641546
<input type="checkbox"/>	<a href="#">TD Securities</a>	3.699000

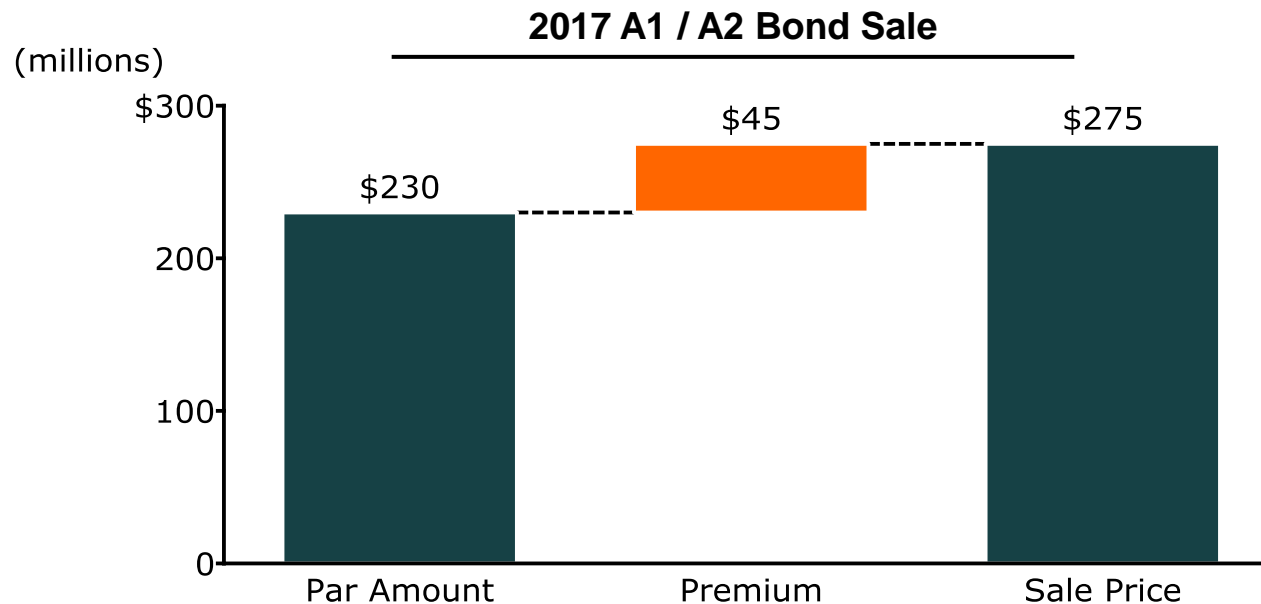
- Sustainability bond produced a lower borrowing cost than the traditional bonds.

\*Note: "TIC" or Total Interest Cost is the full cost of issuance, including all ancillary fees and costs along with factors related to the time value of money.



**Traditional and Sustainability Bonds were issued with a 5% coupon rate and sold at a premium to par value.**

- MBTA sold 5% coupon bonds with a par amount of \$230 million.
- Under then-current market conditions, investors paid \$275 million for these bonds.
- The difference between the sale price and par amount is the *premium*; MBTA does not pay the premium back to investors.
- When accounting for the coupon payments and premium, the **yield of the transaction is 3.6%**.





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## Agenda

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September Bond Issuance

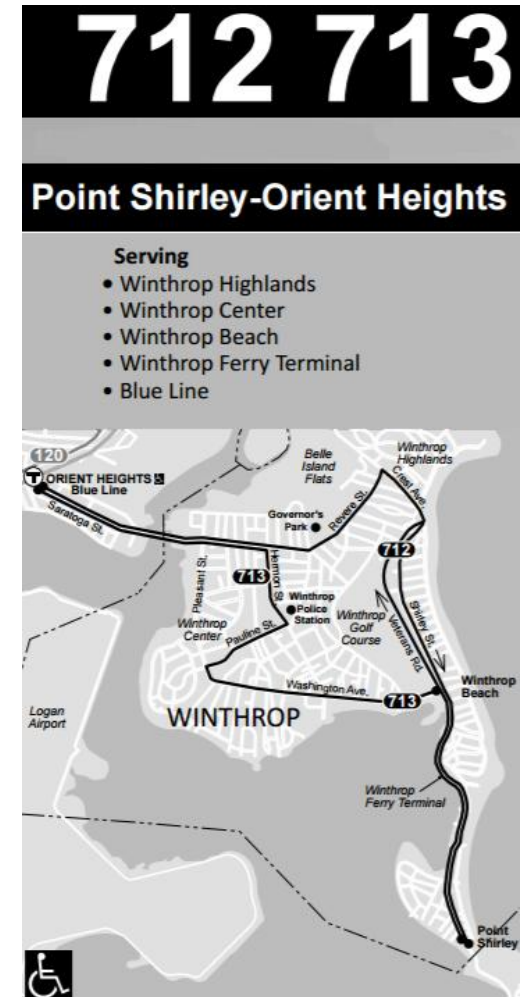
**Winthrop Routes 712/713 Update**



## Winthrop Routes 712/713:

### New contract with Paul Revere Transportation began on July 1<sup>st</sup>

- New operations and maintenance contract with Paul Revere Transportation began on July 1, 2017
- Highlights:
  - › On-Time Performance (OTP) for July and August averaged 82%
  - › 0 mechanical failures reported thus far
  - › Cost per revenue hour (ops. + maintenance) for July and August was \$99/hr
    - FY17 MBTA system-wide cost was \$174/hr





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## New Contract: Massachusetts Regional Transit Authority (RTA) Model

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### **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 has provided 6 New Flyer buses to Paul Revere to operate and maintain
- Service Level Agreements govern performance and maintenance
- Paul Revere 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 has provided 6 New Flyer Xcelior XDE40 FT buses*



# Maintenance Requirements: Paul Revere Uses Daily/Weekly/Monthly Checklists Specified By OEM

<b>DAILY CHECKLIST</b>	
 <b>NEW FLYER</b>	
<b>Daily Preventive Maintenance</b>	
<p>2.6.6. Floor Covering</p> <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 5px 0;"><b>CAUTION</b></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 dam-</p>


<b>WEEKLY CHECKLIST</b>	
 <b>NEW FLYER</b>	
<b>Weekly Preventive Maintenance</b>	
<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"> <li><input type="checkbox"/> Ensure that the support arm magnet contacts and retains the support arm. Adjust magnet position as required.</li> <li><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 stop on the magnet when released.</li> <li><input type="checkbox"/> Check the pivot bolt assemblies to ensure they are tight.</li> <li><input type="checkbox"/> Check pivot bolt bronze oillite bushings for wear or cracks. Replace as necessary.</li> <li><input type="checkbox"/> Check that all mounting bracket fasteners are tight, including the hardware for the</li> </ul>

Exhibit A		BUS MAINTENANCE MILEAGE INSPECTION AUDIT	
VEHICLE NO.	3002	MILEAGE	11096
DATE	8/23/12		
<b>INSTRUCTIONS:</b>			
1. Complete each item on sheet.			
2. All bus require to be completed before audit. Bus to be audited "as-is". Audit Team shall not effect any repairs or adjustments to vehicle.			
3. All audit discrepancies shall be reported.			
4. All items must pass. A single failure or more constitutes a failed audit.			
5. If bus is not in compliance with audit requirements it shall be held until released by Audit Team or Superintendent.			
6. Forward audit report to Superintendent upon completion.			
<i>Paul Revere</i>			
NO.	ITEM	CRITERIA	PASS / FAIL
<b>BODY INTERIOR</b>			
1	Bus Identification	Registration, permits and inspection sticker present and valid	P
2	Brake Pedal / Accelerator Pedal	Rolls pin freely, no lateral play, pad present and secure	P
3	Wheelchair Lift	Operation, interlocks, passenger tie down	P
<b>BODY EXTERIOR</b>			
4	Front Tires / Rims	4/32" tread, even wear, no gouges or rot / No cracks, welds or dents in rims	P
5	Rear Tires / Rims	2/32" tread, even wear, no gouges or rot / No cracks, welds or dents in rims	P
6	Body Panels / Windows	All secure	P
<b>ENGINE COMPARTMENT</b>			
7	Engine / Transmission	Mounts and supports, fluid leaks, belts, cleanliness, secure hoses and fittings	P
8	Battery, Starter, Alternator	Cables secure and operational / No chaffing or corrosion	P
<b>CHASSIS</b>			
9	Steering	Gearbox, pump, hoses, leaks, pitman arm, draglink, tie-rod ends, king-pins	P
10	Air Brake System	Application relay, release valves, cams, chambers, hoses, lines, foundation brakes	P
11	Front Axle	Springs, shackles, U-bolts, shock absorbers, air suspension, radius rods	P
12	Axle 1 Brake Type DISK WEDGE S-CAM	Pushrod Throves (S-CAM) RIGHT	P
13		Pushrod Throves (S-CAM) LEFT	P
14		Brake Liner Pad RIGHT	P
15		Brake Liner Pad LEFT	P
16	Mid Axle	Differential defects, leaks, springs, shackles, U-bolts, shock absorbers, seal, air suspension, radius rods and bushings	P
17	Axle 2 Brake Type DISK WEDGE S-CAM	Pushrod Throves (S-CAM) RIGHT	P
18		Pushrod Throves (S-CAM) LEFT	P
19		Brake Liner Pad RIGHT	P
20		Brake Liner Pad LEFT	P
21	Rear Axle	Differential defects, leaks, springs, shackles, U-bolts, shock absorbers, seal, air suspension, radius rods and bushings	P
22	Axle 3 Brake Type DISK WEDGE S-CAM	Pushrod Throves (S-CAM) RIGHT	P
23		Pushrod Throves (S-CAM) LEFT	P
24		Brake Liner Pad RIGHT	P
25		Brake Liner Pad LEFT	P
<b>VEHICLE OUT OF SERVICE YES / NO</b>			
Audited by _____ Date _____			
Foreperson _____ Date _____			
Maint. Supervisor _____ Date _____			
<b>COMPLETE THIS SECTION FOR FAILED AUDIT</b>			
Enter item number(s) and reason for failure. Attach copy of all CARs with any supporting information to audit report.			
No.	Reason For Failure	CAR Number and Date	Corrected / Approved by
6	Windshield Cracks RH Not 10 Degree Sight		
<b>ADDITIONAL CORRECTIVE ACTION REQUIRED</b> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> REF: _____			

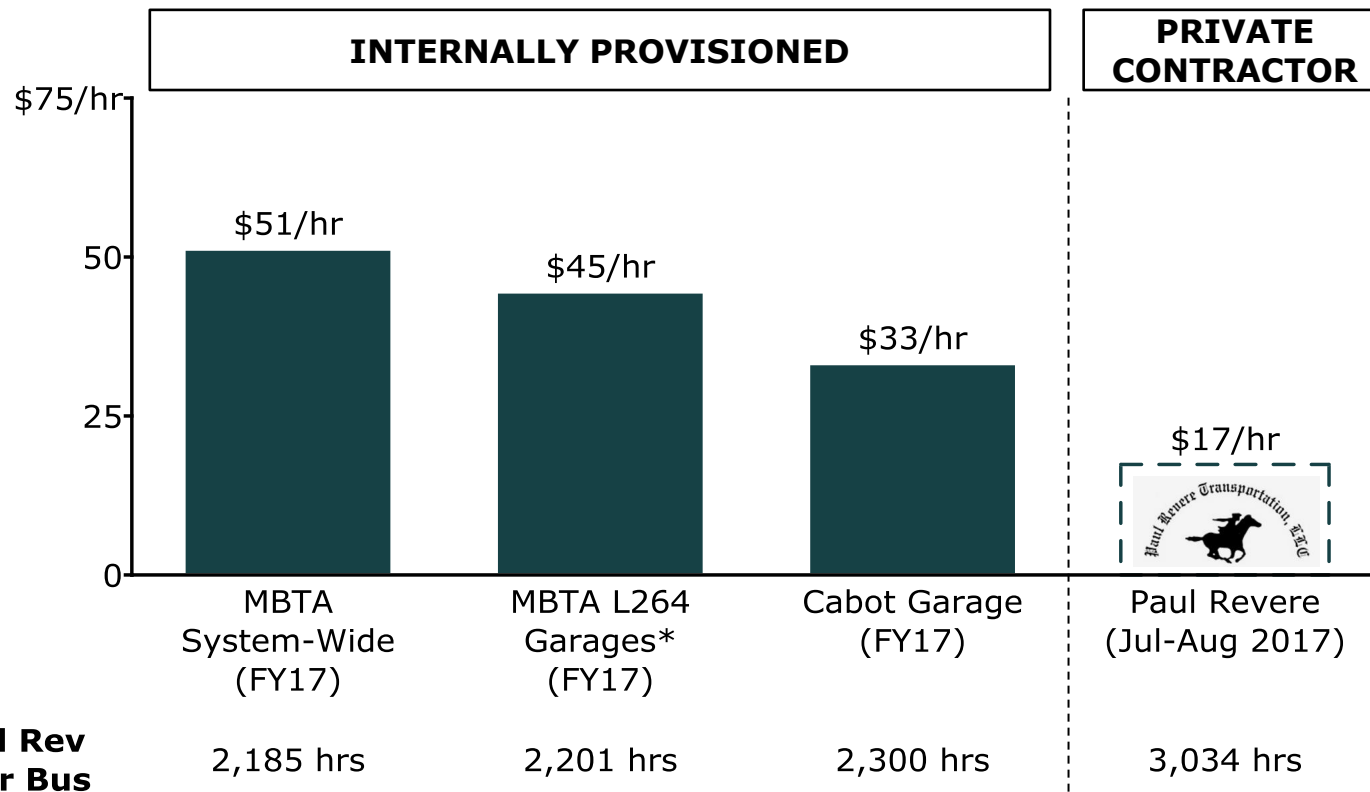
## MBTA-approved mileage inspection audit (July 2017)





## Market Pricing: Maintenance cost per revenue hour for maintaining MBTA buses

### Bus Maintenance Cost per Revenue Hour



**Annual Rev  
Hrs per Bus**

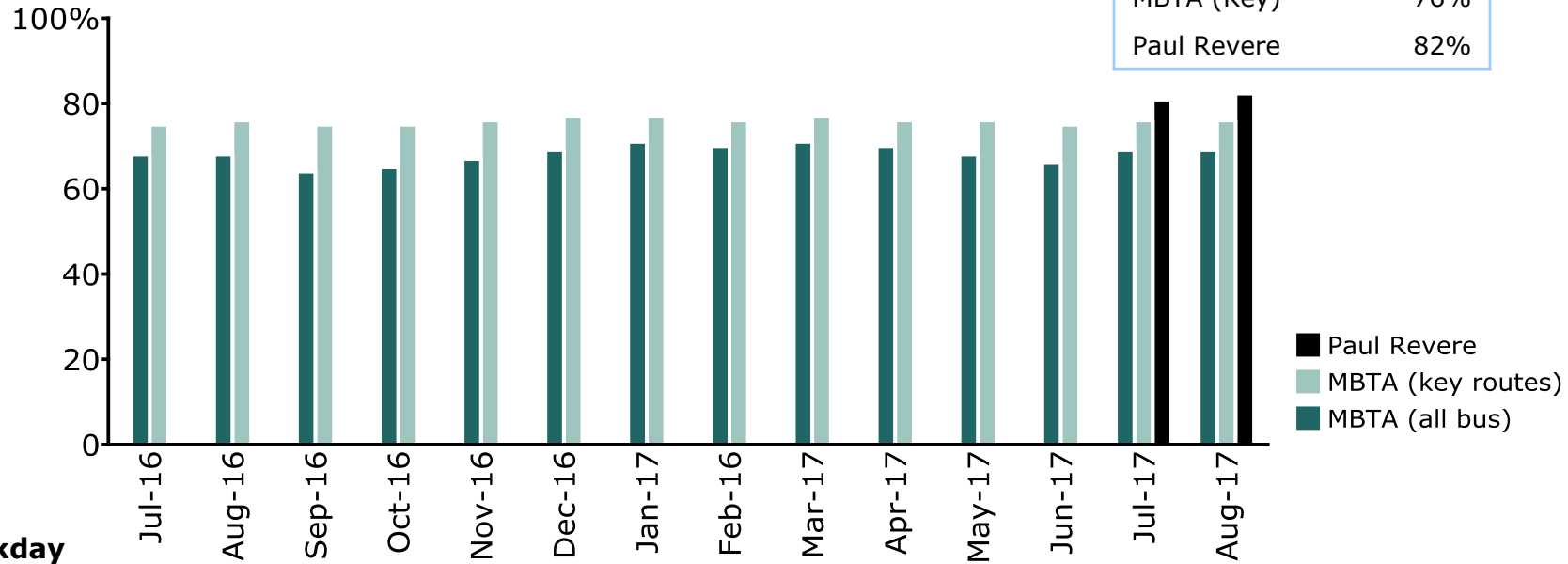
\*L264 Garages include all MBTA bus garages with presence of L264 members (excludes N. Cambridge Carhouse and Admin. costs)  
Note: MBTA FY16 costs include present value of fully funded pension and retiree health costs, include Everett Bus Shop, and exclude Non-Revenue Shops and fuel; MBTA internal costs only includes a portion of total bus G&A expense and reflect pure cost only (no profit margin)  
Source: MBTA Internal Data



# Service Performance: On-Time Performance (OTP)

## Bus Service On-Time Performance (OTP)

Monthly Average	
MBTA (All)	68%
MBTA (Key)	76%
Paul Revere	82%



## Avg. Weekday Ridership

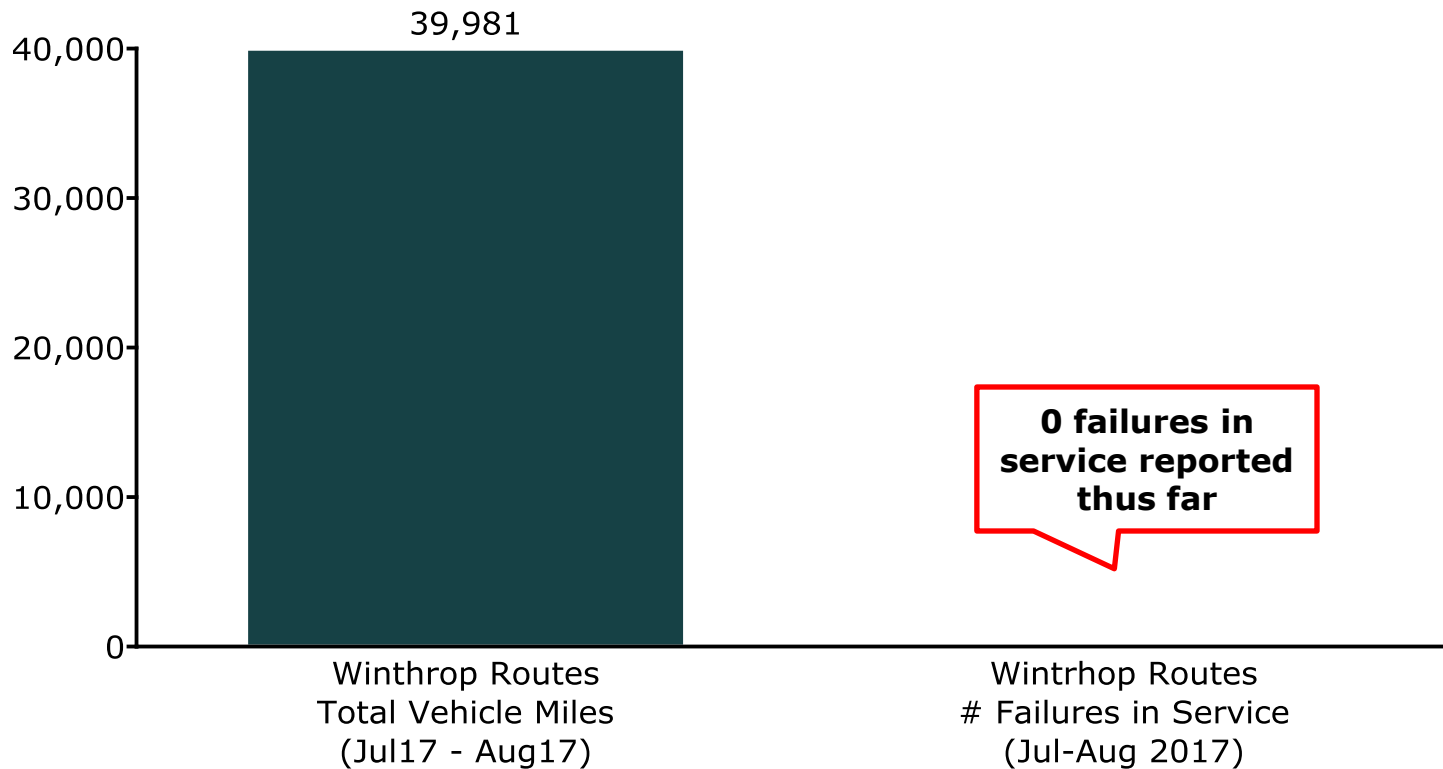
MBTA	389K	380K	422K	414K	403K	369K	394K	377K	391K	396K	403K	-	-	-
Paul Revere	-	-	-	-	-	-	-	-	-	-	-	-	-	3K 3K

Note: If a bus is supposed to come every 15 minutes or less, reliability is measured as a bus departing no more than 3 minutes later the expected interval between buses; For buses scheduled less frequently than every 15 minutes, a bus must depart no more than 1 minute earlier nor 6 minutes later than the scheduled time of day.



## Service Performance – Winthrop Routes Mechanical Failures in Service

### Total Miles and Mechanical Failures

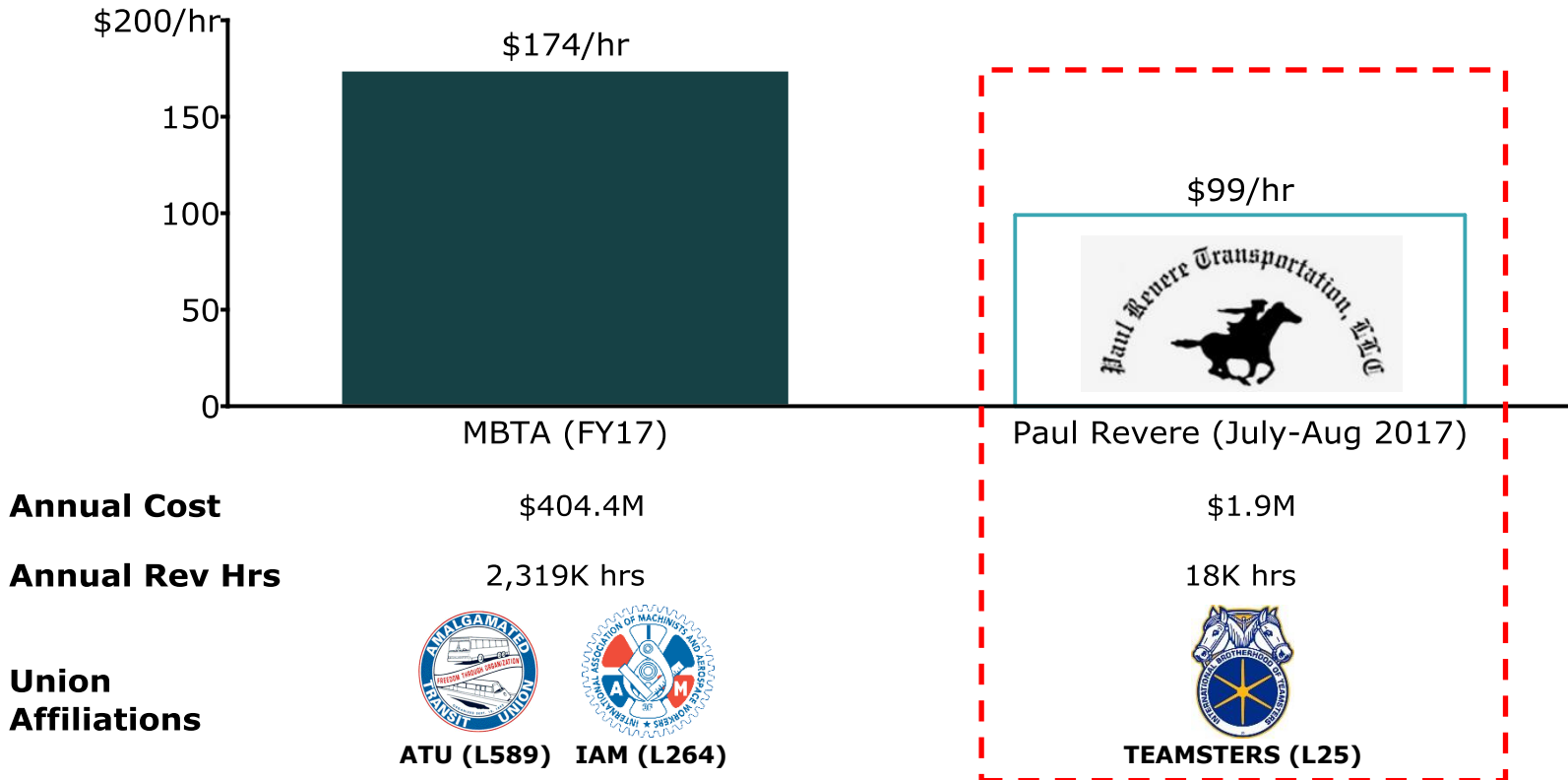


Note: MMBF includes all MBTA bus fleet types and classes, excluding electronic trolley bus fleet at North Cambridge  
Source: MBTA Internal Data



# Bending the Cost Curve: First full turnkey bus operations and maintenance contract

## Total Cost per Revenue Hour (Operations + Maintenance)



Note: MBTA FY17 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