



The MBTA's Out-of-Control Bus Maintenance Costs

by Gregory W. Sullivan

Executive Summary

As the Massachusetts Senate and House of Representatives continue to negotiate over an expected \$500-\$800 million tax increase to fund transportation needs, it's a good time to consider what can be done to reduce or eliminate unnecessary costs that contribute to the state's half-billion dollar annual transportation operating deficit, consistent with Senate President Therese Murray's stated objective of "reform before revenue."

The MBTA's bus repair and maintenance program is an example of a budget area that deserves close scrutiny by legislators as they contemplate transportation-related tax increases. Pioneer Institute's analysis shows that the MBTA could save more than \$250 million over six years by bringing its costs into line with those of comparable bus transit agencies in the United States. This policy paper compares the MBTA's bus maintenance costs to those of other bus transit agencies and considers the causes of the T's inordinately high bus maintenance spending. Considering that the MBTA spent a whopping \$832 million on bus maintenance between 2000 and 2011, any significant improvement in cost-effectiveness in this area is certain to translate into large savings.

The key problems with the MBTA's current bus maintenance program are:

- **The MBTA's bus maintenance cost per mile was 4th highest of 379 U.S. bus transit agencies** as measured in maintenance cost per bus mile traveled, according to statistics published by the U.S. Department of Transportation's National Transit Database (NTD), during the five years from 2007-2011. In 2011, the most recently reported year, the MBTA's per mile maintenance cost was 93.6%

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higher than the average of all other bus transit agencies that operate more than 100 buses. The MBTA's cost was \$3.76 per mile, while the average of these other bus transit agencies was \$1.94 per mile. If the MBTA could bring its costs down to the national average, it would save more than \$43 million per year and more than \$250 million over six years.

- **Excessive staffing levels at MBTA garages:** The MBTA ranked second out of the nation's 29 largest transit systems in the number of full-time maintenance personnel employed per bus mile traveled, 63% higher than average.
- **Excessive compensation levels at MBTA garages:** The average 2012 wage for a T bus maintenance employee was \$78,550 including overtime according to the *Boston Herald's* "Your Tax Dollars at Work" transparency website. When fringe benefits are included, the average cost per full-time employee was \$111,634. The top ten highest paid machinists (mechanics) averaged \$134,554; highest was \$151,363. The top ten highest paid painters averaged \$86,486; highest was \$101,199. The top ten highest paid fuelers averaged \$67,326; highest was \$79,986. The forepersons at the MBTA's Charlestown and Fellsway maintenance and repair facilities earned \$194,337 and \$166,297 respectively in 2012. By comparison, Governor Patrick earned \$139,832.42 and Transportation Secretary Davey earned \$152,076.94.
- **MBTA bus maintenance costs are twice as high as the 20 bus agencies closest to the T in national maintenance performance rankings:** The MBTA bus maintenance department spent more than twice as much per bus mile traveled in 2011 (the most recent NTD data available) as the average of the 20 bus agencies with maintenance productivity performance records most similar to the T's in the category of mean miles between failures. The MBTA ranked worst in cost per bus mile traveled among this group of similarly performing maintenance systems.
- **The MBTA could save \$250 million over six years by bringing its maintenance costs in line with comparably performing bus transit agencies:** Pioneer Institute's analysis shows that the MBTA could save more than \$250 million over six years by bringing its costs into line with the 20 bus transit systems with maintenance productivity performance rankings most similar to its own in the United States.
- **The MBTA spent more than twice as much over five years as a bus transit agency with virtually identical fleet characteristics, but experienced almost three times as many major mechanical system failures:** Pioneer Institute compared the MBTA to Minneapolis-St. Paul Metro Transit, which operates in a harsh climate similar to Boston's with virtually the same number of buses of nearly-identical average age and miles traveled per year as the MBTA's. Despite the fact that the MBTA spent more than twice as much per bus mile traveled and employed 58% more full-time employees than Metro Transit over the six most-recent NTD reporting years, it incurred nearly three times as many major mechanical system failures over that period.
- **MBTA trolleybus maintenance costs are three-times higher than those of next most expensive transit agency.** The MBTA is one of the five American transit systems that operate trackless trolleybuses, the kind that drive on rubber tires and are powered by overhead electric catenary wires. The T's 2011 maintenance cost was \$11.37 per vehicle mile for these trolleybuses, nearly three times more than the next most expensive transit system, San Francisco's Muni, which incurred \$4.23 per mile in maintenance costs.
- **Massachusetts' restrictive anti-privatization law drives up MBTA costs by effectively prohibiting it from competitively procuring less expensive bus repair services:** Under the Commonwealth's so-called Pacheco Law,

the nation's most restrictive anti-outsourcing law, state managers must overcome virtually insurmountable obstacles before contracting out any service currently delivered by state employees. The MBTA's procurement director told the T's Board of Directors in December 2012 that it would cost 50% more to perform a major bus overhaul at its own facilities than to outsource the work.

- **The Pacheco Law nullified a key provision of the MBTA Management Rights Law:** When the Legislature passed Chapter 581 of the Acts of 1980 - the so-called MBTA management rights law - it granted the MBTA the right "to determine whether goods or services should be made, leased, contracted for, or purchased on either a temporary or permanent basis." The 1993 passage of the Pacheco Law nullified that right according to a February 2000 Massachusetts Supreme Judicial Court decision.
- **In instances when the Pacheco law has not prevented them from doing so, MBTA managers have jumped at the chance to outsourced bus overhauls, with great success.** The MBTA Board of Directors, Secretary of Transportation Richard Davey, and the MBTA administration have taken advantage of cost-saving opportunities available through competitive procurement in rare instances when the Pacheco Law has not prevented them from doing so because of temporary insufficiency of in-house manpower capacity to meet maintenance schedule demands, an exception in the law. In December 2012, they outsourced the full-scale "mid-life" reconstruction of 192 diesel buses to a Michigan bus refurbishing company following a competitive bidding process. The MBTA's chief procurement officer compared the cost of contracting to the in-house alternative and told the MBTA Board that it would cost 50% more to do the work in-house. The Board approved the contract, to their credit, as they had done twice before in 2008 and 2003.
- **MBTA managers have not established time performance productivity standards at MBTA bus garages even though the MBTA Management Rights Bill granted them authority to do so:** The 1980 MBTA management rights law granted the T legal authority to use performance productivity standards throughout its system, but the authority has never established or enforced them at its bus maintenance garages. MBTA officials told Pioneer Institute that the practical difficulty of instituting and enforcing time standards in the union-manned garages has dissuaded them from doing so. They have instead attempted to improve repair productivity in cooperation with the unions. Judging from the MBTA's inordinately high cost of repair in comparison to other bus transit agencies, its attempts to reduce costs through voluntary cooperation have not succeeded.
- **A proposal in the Transportation Finance Bill could grant MBTA managers additional authority to cut costs "notwithstanding any general or special law to the contrary":** The Massachusetts Senate and House of Representatives have included in their respective transportation finance proposals, now in conference committee, provisions requiring MBTA management to generate sufficient revenue to meet specific revenue-to-cost benchmarks "notwithstanding any general or special law to the contrary." If these provisions stand for the proposition that MBTA managers will be authorized to seek competitive proposals for bus maintenance services in order to reduce costs, Pioneer Institute recognizes this legislative initiative as one of the most significant steps in MBTA cost containment since passage of the management rights bill in 1980.

Pioneer Institute suggests the following reforms:

1. The Legislature and Governor should grant the MBTA authority to seek requests for proposals

from private sector bus maintenance companies and to award contracts that make financial sense.

2. The Legislature and Governor should direct the Secretary of Transportation to hire outside, independent experts to conduct a time performance productivity review at its bus maintenance facilities, comparing the MBTA's repair and maintenance time performance to other public and private bus repair facilities. Since the passage of the MBTA management rights law in 1980, the T has had legal authority to set time performance productivity standards in its bus maintenance garages, but it has never done so. T officials told Pioneer Institute that the practical difficulty of instituting and enforcing time standards in the union-manned garages has dissuaded them. It is time for an objective time performance review to be conducted to inform T management and state leaders about the status of the T's performance productivity.
3. The Legislature and Governor should exempt the MBTA from the provisions of the Pacheco Law. When the Legislature passed the MBTA Management Rights Law in 1980, it empowered T management to seek competitive bids from outside vendors to bring down costs. The Pacheco Law effectively nullified the T's ability to do so, as demonstrated by the Supreme Judicial Court of Massachusetts decision in *MBTA vs. Auditor of the Commonwealth* (430 Mass. 783). The MBTA can simply no longer afford the large and unnecessary cost of the Pacheco law.
4. Until the MBTA is exempted from the Pacheco Law, The MBTA Board of Directors, Secretary of Transportation Davey, and the MBTA administration should continue their commendable practice of taking advantage of cost-saving opportunities available through competitive procurement in rare instances when the Pacheco law does not prevent them from doing so.

The MBTA's Out-of-Control Bus Maintenance Costs

Pioneer Institute's review shows that the MBTA's bus maintenance costs are very high compared to those of other U.S. transit agencies. In 2011, the T was the 4th most expensive of the nation's 379 agency-operated bus transit systems in maintenance cost per bus mile traveled, 93.6% higher than average. The MBTA was also the 4th most expensive in maintenance cost per mile of the 79 bus transit agencies that operate at least 100 buses in maximum service. Two bus systems in New York City and one in San Francisco join the T, towering above their peer transit agencies in maintenance cost per mile. The MBTA's average annual maintenance cost was \$3.76/mile, virtually twice the \$1.94 average of the 78 other large systems. That's before fuel and maintenance facility capital costs, which are not included in the maintenance budget. Maintenance expenses include labor, fringe benefits, parts and supplies, fuel used during maintenance, and purchased repair services. The MBTA spent \$89 million on bus maintenance in 2011 and has 787 bus vehicles operated in annual maximum service (VOMS), with 850 bus vehicles available for annual maximum service (VAMS), according to the most recent NTD report in 2011. If the MBTA could bring its costs down to the national average, it would save more than \$43 million per year and more than \$250 million over six years.

One of the reasons for the MBTA's high costs is the high personnel count at its maintenance garages. According to the most recent statistics published by the U.S. Department of Transportation's National Transit Database (NTD), the MBTA ranks second among the nation's 29 largest transit systems in the number of full-time maintenance personnel employed per bus mile traveled, 63% higher than average.

Another reason is the high compensation paid to bus maintenance staff at MBTA garages. The average 2012 wage for a T bus maintenance employee was \$78,550 including overtime according to the Boston Herald's "Your Tax Dollars at Work" transparency

website. When fringe benefits are included, the average cost per full-time employee was \$111,634. Data from the Herald site shows that the forepersons at the MBTA's Charlestown and Fellsway maintenance and repair facilities earned \$194,337 and \$166,297 respectively in 2012. By comparison, Governor Patrick earned \$139,832.42 and Secretary Davey earned \$152,076.94.

These are some examples of high MBTA bus maintenance personnel wages by position in 2012:

- Top ten highest paid machinists (mechanics) averaged \$134,554; highest was \$151,363
- Top ten highest paid sheet metal workers averaged \$94,675; highest was \$98,248
- Top ten highest paid painters averaged \$86,486; highest was \$101,199
- Top ten highest paid fuelers averaged \$67,326; highest was \$79,986
- Top ten highest paid car cleaners averaged \$64,535; highest was \$89,380

In the past, when critics have taken issue with the MBTA's high maintenance and repair costs, the T has asserted that its record of maintenance reliability justifies the higher costs. Pioneer Institute examined the maintenance performance records of bus transit systems nationwide and compared the MBTA to the 20 systems with maintenance reliability records most similar to the T's. The results starkly contradict the MBTA's prior assertions that its higher costs are justified by better performance. The data analysis below compares the MBTA in the two most commonly cited performance categories: mean miles between failures and mean miles between major mechanical system failures.

The first comparison (Table 1) shows that the MBTA bus maintenance department spent more than twice as much per bus mile traveled in 2011 (the most recent NTD data available) as the average of the 20 bus systems with maintenance productivity performance records most similar to the T's in the category of

mean miles between failures. The MBTA ranked worst (21st of 21) in cost per bus mile traveled among this group of similarly performing systems. This translates to the MBTA having spent \$46.9 million more than average, based upon total miles traveled. Stated another way, the MBTA would have saved \$46.9 million in 2011 had it spent at the average rate of bus systems with similar performance records. This projects to a potential six year savings of \$281 million if the T could spend at the average rate.

The second comparison (Table 2) shows that the MBTA bus maintenance department spent nearly twice as much per bus mile traveled in 2011 as the average of the 20 bus systems with maintenance productivity performance records most similar to the T's in the category of mean miles between major mechanical system failures. The MBTA ranked second-worst (20th of 21) in cost per bus mile traveled among this group of similarly performing systems. This translates to the MBTA having spent \$43.2 million more than average, based upon total miles traveled and projects to a potential six year savings of \$259 million if the T could spend at the average rate.

Comparing the MBTA to a bus transit agency with similar fleet characteristics and service levels

Maintenance costs must be put into context to be meaningful, since maintenance spending depends on the number, type, and age of buses in the fleet, the scheduled timing of major overhauls, and other factors including bus miles traveled per year and climate. Pioneer Institute examined the most recent six years of data published in the National Transit Database to identify a bus transit system with bus fleet characteristics similar to the MBTA's for purposes of like-kind analysis to estimate how much the T could potentially save by improving cost-efficiency. Minneapolis-St. Paul Metro bus transit is one such system. Both operate in northern climates with virtually the same number of buses in maximum

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TABLE 1: MBTA BUS MAINTENANCE COST PER MILE COMPARED TO THE 20 BUS SYSTEMS WITH MAINTENANCE PERFORMANCE SCORES MOST SIMILAR TO THE MBTA's (Criteria: Mean Miles Between Failures*, most recent NTD data, 2011)

BUS TRANSIT SYSTEM	Mean Miles Between Failures	Maintenance cost per mile
Maryland Transit Administration (MTA)	5,570	\$2.90
New Jersey Transit Corporation (NJ TRANSIT)	5,600	\$2.50
The Greater Cleveland Regional Transit Authority (GCRTA)	5,610	\$2.40
San Diego Metropolitan Transit System (MTS)	5,707	\$2.20
Metropolitan Transit Authority of Harris County, Texas (Metro)	5,755	\$2.10
Washington Metropolitan Area Transit Authority (WMATA)	5,972	\$3.20
Pinellas Suncoast Transit Authority (PSTA)	6,118	\$0.70
Delaware Transit Corporation (DTC)	6,485	\$1.50
Santa Clara Valley Transportation Authority (VTA)	6,665	\$3.40
Alameda-Contra Costa Transit District (AC Transit)	6,778	\$2.60
Massachusetts Bay Transportation Authority (MBTA)	6,841	\$3.80
Spokane Transit Authority (STA)	7,222	\$1.10
Suburban Mobility Authority for Regional Transportation (SMART)	7,529	\$1.50
Palm Beach County, PalmTran, Inc.(PalmTran)	7,565	\$1.50
Sacramento Regional Transit District (Sacramento RT)	7,676	\$1.90
City of Albuquerque Transit Department (ABQ Ride)	7,739	\$1.50
Southwest Ohio Regional Transit Authority (SORTA/Metro)	8,716	\$1.90
Jacksonville Transportation Authority (JTA)	8,859	\$1.30
Pace - Suburban Bus Division (PACE)	9,735	\$1.30
Orange County Transportation Authority (OCTA)	9,983	\$1.80
Utah Transit Authority (UTA)	10,496	\$1.50
MAINTENANCE COST PER MILE - AVERAGE of 20 MOST SIMILAR BUS SYSTEMS		\$1.83
MBTA MAINTENANCE COST PER MILE		\$3.80
MBTA MAINTENANCE COST PER MILE VERSUS AVERAGE		208.2%
MBTA MAINTENANCE SPENDING PER MILE ABOVE AVERAGE		\$1.98
MBTA TOTAL COST IN EXCESS OF AVERAGE COST/MILE (23.8m MBTA bus miles in 2011)		\$46,953,042
MBTA RANKING COMPARED TO 20 MOST SIMILAR SYSTEMS (1st being best, 21st being worst)		21st

*Mean Miles Between Failures. Failures include Major Mechanical System Failures and Other Mechanical System Failures. A Major Mechanical System Failure is a failure of some mechanical element of the revenue vehicle that prevents the vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip because actual movement is limited or because of safety concerns. An Other Mechanical System Failure is a failure of some other mechanical element of the revenue vehicle that, because of local agency policy, prevents the revenue vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip even though the vehicle is physically able to continue in revenue service. Source: National Transit Database, 2011 (most up-to-date published data.)

TABLE 2: MBTA BUS MAINTENANCE COST PER MILE COMPARED TO THE 20 BUS SYSTEMS WITH MAINTENANCE PERFORMANCE RECORDS MOST SIMILAR TO THE MBTA’S (Criteria: Mean Miles Between Major Mechanical System Failures*, most recent DTD data, 2011)

BUS TRANSIT SYSTEM	Mean Miles Between Mechanical System Failures	Maintenance cost per mile
Fort Worth Transportation Authority (The T)	7,732	\$1.90
Pinellas Suncoast Transit Authority (PSTA)	7,805	\$0.70
Washington Metropolitan Area Transit Authority (WMATA)	7,825	\$3.20
Dallas Area Rapid Transit (DART)	7,914	\$1.70
Chicago Transit Authority (CTA)	7,922	\$2.40
Metro Transit System (Metro)	8,280	\$1.40
Santa Clara Valley Transportation Authority (VTA)	8,301	\$3.40
Sacramento Regional Transit District (Sacramento RT)	8,380	\$1.90
Alameda-Contra Costa Transit District (AC Transit)	8,670	\$2.60
Metropolitan Transit Authority of Harris County, Texas (Metro)	8,700	\$1.80
Massachusetts Bay Transportation Authority (MBTA)	9,400	\$3.80
Spokane Transit Authority (STA)	9,718	\$1.10
Omnitrans (OMNI)	10,865	\$1.20
Regional Transit Service, Inc. and Lift Line, Inc. (R-GRTA)	11,895	\$2.70
San Francisco Municipal Railway (MUNI)	12,036	\$4.40
Utah Transit Authority (UTA)	12,059	\$1.20
CNY Centro, Inc. (CNY Centro)	12,076	\$2.20
Rhode Island Public Transit Authority (RIPTA)	12,129	\$1.50
Charlotte Area Transit System (CATS)	12,599	\$1.40
Mass Transit Department - City of El Paso (Sun Metro)	13,243	\$1.40
Memphis Area Transit Authority (MATA)	13,486	\$1.50
MAINTENANCE COST PER MILE - AVERAGE of 20 MOST SIMILAR BUS SYSTEMS		\$1.98
MBTA MAINTENANCE COST PER MILE		\$3.80
MBTA MAINTENANCE COST PER MILE VERSUS AVERAGE		191.9%
MBTA MAINTENANCE SPENDING PER MILE ABOVE AVERAGE		\$1.82
MBTA TOTAL COST IN EXCESS OF AVERAGE COST/MILE (23.8m MBTA bus miles in 2011)		\$43,268,119
MBTA RANKING COMPARED TO 20 MOST SIMILAR SYSTEMS (1st being best, 21st being worst)		20th

*Mean Miles Between Major Mechanical System Failures. A Major Mechanical System Failure is a failure of some mechanical element of the revenue vehicle that prevents the vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip because actual movement is limited or because of safety concerns. Source: National Transit Database, 2011 (most up-to-date published data.)

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service (MBTA 774; Metro 743), the same average age of the bus fleet over the six years of data reviewed (both 6.6 years), and a similar number of annual average miles traveled per bus (33,647 mi/bus/yr for the MBTA vs. Metro's 38,818 mi/bus/yr). NTD data shows that between 2006 and 2011, the T spent \$487 million maintaining its buses. That's \$260 million more – or over twice as much – as the \$226 million the Metro spent. In 2011 the MBTA spent an average of \$113,481 on maintenance per bus operating in maximum service; Minneapolis-St. Paul Metro spent \$54,885 per bus. The MBTA employed an annual average of 644 bus maintenance employees over this six-year period, compared to 407 employees at the Metro.

The comparative data presented below (Table 3) demonstrates that staffing at MBTA garages is extraordinarily high compared to the Minneapolis-St. Paul Metro. Data also shows that the T's staffing level is far above the national average. The MBTA ranks second-highest among the nation's 29 largest transit systems in the number of full-time maintenance personnel employed per bus mile traveled, 63% higher than average, according to NTD data.

The MBTA's maintenance personnel count has been growing while that of systems like the Metro have been shrinking or remaining relatively level. For

example, over the past 12 years, the number of full-time MBTA maintenance personnel has grown from 445 to 672, while the number of full-time Metro maintenance employees decreased from 460 to 391. The total number of full-time bus maintenance personnel in public transit systems nationwide remained relatively level from 2006 to 2011, dropping from 26,887 in 2006 to 26,059. During that period, the MBTA's personnel count grew by 8%, while the Metro's shrank by 6%.

More maintenance spending, more failures

While the MBTA was spending more than twice as much per mile as Minneapolis Metro Transit for repair and maintenance, it was experiencing nearly three times as many major mechanical system failures, according to the National Transit Database. During the five-year period from 2007-2011, the MBTA experienced 14,884 major mechanical system failures (MMSF) compared to the Minneapolis Metro Transit system's 5,204. An MMSF is a failure of some mechanical element of the revenue vehicle that prevents the vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip because actual movement is limited or because of safety concerns. Examples of major bus failures include problems with brakes, doors, engine

TABLE 3: MBTA VS MINNEAPOLIS METRO MAINTENANCE COST AND STAFFING
MBTA 2006-2011 MAINTENANCE COST TWICE AS HIGH AS METRO TRANSIT (\$487M VS \$226M)
MBTA average staffing levels 58% higher than Metro Transit (644 FTE vs 407 FTE)

Year	MBTA Empl	Metro Empl	MBTA Buses (VOMS)	Metro Buses (VOMS)	MBTA mi/bus	Metro mi/bus	MBTA Budget	Metro Budget	MBTA bus age	Metro bus age
2006	622	417	758	702	38,192	42,267	\$75,464,610	\$33,400,311	6.4	6.6
2007	605	424	768	740	36,472	41,380	\$77,578,600	\$34,337,000	6.0	7.5
2008	636	395	780	747	36,308	38,401	\$78,116,200	\$38,288,700	6.0	6.1
2009	665	417	772	746	35,112	38,930	\$82,531,589	\$40,430,250	6.9	6.3
2010	665	399	778	782	34,089	38,484	\$84,694,759	\$39,719,709	6.8	6.4
2011	672	391	787	741	33,833	36,950	\$89,309,180	\$40,670,031	7.7	5.8
	644	407	774	743	33,647	38,818	\$487,694,938	\$226,846,001	6.6	6.5

cooling system, steering and front axle, rear axle and suspension and torque converters.

The MBTA performed better than Minneapolis Metro Transit over this same period in a performance category called “Other Mechanical System Failures.” According to the National Transit Database, these are non-major mechanical system failures that, because of local agency policy, prevent the revenue vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip even though the vehicle is physically able to continue in revenue service. “Mean Miles between Failures” include the total of Major Mechanical System Failures and Other Mechanical System Failures. Examples of other mechanical failures include breakdowns of fare boxes, wheelchair lifts, heating, ventilation and air conditioning (HVAC) systems and other problems not included as a major mechanical systems failure. Because other mechanical system failure statistics are dependent upon local agency policy, reported statistics are not always comparable. The NTD resource guide notes that “Since other mechanical system failures are based on local policies, there will be variation in the types and therefore, the numbers reported by different transit agencies.”

One bus system, for example, the Maryland Transit Administration, reported having experienced no “other failures” in 2011 during more than 23 million miles of bus travel.

A more directly comparable performance measurement statistic is miles between major mechanical system failures, which are defined and applied uniformly by the Federal Transit Administration. Data presented earlier in this report compared the MBTA to the 20 bus systems with performance records most similar to its own in mean miles between major mechanical failures. These failures more often disrupt commuter trips. The results showed that the MBTA spent nearly twice as much per mile in this category as similarly performing systems.

Data presented previously in this report also compared the MBTA to the 20 bus systems with performance records most similar to its own in mean miles between failures, which include both major mechanical system failures and other mean miles between failures. The results showed that the MBTA spent more than twice as much per mile as similarly performing systems in this category.

**TABLE 4: MAINTENANCE QUALITY PERFORMANCE INDICATORS
COMPARISON OF MAJOR MECHANICAL SYSTEM FAILURES 2007-2011
MBTA vs MINNEAPOLIS METRO TRANSIT**

Massachusetts Bay Transportation Authority	2007	2008	2009	2010	2011	TOTAL
Major Mechanical System Failures	4,061	2,535	2,859	2,900	2,529	14,884
Total Bus Miles	24,646,500	24,194,300	23,824,480	23,899,620	23,773,692	120,338,592
Average bus age	6.0	6.0	6.9	6.8	7.7	6.7
Major Mechanical Failures per 100,000 miles	16.5	10.5	12.0	12.1	10.6	12.4
Mean Miles Between Major Mechanical System Failures	6,069	9,544	8,333	8,241	9,400	8,085
Minneapolis Metro Transit	2007	2008	2009	2010	2011	TOTAL
Major Mechanical System Failures	1,079	990	1,122	1,156	857	5,204
Total Bus Miles	23,066,500	23,279,400	22,826,172	22,824,004	22,697,869	114,693,945
Average bus age	7.5	6.1	6.3	6.4	5.8	6.4
Major Mechanical Failures per 100,000 miles	4.7	4.3	4.9	5.1	3.8	4.5
Mean Miles Between Major Mechanical System Failures	21,378	23,515	20,344	19,744	26,485	22,040

Trackless trolley maintenance contributes to high costs

Bus maintenance is not the only vehicle maintenance area in which the MBTA lags behind its peer agencies in relative frugality. Of the five U.S. transit systems that operate trackless trolleybuses, the MBTA's 2011 maintenance cost was nearly three times more than the next most expensive. The T's cost was \$11.37 per vehicle mile, while the next most expensive system, San Francisco's Muni, incurred \$4.23 per mile in maintenance costs. The MBTA completely replaced its fleet of trackless trolleys in 2004 with 28 new Neoplan electric trolley buses. The T uses the new trackless trolleybuses on four routes connecting Watertown Square, Harvard Square, Waverly Square, and Arlington Heights. The MBTA's 2011 trolleybus maintenance expenses were 4.3 times more per mile than the average of its four peer transit agencies, according to the NTD's most recent published data. Over a four-year period from 2008-2011, the MBTA's maintenance cost was \$8.73/mile, three-and-a-half times higher than the average of the four peer agencies.

The Pacheco Law is preventing the MBTA from saving millions in annual maintenance costs

One reason MBTA costs are so high is that the hands of T administrators are tied when it comes

to reducing costs. A 1993 state law known as the Pacheco Law (MGL c.7, s.52-55) effectively prohibits them from outsourcing bus repair work. Under the anti-privatization law, the nation's most restrictive, state managers must overcome virtually insurmountable obstacles before contracting out any service currently delivered by state employees. If a state agency such as the MBTA endeavors to solicit bids, the law requires the agency to mathematically adjust an outside bidder's proposed price to negate advantages attributable to greater cost efficiency. This mind-numbing protectionist provision makes state managers compare the outside bid prices to what state costs would hypothetically be if state employees were to work "in the most cost-efficient manner," even though the state employees have not been working in that manner and will not be held to that standard if the work is kept in-house.

In addition, the law requires that winning bidders offer jobs to incumbent employees at state employee pay rates and count the cost of any state-incurred unemployment and retirement benefits against their price proposal. Even if a state agency can manage to overcome all these hurdles, the state auditor can independently strike down any contract he or she determines is "not in the public interest." MBTA officials told Pioneer Institute that the Pacheco Law governs the MBTA's ability to competitively procure services from outside vendors.

**TABLE 5: TRACKLESS TROLLEYBUS MAINTENANCE COST/MILE (2008-2011)
MBTA'S VS ALL OTHER TRACKLESS TROLLEYBUS TRANSIT OPERATORS
MBTA 3 ½ TIMES HIGHER THAN AVERAGE COST OF OTHER AGENCIES (\$8.73/MI VS. \$2.49/MI)**

Trackless trolleybus public transit operators	2011 avg trolleybus age	2011 maint cost/mi	2008-2011 avg trolleybus age	2008-2011 avg maint cost/mi
Southeastern Pennsylvania Transportation Authority (SEPTA)	3.0	\$1.40	1.5	\$1.35
Greater Dayton Regional Transit Authority (GDRTA)	13.0	\$1.50	11.5	\$1.58
King County DOT - Metro Transit Division (King County Metro)	13.0	\$3.50	11.6	\$3.48
San Francisco Municipal Railway (MUNI)	11.8	\$4.40	10.4	\$3.55
Massachusetts Bay Transportation Authority (MBTA)	7.0	\$11.40	6.6	\$8.73

The MBTA's procurement director told the T's Board of Directors in December 2012 that it would cost 50% more to perform a major bus overhaul at its own facilities than to outsource the work. When MBTA administrators have been free to outsource major repair work due to temporary shortages of in-house capacity - an exception in the Pacheco law - they have captured huge cost savings as cited by the MBTA's procurement director. Pioneer Institute proposes that the Legislature amend the Pacheco law to allow MBTA administrators to solicit bids from private sector bus repair companies and to award contracts when savings are demonstrated.

Under the provisions of Chapter 581 of the Acts of 1980, the so-called MBTA management rights law, the MBTA and its unions are prohibited from including in collective bargaining agreements certain matters of inherent management rights, including the right "to determine whether goods or services should be made, leased, contracted for, or purchased on either a temporary or permanent basis."

Subsequent to passage of the management rights law, however, the Legislature adopted the Pacheco Law, effectively trumping the management rights law when it comes to the MBTA's ability to outsource bus repairs. In February of 2000, the Supreme Judicial Court of Massachusetts confirmed, in *MBTA vs. Auditor of the Commonwealth* (430 Mass. 783), that the MBTA is prohibited from contracting for services in instances where the contracting runs afoul of the Pacheco Law.

MBTA managers are not taking full-advantage of the management rights law

A different provision of the MBTA management rights law prohibits the T and its unions from including in collective bargaining agreements any limitation of MBTA managers' right "to direct, supervise, control, and evaluate the departments, units, and programs of the authority; to classify the various positions

of the authority and ascribe duties and standards of productivity therefore." Therefore, since the passage of the MBTA management rights law in 1980, the T has had legal authority to set time performance productivity standards in its bus maintenance garages, but it has never done so.

Practical, real-life constraints on MBTA management's ability to effectuate maintenance productivity improvements were cited in a 2002 report entitled "Maintenance Productivity Practices" by the Transit Cooperative Research Program (TCRP) sponsored by the Federal Transit Administration. In its report, the TCRP described the benefits of instituting time performance standards in the repair and maintenance of transit vehicles at public transit agencies. The authors reported that they had interviewed MBTA maintenance administrators and concluded that "there are no restrictions in the union labor agreement on the use of repair times." But the authors also reported that MBTA officials had told them that "if the T wanted to require that maintenance employees meet time standards, it would have to negotiate with the unions."

Since publication of that report, no time standards for repairs have been instituted, according to MBTA officials with whom Pioneer Institute spoke. T officials told Pioneer Institute that the practical difficulty of instituting and enforcing time standards in the union-manned garages has dissuaded them from doing so. They have instead attempted to improve repair productivity in cooperation with the MBTA unions. Much of the financial benefit gained from the MBTA's outsourcing of repair work is attributable to better time performance on repairs performed at private sector garages. Judging from the MBTA's inordinately high cost of repair compared to other bus transit systems since then, its efforts at reducing costs through informal cooperation have not been effective.

The Massachusetts Senate and House of Representatives are considering granting the MBTA more power to cut costs

The Massachusetts Senate and House of Representatives have included in their respective transportation finance proposals, now in conference committee, provisions requiring MBTA management to generate sufficient revenue to meet specific revenue-to-cost benchmarks “notwithstanding any general or special law to the contrary.” Section 53 of Senate Bill 1766 and Section 28 of House Bill 3382 direct the MBTA to increase its revenue contribution to 34 percent of its operating budget by 2018, establishing a series of annual benchmarks between now and then.

One of the “general laws to the contrary” that currently constrains the MBTA in cost-cutting is the Pacheco Law. There are only two ways for the MBTA to increase its revenue-to-cost ratio: by increasing revenue or by decreasing cost. The Pacheco Law stands squarely in the way of the MBTA decreasing its costs by effectively prohibiting it from taking advantage of substantial savings available through competitive procurement of bus repair services, as well as of other services. By virtue of its prior history of passing the management rights bill and its more recent adoption of each body’s respective sections of the transportation finance bill, the Legislature has demonstrated its willingness to empower MBTA management to control costs. The Pacheco Law is a statutorily imposed constraint on T management that effectively undercuts its ability to bring down costs. If Section 53 of the Senate transportation finance bill and Section 28 of the House bill stand for the proposition that MBTA managers will be authorized to seek competitive proposals for bus maintenance services, Pioneer Institute recognizes this legislative initiative as one of the most significant steps in MBTA cost containment since passage of the management rights bill in 1980.

Saving with competitive procurement

The MBTA Board of Directors, Secretary of Transportation Richard Davey, and the MBTA administration have taken advantage of cost-saving opportunities available through competitive procurement in rare instances when the Pacheco law has not prevented them from doing so because of insufficient in-house manpower capacity to meet schedule demands, an exception to the Pacheco Law. In December of 2012, they outsourced the full-scale “mid-life” reconstruction of 192 Neoplan diesel buses purchased by the MBTA in 2004/2005 to a Michigan bus refurbishing company following a competitive bidding process. The 192 Neoplan diesel buses constituted 22.5% of the buses the T needed for maximum service, which was 850 in 2011, according to the NTD data. The MBTA’s decision to outsource followed the recommendations of a transportation consulting company whose hiring was approved by the MBTA Board of Directors. Saving money was on board members’ minds when they voted to outsource the bus overhauls. Meeting minutes indicate that the board’s chair asked the MBTA’s chief procurement officer to compare the cost of contracting to the in-house alternative. She responded that it would cost 50% more to do the work in-house. The board then approved the contract.

About four years earlier, on November 6, 2008, the MBTA Board authorized a contract with the same company, Midwest Bus Corporation, Inc, for the rehabilitation/mid-life overhaul of 123 of the MBTA’s 299 NABI low-floor CNG Transit Buses, while agreeing that the T would rehabilitate the remaining 176 NABI CNG buses at its Everett main repair facility. The MBTA had previously experimented with the outsourcing concept. On August 7, 2003, the board authorized a contract for the rehabilitation/mid-life overhaul of 125 TMC-NOVA diesel transit buses, while more than 200 were overhauled in-house.

Pioneer Institute has long advocated for state government leaders to capture savings by competitively procuring services from the private

marketplace when it makes financial sense to do so. The MBTA privatization initiative stands as one of the most significant outsourcing actions taken by Massachusetts state government since the Pacheco law was enacted in 1993.

The MBTA's recent outsourcing of a portion of its major bus overhauls stands as a tangible example of the enormous savings that could be realized if the T were allowed to competitively procure bus maintenance. So far, the MBTA has been able to outsource only in rare instances where their in-house capacity is insufficient to meet the required schedule. According to MBTA officials, T unions strongly object to outsourcing and agree to it only when in-house capacity is insufficient. As explained earlier, the MBTA procurement director told the MBTA board that it would cost 50% more to do a major bus overhaul in-house than to outsource the work using a competitive bid process. This highlights the counter-productive effect of the Pacheco law.

Recommendations

Mid-life bus overhauls and recent new bus purchases have resulted in the MBTA having a much younger bus fleet than in previous decades. By the end of 2006, the T had replaced nearly two-thirds of its bus fleet with 631 new vehicles. Mid-life rehabilitation has given new life to its older buses. Despite these capital initiatives, the MBTA's bus maintenance spending remains extraordinarily high. Given the board of directors' demonstrated willingness to capture substantial savings through competitive bus repair procurement, Pioneer Institute thinks that it is time for the Legislature and the Governor to intervene to bring down the MBTA's maintenance costs.

1. The Legislature and Governor should grant the MBTA authority to seek requests for proposals from private sector bus maintenance companies and to award contracts that make financial sense.
2. The Legislature and Governor should direct the Secretary of Transportation to hire outside, independent experts to conduct a time

performance productivity review at its bus maintenance facilities, comparing the MBTA's repair and maintenance time performance to other public and private bus repair facilities. Since the passage of the MBTA management rights law in 1980, the T has had legal authority to set time performance productivity standards in its bus maintenance garages, but it has never done so. T officials told Pioneer Institute that the practical difficulty of instituting and enforcing time standards in the union-manned garages has dissuaded them. It is time for an objective time performance review to be conducted to inform T management and state leaders about the status of the T's performance productivity.

3. The Legislature and Governor should exempt the MBTA from the provisions of the Pacheco Law. When the Legislature passed the MBTA Management Rights Law in 1980, it empowered T management to seek competitive bids from outside vendors to bring down costs. The Pacheco Law effectively nullified the T's ability to do so, as demonstrated by the Supreme Judicial Court of Massachusetts decision in *MBTA vs. Auditor of the Commonwealth* (430 Mass. 783). The MBTA can simply no longer afford the large and unnecessary cost of the Pacheco law.
4. Until the MBTA is exempted from the Pacheco Law, The MBTA Board of Directors, Secretary of Transportation Davey, and the MBTA administration should continue their commendable practice of taking advantage of cost-saving opportunities available through competitive procurement in rare instances when the Pacheco law does not prevent them from doing so.



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