

2015 MBTA Bus Maintenance Costs Were Nation's Highest

Written by Gregory W. Sullivan



Pioneer's Mission

Pioneer Institute is an independent, non-partisan, privately funded research organization that seeks to improve the quality of life in Massachusetts through civic discourse and intellectually rigorous, data-driven public policy solutions based on free market principles, individual liberty and responsibility, and the ideal of effective, limited and accountable government.



This paper is a publication of Pioneer Public, which seeks limited, accountable government by promoting competitive delivery of public services, elimination of unnecessary regulation, and a focus on core government functions. Current initiatives promote reform of how the state builds, manages, repairs and finances its transportation assets as well as public employee benefit reform.



Pioneer Education seeks to increase the education options available to parents and students, drive system-wide reform, and ensure accountability in public education. The Center's work builds on Pioneer's legacy as a recognized leader in the charter public school movement, and as a champion of greater academic rigor in Massachusetts' elementary and secondary schools. Current initiatives promote choice and competition, school-based management, and enhanced academic performance in public schools.



Pioneer Health seeks to refocus the Massachusetts conversation about health care costs away from government-imposed interventions, toward market-based reforms. Current initiatives include driving public discourse on Medicaid; presenting a strong consumer perspective as the state considers a dramatic overhaul of the health care payment process; and supporting thoughtful tort reforms.



Pioneer Opportunity seeks to keep Massachusetts competitive by promoting a healthy business climate, transparent regulation, small business creation in urban areas and sound environmental and development policy. Current initiatives promote market reforms to increase the supply of affordable housing, reduce the cost of doing business, and revitalize urban areas.

Table of Contents

Figure 1: Bus Transit Agencies and 2014 INTDAS Peer Likeness Scores	4
Figure 2. The MBTA had the highest cost of vehicle maintenance per hour of bus operation of its six peer transit agencies in 2015	5
Figure 3. The MBTA would have saved \$43.7 million in 2015 if bus vehicle maintenance expense per hour of bus operation were reduced to the average of its five transit peer agencies	5
Figure 4. The MBTA had the highest cost of vehicle maintenance per hour of bus operation of the 25 largest public transit agencies in the U.S. in 2015	6
Figure 5. The MBTA had the highest number of vehicle maintenance labor hours per 1000 hours of bus operation of the six peer transit in 2015	7
Figure 6. The MBTA had the second highest number of vehicle maintenance labor hours per 1000 hours of bus operation of the 25 largest public transit agencies in the U.S. in 2015	9
Figure 7. The MBTA had the highest total labor salaries for vehicle maintenance per hour of bus operation of its six peer transit agencies in 2015	9
Figure 8. The MBTA had the highest total labor salaries for vehicle maintenance per hour of bus operation of the 25 largest public transit agencies in the U.S. in 2015	10



The MBTA's Fiscal and Management Control Board is currently considering outsourcing bus maintenance services at four of its nine MBTA garages, outsourcing some major repairs at another garage, and executing agreements with T unions to reduce costs to private market rates at another. Such outsourcing was authorized by the state legislature in June 2015.

The MBTA estimates that its hybrid plan could save up to \$26 million annually. This report demonstrates that this estimate is realistic by showing that the MBTA could have saved \$43.7 million had it outsourced all bus maintenance services in 2015 and been able to reduce its vehicle maintenance expense per hour of bus operation to the average of its five peer transit agencies.

This report uses the most recent data from the National Transit Database (NTD), a federal reporting program for transit agencies that receive Federal Transit Administration (FTA) funding, to compare 2015 MBTA bus maintenance expenses with those of other transit agencies. Pioneer Institute has previously urged the MBTA to undertake such a competitive procurement, estimating that outsourcing bus maintenance to private firms could save \$49.7 million per year.

This report compares MBTA bus maintenance costs with those of five transit agencies identified as peers by the Integrated National Transit Database Analysis System. INTDAS is a web database system designed for retrieval and analysis of data from the National Transit Database (NTD) and is partially funded by the Federal Transit Administration under the direction and leadership of the Florida Department of Transportation's Transit Information System. As one of its many useful functions, INTDAS includes an online automated transit agency peer selection process that identifies comparable transit systems for peer analyses.

The report also compares MBTA bus maintenance costs with those of the 25 U.S. public transit agencies with the largest total bus maintenance expenses in 2015.

The peer transit agencies utilized in this report represent all five transit systems identified by INTDAS as having "likeness scores" high enough not to be deemed "undesirable due to a large number of differences with the target agency." Likeness scores are used to determine the level of similarity between a potential peer agency and the target agency both with respect to individual factors (e.g., urban area population, modes operated, and service areas) and for the agencies overall. According to INTDAS:

[A] total likeness score of 0 indicates a perfect match between two agencies (and is unlikely to ever occur). Higher scores indicate greater levels of dissimilarity between two agencies. In general, a total likeness score

"...the MBTA could have saved \$43.7 million had it outsourced all bus maintenance services in 2015..."

under 0.50 indicates a good match, a score between 0.50 and 0.74 represents a satisfactory match, and a score between 0.75 and 0.99 represents potential peers that may usable, but care should be taken to investigate potential differences that may make them unsuitable. Peers with scores greater than or equal to 1.00 are undesirable due to a large number of differences with the target agency, but may occasionally be the only candidates available to fill out a peer group.

As shown in Figure 1, the five transit systems used in this analysis received the following transit peer likeness scores for 2014, the most recent year reported by the automated INTDAS system, using the MBTA as the target agency. All other U.S. bus transit systems received likeness scores higher than 1.0 and were therefore deemed undesirable due to a large number of differences with the MBTA.

FIGURE 1. Bus Transit Agencies and 2014 INTDAS Peer Likeness Scores

Bus Public Transit Agency Name	Location	State	Likeness Score
Massachusetts Bay Transportation Authority	Boston	MA	0.00
Maryland Transit Administration	Baltimore	MD	0.42
Washington Metropolitan Area Transit Authority	Washington	DC	0.70
Southeastern Pennsylvania Transportation Authority	Philadelphia	PA	0.72
Miami-Dade Transit	Miami	FL	0.88
Metropolitan Atlanta Rapid Transit Authority	Atlanta	GA	0.97

In 2015, the MBTA had the highest vehicle maintenance cost per hour of bus operation of the six transit agencies identified as peers by INTDAS, as shown in Figure 2. The MBTA's maintenance cost was \$44.30 per hour of bus operation, 68.7 percent higher than the average of \$ The MBTA estimates that its hybrid plan could save up to \$26 million annually. This report demonstrates that this estimate is realistic by showing that the MBTA could have saved \$43.7 million had it outsourced all bus maintenance services in 2015 and been able to reduce its vehicle maintenance expense per hour of bus operation to the average of its five peer transit agencies per hour of bus operation of the other five agencies. This efficiency measure computes total vehicle maintenance expenses per hour of bus operation, which are defined by NTD as "Actual Passenger Car Hours — the hours that passenger cars travel while in revenue service (actual passenger car revenue hours) plus deadhead hours." Deadhead hours are "hours that a vehicle travels when out of revenue service."

Figure 2. The MBTA had the highest cost of vehicle maintenance per hour of bus operation of its six peer transit agencies in 2015.

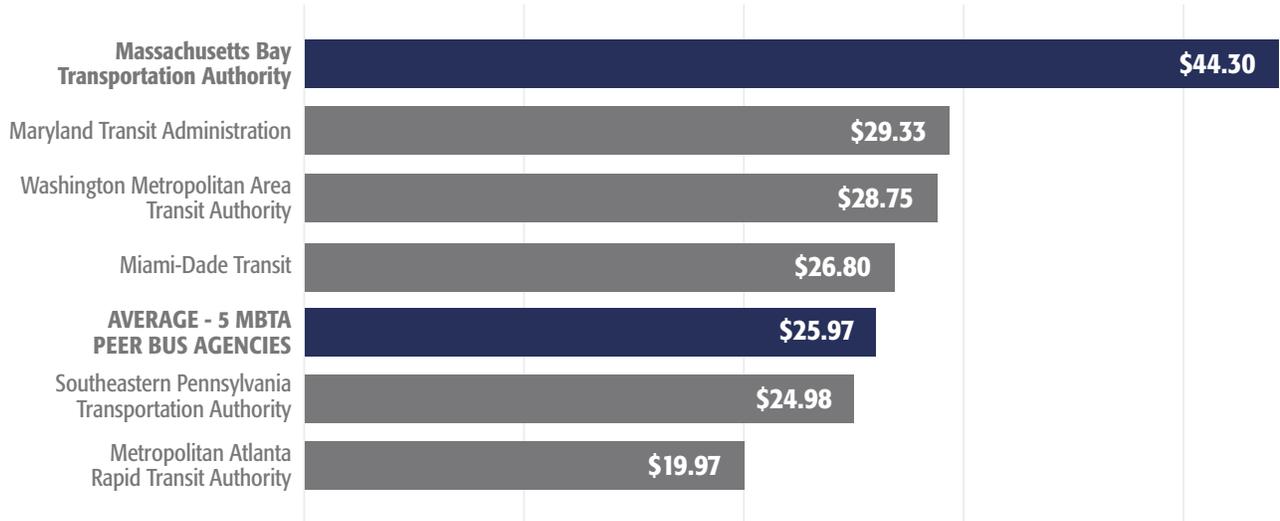


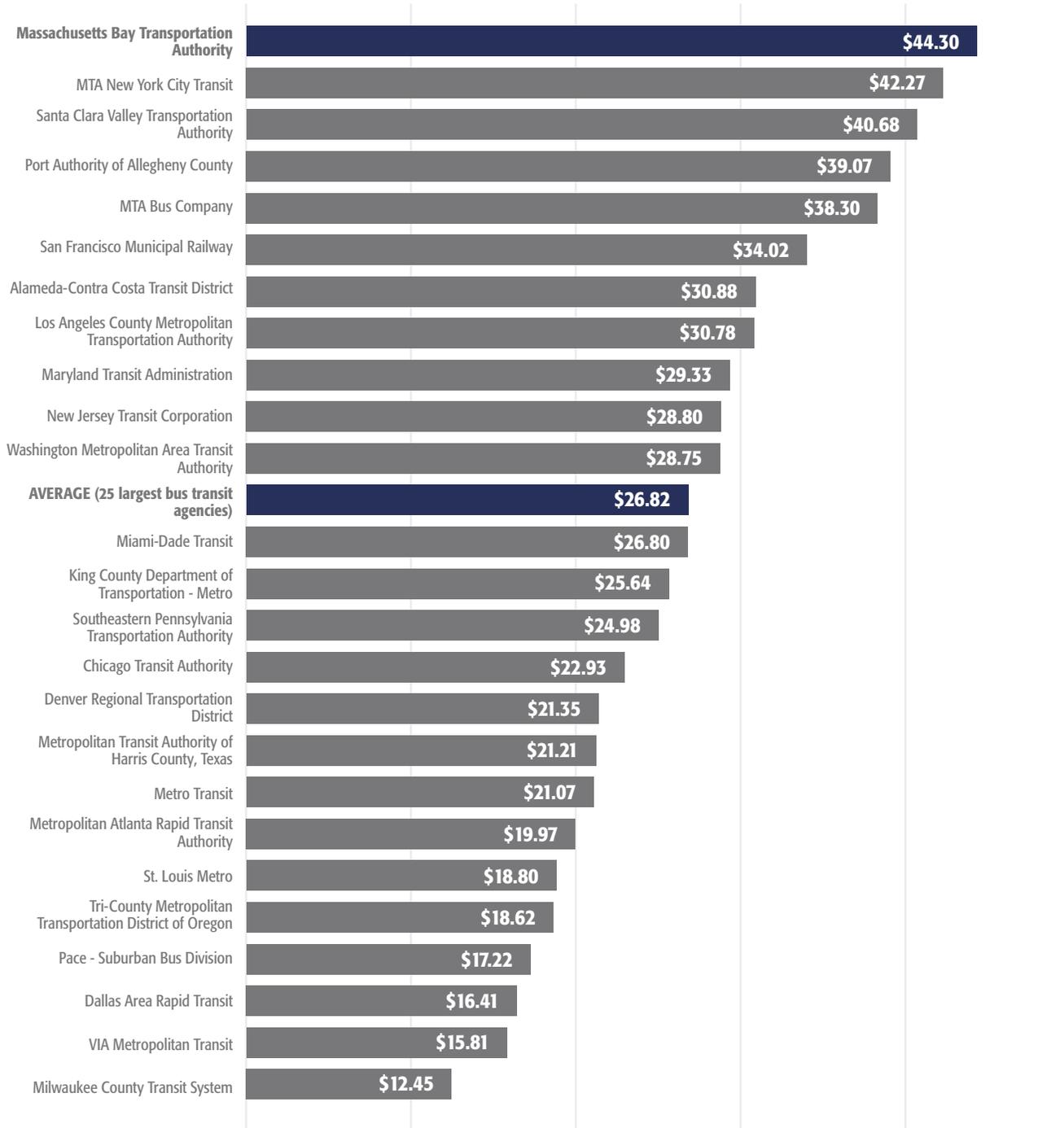
Figure 3 below demonstrates that if the MBTA’s cost per hour had been brought in line in 2015 with the average of its five peers, i.e. \$26.26 per hour of bus operation, the T’s bus maintenance costs would have been reduced by \$43,686,588 (from \$107,281,759 to \$63,595,171).

Figure 3. The MBTA would have saved \$43.7 million in 2015 if bus vehicle maintenance expense per hour of bus operation were reduced to the average of its five transit peer agencies.

Transit Agency	Bus Maintenance Expenses	Bus Hours of Operation	Maintenance Expense/Hour
Metropolitan Atlanta Rapid Transit Authority	\$40,816,337	2,044,053	\$19.97
Southeastern Pennsylvania Transportation Authority	\$109,027,994	4,363,755	\$24.98
Miami-Dade Transit	\$70,608,154	2,634,853	\$26.80
Washington Metropolitan Area Transit Authority	\$129,132,191	4,491,485	\$28.75
Maryland Transit Administration	\$55,644,817	1,897,190	\$29.33
Massachusetts Bay Transportation Authority	\$107,281,759	2,421,735	\$44.30
5 MBTA Peer Agencies	\$405,229,493	15,431,336	\$26.26
MBTA if at Peer Average	\$63,595,171	2,421,735	\$26.26
MBTA savings if at Peer Average	\$43,686,588		

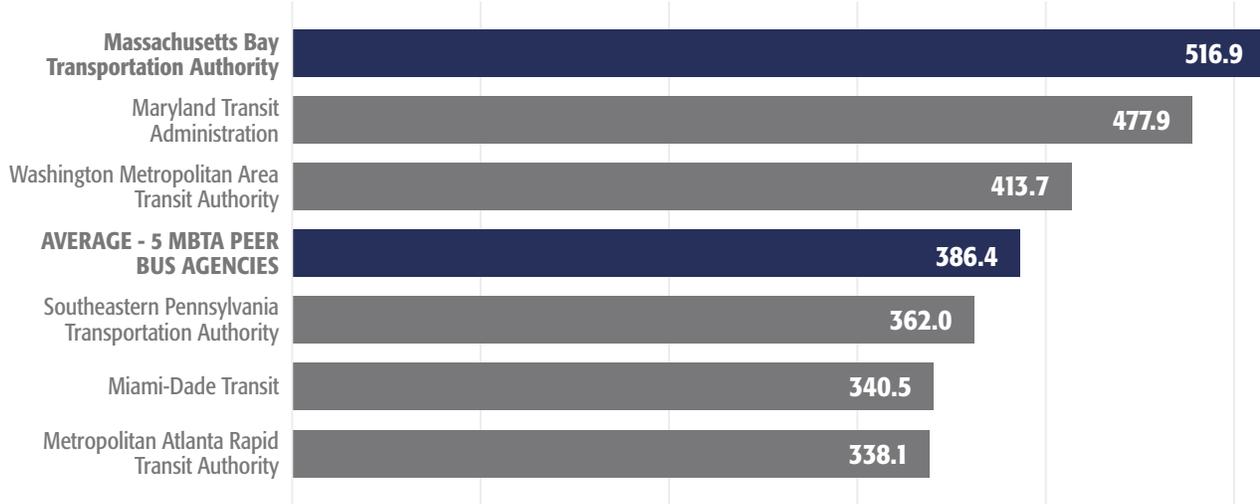
In 2015, the MBTA had the highest vehicle maintenance cost per hour of bus operation among the 25 largest public transit agencies in the U.S. as shown in Figure 4. MBTA maintenance costs were \$44.30 per hour of bus operation, 65.2 percent more expensive than the average of \$26.82 per hour of bus operation of the 25 largest public transit bus agencies.

Figure 4. The MBTA had the highest cost of vehicle maintenance per hour of bus operation of the 25 largest public transit agencies in the U.S. in 2015.



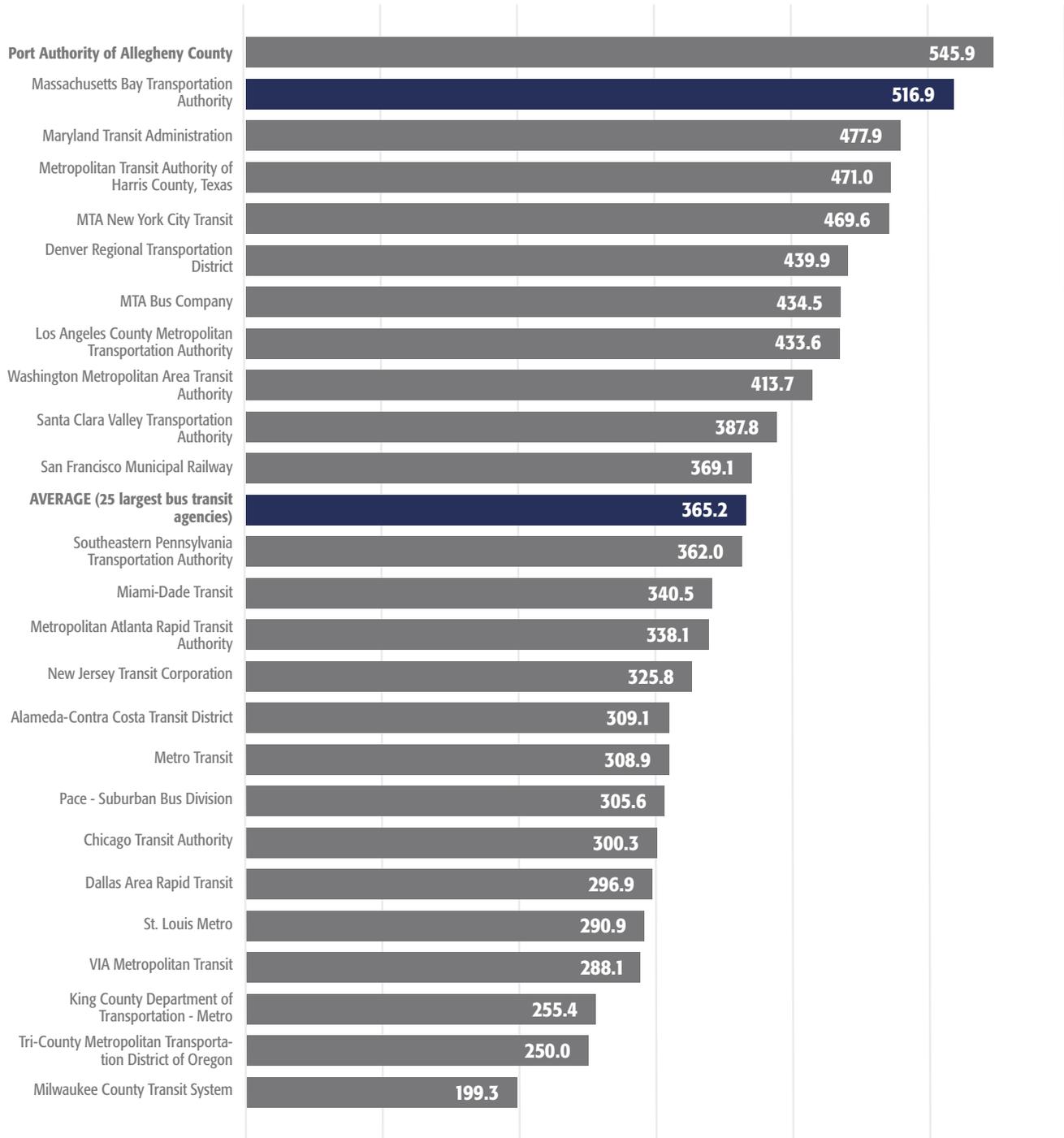
In 2015, the MBTA had the highest number of vehicle maintenance labor hours per hour of bus operation among the six peer transit agencies identified by INTDAS, as shown in Figure 5. The T had 516.9 bus maintenance labor hours per 1000 hours of bus operations, 33.8 percent higher than the average of 386.4 per hour of the other five agencies.

Figure 5. The MBTA had the highest number of vehicle maintenance labor hours per 1000 hours of bus operation of the six peer transit in 2015.



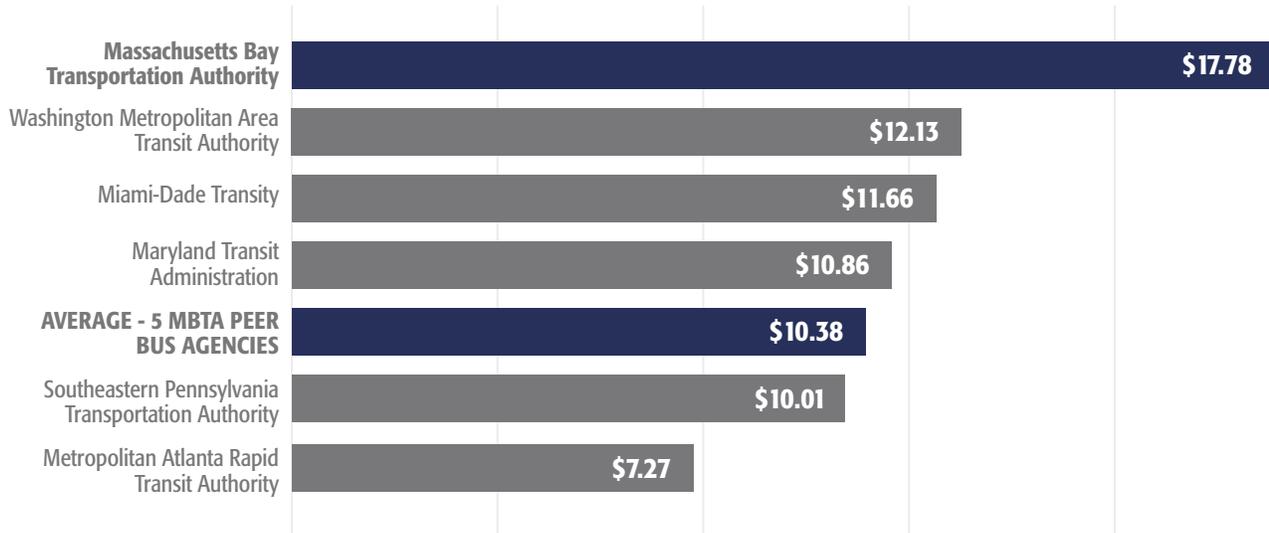
In 2015, the MBTA had the second-highest number of vehicle maintenance labor hours per hour of bus operation among the 25 largest U.S. public transit agencies, as shown in Figure 6. The MBTA had 516.9 bus maintenance labor hours per 1000 hours of bus operations, 41.5 percent higher than the average of 365.2 hours of the 25 largest public transit bus agencies.

Figure 6. The MBTA had the second highest number of vehicle maintenance labor hours per 1000 hours of bus operation of the 25 largest public transit agencies in the U.S. in 2015.



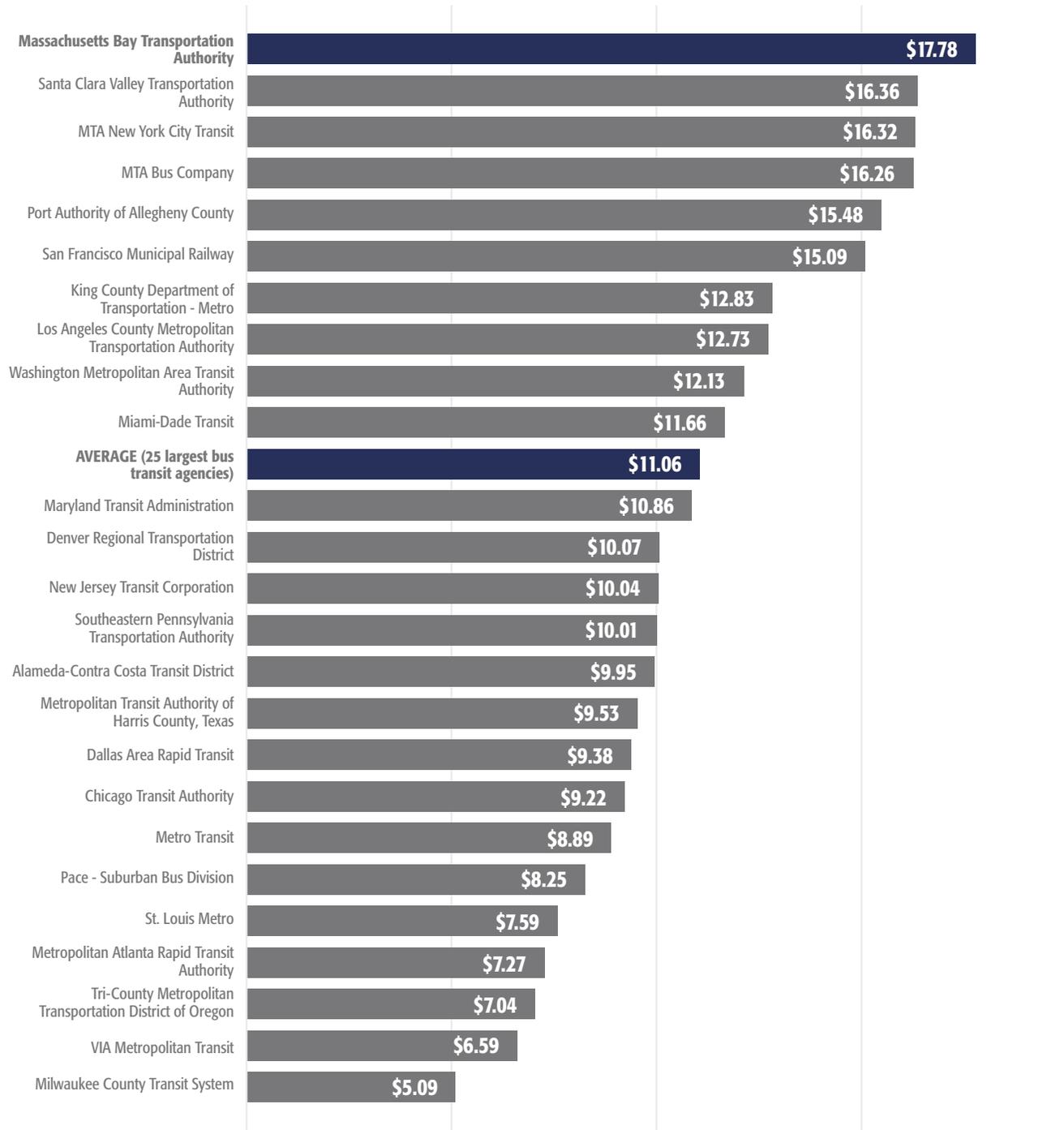
In 2015, the MBTA had highest total labor salaries for vehicle maintenance per hour of bus operation among the six peer transit agencies identified by INTDAS, as shown in Figure 7. The MBTA had \$17.78 in maintenance salaries per hour of bus operation, 71.2 percent more than the average of \$10.38 in labor salaries per hour of bus operations of the other five peer agencies.

Figure 7. The MBTA had the highest total labor salaries for vehicle maintenance per hour of bus operation of its six peer transit agencies in 2015.



In 2015, the MBTA had highest total labor salaries for vehicle maintenance per hour of bus operation among the 25 largest public transit agencies in the U.S. as shown in Figure 8. The MBTA had \$17.78 in maintenance salaries per hour of bus operation, 60.8 percent more than the average of \$11.06 in labor salaries per hour of bus operations of the other five peer agencies.

Figure 8. The MBTA had the highest total labor salaries for vehicle maintenance per hour of bus operation of the 25 largest public transit agencies in the U.S. in 2015.



1. <https://www.transit.dot.gov/ntd/national-transit-database-ntd-glossary>. Accessed March 8, 2017.

About the Author

Gregory W. Sullivan is Pioneer's Research Director, and oversees the Centers for Better Government and Economic Opportunity. Prior to joining Pioneer, Sullivan served two five-year terms as Inspector General of the Commonwealth of Massachusetts, where he directed many significant cases, including a forensic audit that uncovered substantial health care over-billing, a study that identified irregularities in the charter school program approval process, and a review that identified systemic inefficiencies in the state public construction bidding system. Prior to serving as Inspector General, Greg held several positions within the state Office of Inspector General, and was a 17-year member of the Massachusetts House of Representatives. Greg is a Certified Fraud Investigator, and holds degrees from Harvard College, The Kennedy School of Public Administration, and the Sloan School at MIT.

About Pioneer

Pioneer Institute is an independent, non-partisan, privately-funded research organization that seeks to change the intellectual climate in the Commonwealth by supporting scholarship that challenges the "conventional wisdom" on Massachusetts public policy issues.

