

4.0 PEER COMPARISON AND TREND ANALYSIS

Miami-Dade Transit (MDT) is in the process of developing the Fiscal Year 2015-2024 Transit Development Plan (TDP) Major Update. A component of the TDP Major Update is a peer comparison and trend analysis for each mode that MDT operates.

4.1 Peer Comparison Overview

A peer review analysis was conducted for Miami Dade Transit's (MDT) fixed-route bus (Metrobus), heavy rail (Metrorail), and automated guideway/people mover service (Metromover), as well as MDT's demand response service (Special Transportation Services), to compare its performance with other transit systems having similar characteristics. The review was conducted using data from the National Transit Database (NTD), which is a standard database maintained by the Federal Transit Administration (FTA) and to which all US Federally-funded transit agencies must provide information each year. As part of the peer review process, selected operating and financial performance measures are provided to illustrate the performance of MDT's service modes relative to the peer group. The purpose of the peer review is to evaluate the efficiency and effectiveness of MDT service operations as compared to peer agencies.

4.1.1 Peer System Selection Methodology

Peers were selected based on a review of the peers selected during the last TDP as well as consultation with MDT staff. Peers were also selected based on their similarities to MDT's operating service characteristics (Table 4-1).

4.2 Trend Analysis Overview

Part of the methodology requires an analysis on the performance of their various services over the past six years from 2007 through 2012. This report summarizes the data used for the analysis as obtained from the FTA National Transit Database and the results of the analysis. The following data were downloaded from the National Transit Database for years 2007 through 2012 for each mode of transit:

- Route miles
- Unlinked passenger trips
- Average fleet age (calculated using manufacture year of vehicles)
- Passenger miles traveled and average passenger trip length
- Vehicle revenue hours and miles
- Passenger trips per revenue hour and mile
- Operating expenses per passenger trip and revenue hour
- Weekend service availability
- Operating and maintenance expenses

- Fare revenues and farebox recovery ratio

4.3 Findings Summary

This peer and trend review of MDT's service suggests that MDT's service generally fall within the normal range for its peers and that trends are generally positive or normal for the time period analyzed. A summary of several findings are provided below:

- **Metrobus Service:** The volume of Metrobus service has declined over the analysis period which has resulted in a decrease in unlinked passenger trips as well as a decline in revenue hours and revenue miles. However, within the last two years passenger trips are increasing while revenue hours and miles remain steady. Farebox revenues have been increasing annually with a 27.7 percent farebox recovery ratio.
- **Metrorail Service:** Metrorail service has low passenger productivity and a high cost per passenger trip in comparison with peer agencies that operate heavy rail service. In comparison to its peers, MDT's Metrorail vehicle fleet has the highest average age. Passenger trips continue to increase with average passenger trip length being more than seven miles which is the longest when compared to with other heavy rail peer systems.
- **Metromover Service:** MDT's Metromover has the highest level of unlinked passenger trips and high passenger productivity compared with peer agencies. All of the peers charge a fare for their systems. MDT, however, does not.
- **Special Transportation Service:** Passenger trips have remained fairly steady and average trip lengths have slightly declined over the last six years. MDT had the second highest passenger trips as well as the second highest fare revenues compared with peer agencies.

Table 4-1: Peer Agencies

Agency	Location	Metrobus	Metrorail	Metromover	Special Transportation Service (STS)
		Bus	Heavy Rail	Automated Guideway	Paratransit/Demand Response
Broward County Transit Division (BCT)	Plantation, FL	PEER			
Jacksonville Transportation Authority (JTA)	Jacksonville, FL	PEER		PEER	
King County Department of Transportation (King County Metro)	Seattle, WA	PEER			
Massachusetts Bay Transportation Authority (MBTA)	Boston, MA	PEER	PEER		
Southeastern Pennsylvania Transportation Authority (SEPTA)	Philadelphia, PA	PEER	PEER		PEER
Washington Metropolitan Area Transit Authority (WMATA)	Washington, DC	PEER	PEER		
Maryland Transit Administration (MTA)	Baltimore, MD	PEER	PEER		PEER
Metropolitan Atlanta Rapid Transit Authority (MARTA)	Atlanta, GA	PEER	PEER		
The Greater Cleveland Regional Transit Authority (GCRTA)	Cleveland, OH	PEER	PEER		PEER
Chicago Transit Authority (CTA)	Chicago, IL	PEER	PEER		
Detroit Transportation Corporation (DTC)	Detroit, MI			PEER	
Metropolitan Transit Authority - Harris County (MTA Harris County)	Houston, TX				PEER

4.4 Bus Peer Comparison and Trend

Table 4-2 compares MDT and the selected peer agencies in a wide range of measures relating to their operation of fixed-route bus service. Table 4-3 presents the trend of the six years of data as made available from the NTD for the operation and performance of MDT's fixed-route Metrobus service.

The trend analyses allow MDT to assess how bus service has changed over the last several years and can suggest potential areas of service that should be further examined or adjusted to improve performance.



Table 4-2: Bus Peer Comparison (2012)

Agency	MDT	BCT	JTA	King County Metro	MBTA	SEPTA	WMATA	MTA	MARTA	GCRTA	CTA	Peer Mean
City	Miami, FL	Plantation, FL	Jacksonville, FL	Seattle, WA	Boston, MA	Philadelphia, PA	Washington, DC	Baltimore, MD	Atlanta, GA	Cleveland, OH	Chicago, IL	
Route Miles	1,923.20	1,117.60	972.3	1,951.10	1,797.00	2,502.70	2,628.40	1,064.00	1,445.50	1,485.90	1,317.70	1,655.04
Unlinked Passenger Trips	77,858,973	37,917,735	11,500,899	95,592,084	116,468,455	189,040,211	136,795,328	73,574,828	61,596,727	33,857,969	314,423,578	104,420,617
Average Age (yrs.) of Bus Fleet	8.84	5.76	6.46	7.59	7.41	2.85	4.09	7.66	8.71	8.56	6.58	6.77
Passenger Miles Traveled	442,282,825	180,294,017	70,451,983	458,098,243	301,812,834	561,647,331	415,814,008	228,817,715	228,212,492	144,368,655	725,064,380	341,533,135
Average Passenger Trip Length	5.68	4.75	6.13	4.79	2.59	2.97	3.04	3.11	3.7	4.26	2.31	3.94
Vehicle Revenue Hours	2,412,709	993,637	603,438	2,768,315	2,404,138	4,009,611	3,901,279	1,750,948	1,876,643	1,035,774	5,658,426	2,492,265
Vehicle Revenue Miles	28,838,288	13,675,110	8,839,795	33,317,426	24,222,296	40,577,223	40,327,909	19,063,338.00	22,803,997	12,224,802	52,427,711	26,937,990
Passenger Trips per Revenue Hour	32.27	38.16	19.06	34.53	48.44	47.15	35.06	42.02	32.82	32.69	55.57	37.98
Passenger Trips per Revenue Mile	2.7	2.77	1.3	2.87	4.81	4.66	3.39	3.86	2.7	2.77	6	3.44
Operating Expense per Passenger Trip	\$3.92	\$2.57	\$5.45	\$4.50	\$3.20	\$3.15	\$4.14	\$4.04	\$3.43	\$4.22	\$2.44	\$3.73
Operating Expense per Revenue Hour	\$126.34	\$98.06	\$103.96	\$155.38	\$154.85	\$148.72	\$145.03	\$169.84	\$112.72	\$138.06	\$135.74	\$135.34
Weekend Service Availability (Revenue Hrs)	9,260	3,184	1,879	10,452	7,595	13,793	11,601	5,873	7,253	3,206	21,698	8,709
Total Operating Expenses	\$304,832,932	\$97,432,331	\$62,730,556	\$430,144,035	\$372,287,102	\$596,307,945	\$565,803,610	\$297,374,548	\$211,539,134	\$142,998,626	\$768,077,305	\$349,957,102
Maintenance Expenses	\$85,141,374	\$17,792,427	\$12,951,441	\$99,001,716	\$110,980,218	\$160,075,953	\$161,199,752	\$64,237,409	\$60,117,538	\$37,360,578	\$168,073,681	\$88,812,008
Farebox Revenues	\$84,414,416	\$33,011,465	\$11,607,208	\$117,724,121	\$82,359,171	\$177,847,064	\$137,450,600	\$60,207,260	\$58,666,663	\$35,208,409	\$288,620,266	\$98,828,786
Farebox Recovery Ratio	27.69%	33.88%	18.50%	27.37%	22.12%	29.82%	24.29%	20.25%	27.73%	24.62%	37.58%	26.71%
Employee Comparison	3,206	957	669	3,551	2,907	5,131	4,971	2,611	2,365	1,482	6,227	3,098

Data Source: 2012 NTD

Table 4-3: MDT Metrobus 2007-2012 Trend

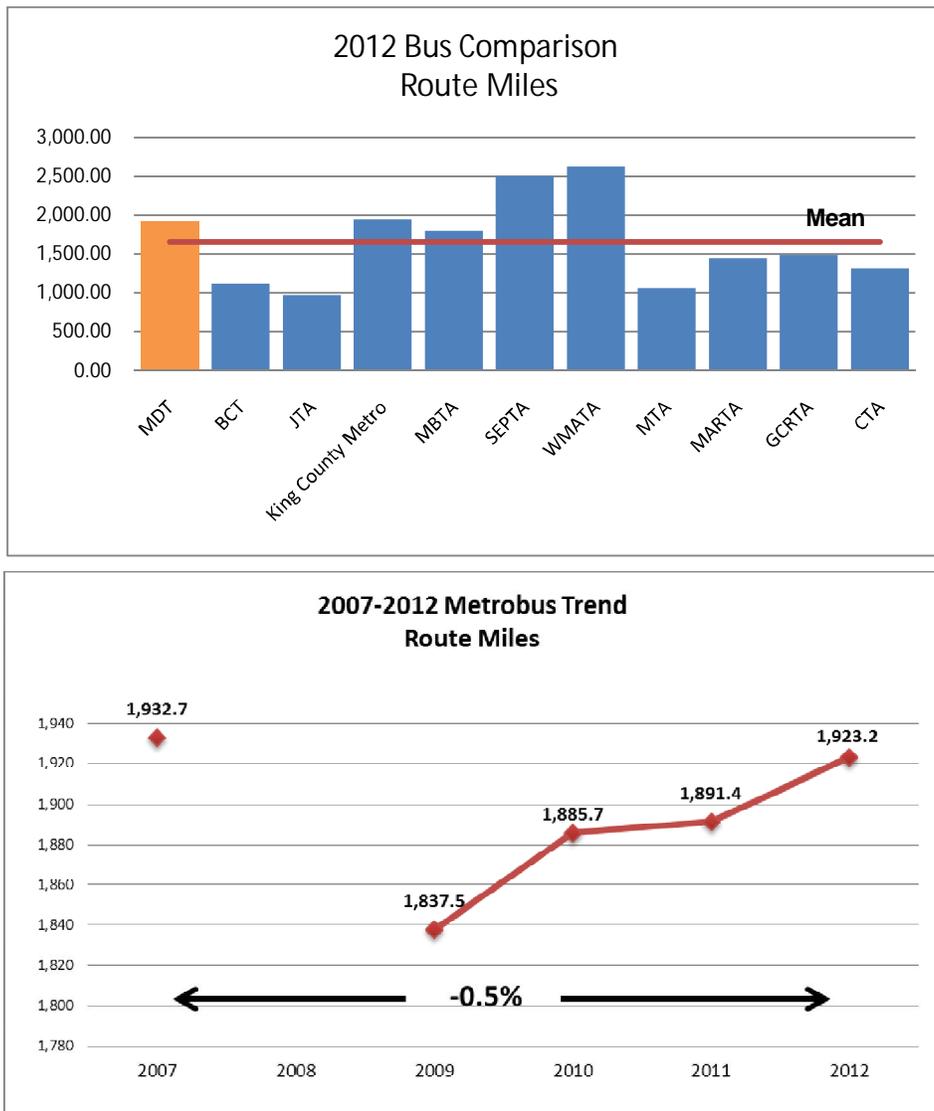
Performance Measures	2007	2008	2009	2010	2011	2012
Route Miles	1,932.7	Not Reported	1,837.5	1,885.7	1,891.4	1,923.2
Unlinked Passenger Trips	83,458,376	85,789,745	75,608,000	70,291,985	75,723,805	77,858,973
Average Age (yrs.) of Bus Fleet	5.2	5.4	6.3	7.0	7.5	8.6
Passenger Miles Traveled	427,626,902	426,400,643	391,313,187	379,704,686	407,782,273	442,282,825
Average Passenger Trip Length	5.12	4.97	5.18	5.40	5.39	5.68
Vehicle Revenue Hours	2,923,018	2,752,703	2,629,625	2,444,526	2,424,028	2,412,709
Vehicle Revenue Miles	35,654,448	33,407,289	31,547,096	29,177,775	28,860,941	28,838,288
Passenger Trips Per Revenue Hour	28.55	31.17	28.75	28.75	31.24	32.27
Passenger Trips Per Revenue Mile	2.34	2.57	2.40	2.41	2.62	2.70
Operating Cost Per Passenger Trip	\$3.83	\$3.94	\$4.43	\$4.38	\$4.03	\$3.92
Operating Cost Per Revenue Hour	\$109.25	\$122.75	\$127.29	\$125.94	\$125.95	\$126.34
Weekend Service Availability (Rev. Hrs)	11,095	9,836	9,863	8,396	9,181	9,260
Operating Expenses	\$319,327,599	\$337,894,421	\$334,727,320	\$307,852,630	\$305,311,580	\$304,832,932
Maintenance Expenses	\$86,883,261	\$91,115,182	\$94,060,724	\$80,759,398	\$85,115,796	\$85,141,374
Farebox Revenue	\$71,186,530	\$71,722,693	\$78,650,396	\$78,687,636	\$82,454,846	\$84,414,416
Farebox Recovery Ratio	22.29%	21.23%	23.50%	25.56%	27.01%	27.69%

Data Source: NTD (2007 – 2012)

4.4.1 Route Miles

Figure 4-1 shows 2012 bus system route miles for MDT and its peer agencies, and as a comparison, the peer mean is also part of the graphs presented in this section. As the graphic shows, MDT's Metrobus service provides more route miles than most of the peer agencies, except King County Metro, SEPTA, and WMATA. For MDT, between 2007 and 2009 the bus system route miles decreased as a result of the implementation of an initiative to operate a more efficient bus service through a grid operational network of service routes. Route miles were not reported to NTD in 2008.

Figure 4-1: Bus Route Miles

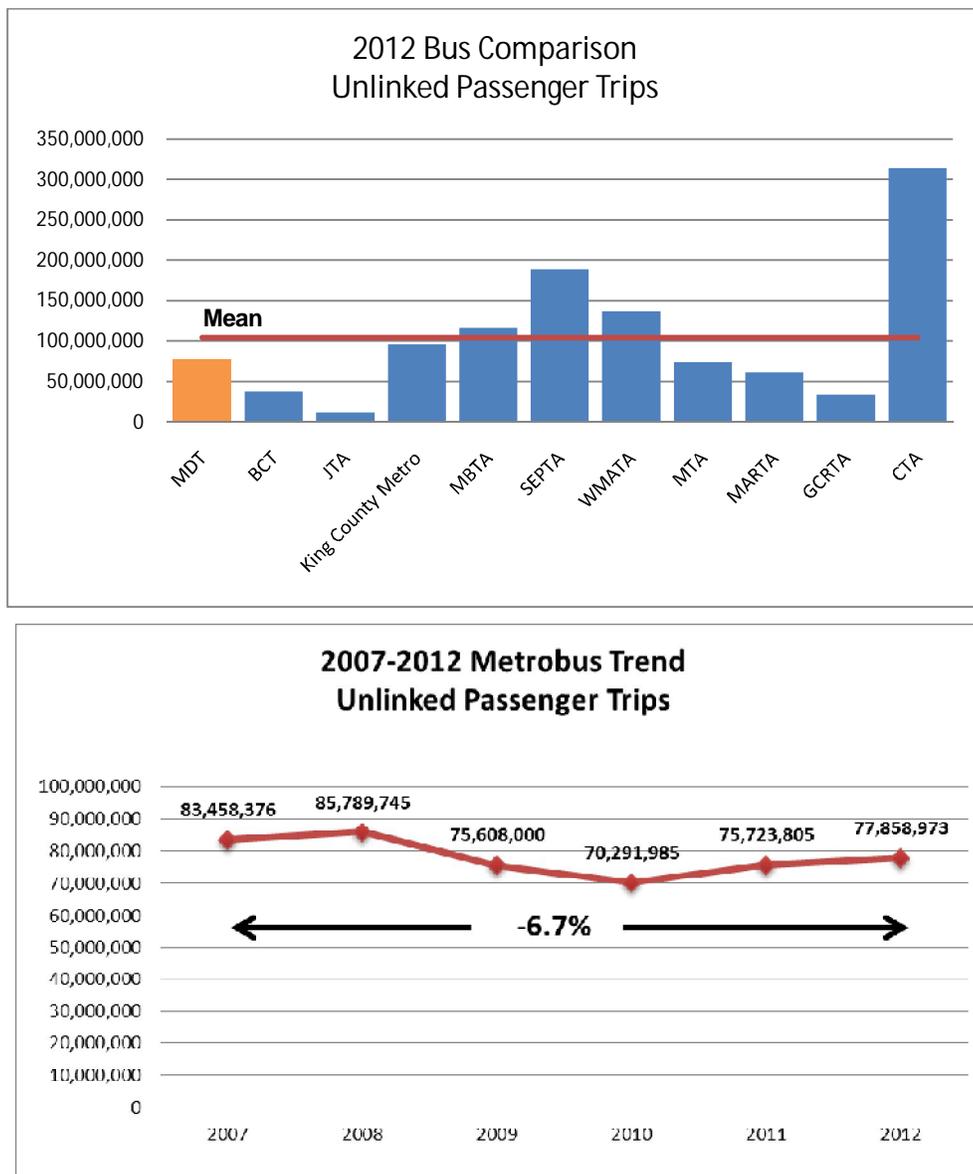


Data Source: NTD (2007 – 2012)

4.4.2 Unlinked Passenger Trips

Figure 4-2 shows 2012 unlinked passenger trips (transit ridership) for MDT and its peer agencies. As the graphic shows, MDT's Metrobus service has fewer passenger trips compared to the peer mean. MDT's Metrobus service is most similar to King County Metro, MTA and MARTA in terms of the number of unlinked passenger trips that its bus system handled. It is important to note that in 2012, MDT served more passengers than any of the other Florida transit systems analyzed in this report. Metrobus unlinked passenger trips experienced an overall decrease of 6.7% percent from 2007 to 2012, but have been increasing since 2010.

Figure 4-2: Bus Unlinked Passenger Trips

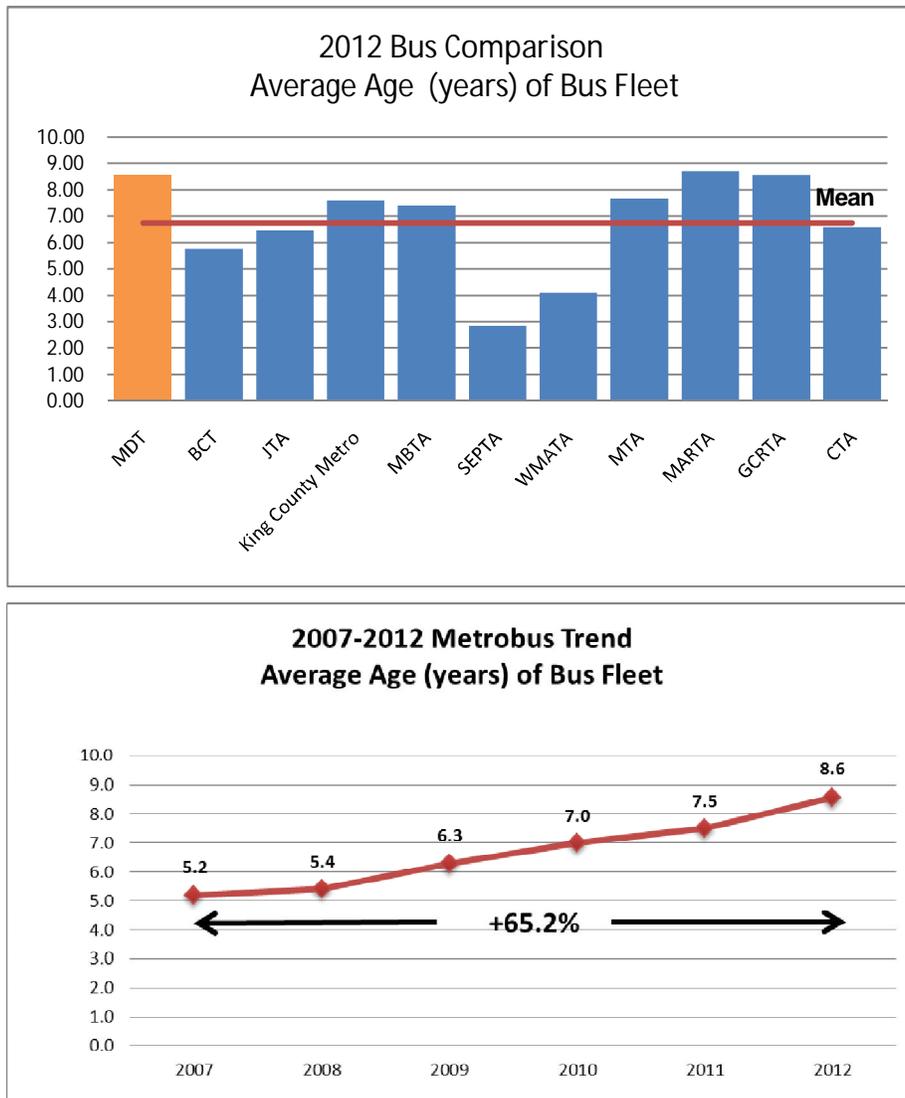


Data Source: NTD (2007 – 2012)

4.4.3 Average Age (years) of Bus Fleet

Figure 4-3 shows the average age¹ of bus fleet. At an average age of 8.59 years, MDT's bus fleet is older than all its peers, except for MARTA whose bus fleet has an average age of 8.71 years. Since 2008, MDT's bus fleet has steadily continued to age as a result of minimal replacement of existing buses with newer vehicles. MDT has extended the fleet life from 12 to 14 years by doing additional heavy maintenance.

Figure 4-3: Average Age (years) of Bus Fleet



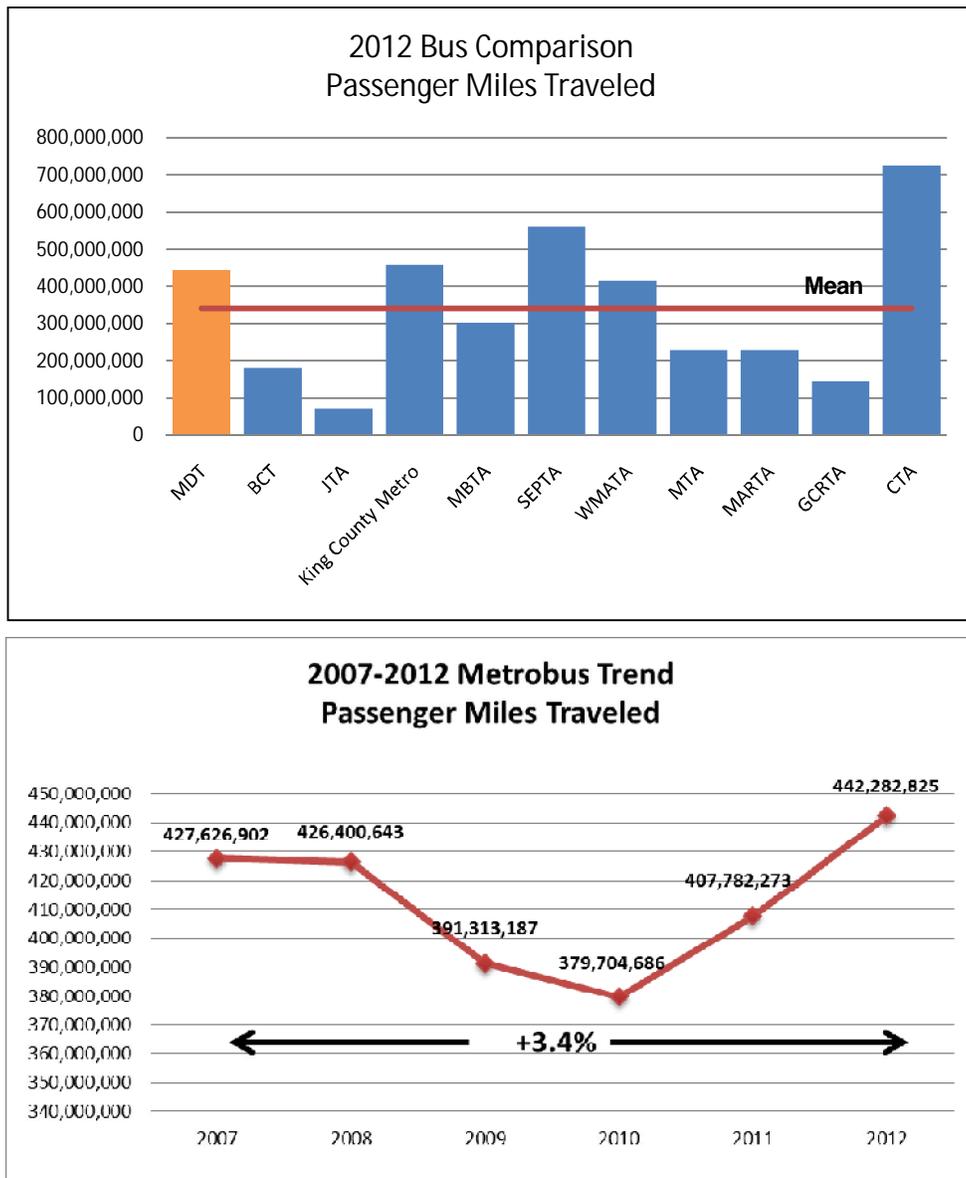
Data Source: NTD (2007 – 2012)

¹ Average age is based on the vehicle's manufacture year, or re-build year if applicable. If a vehicles' manufacture year or re-build year were not reported by the agency, those vehicles were not included in the calculation.

4.4.4 Passenger Miles Traveled and Average Passenger Trip Length

Figure 4-4 shows bus passenger miles traveled. MDT's system carries more passenger miles than the peer mean. Given that MDT's total passenger trips are lower compared to some of its peers, this indicates that MDT customers tend to make longer trips than their counterparts using peer systems. Metrobus passenger miles traveled decreased from 2008 to 2010, but has been steadily increasing since. Overall, there was a 3.4 percent increase in passenger miles traveled from 2007 to 2012.

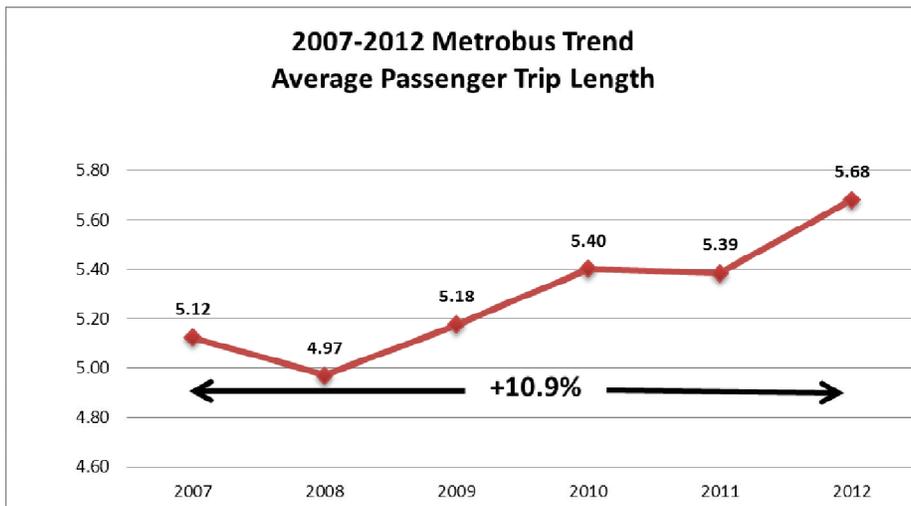
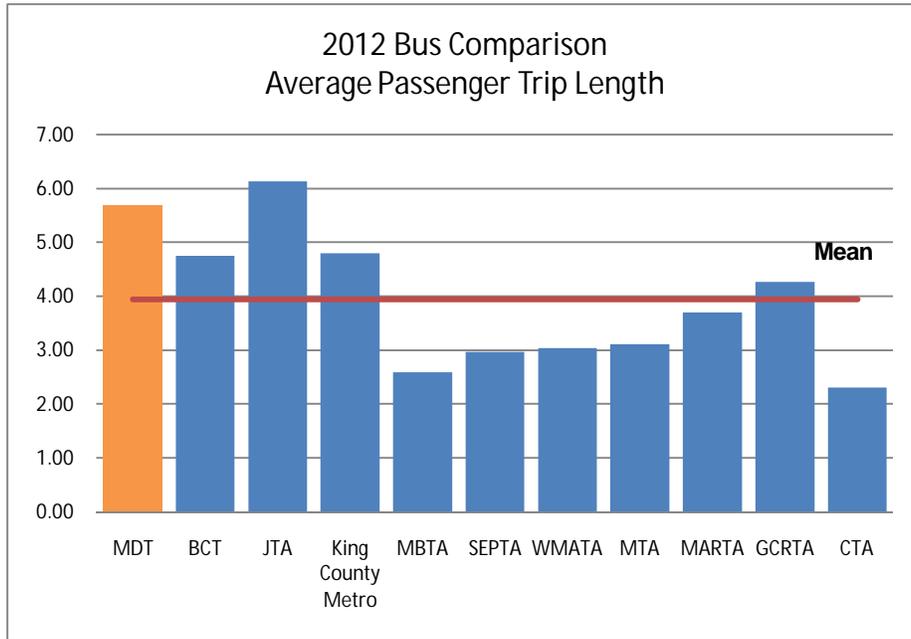
Figure 4-4: Bus Passenger Miles Traveled



Data Source: NTD (2007 – 2012)

Passenger miles have increased at a greater rate than unlinked passenger trips during this period indicating that the average passenger trip length is increasing. Figure 4-5 presents the average passenger trip length, which has increased by 10.9 percent during the analysis time period.

Figure 4-5: Bus Average Passenger Trip Length

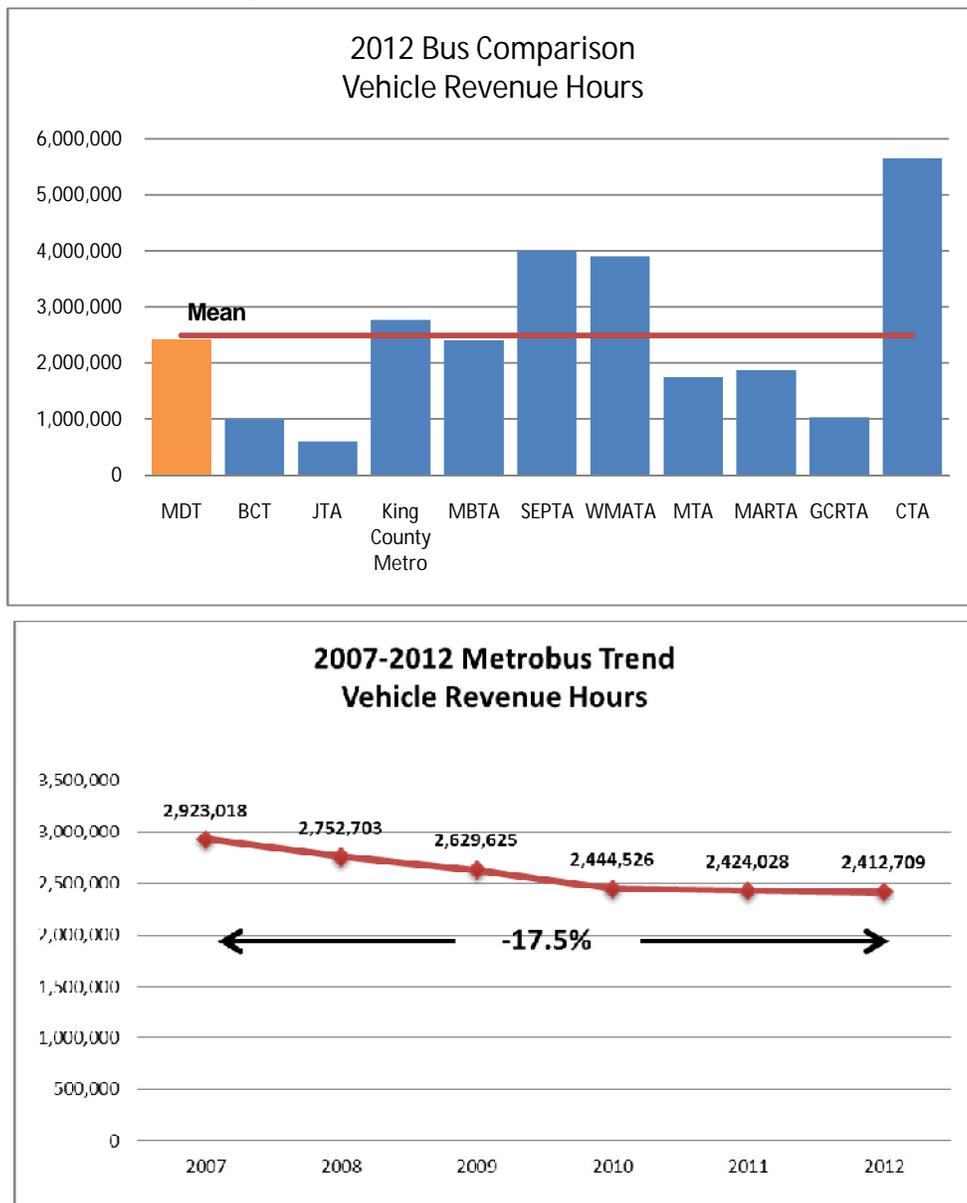


Data Source: NTD (2007 – 2012)

4.4.5 Vehicle Revenue Hours and Vehicle Revenue Miles

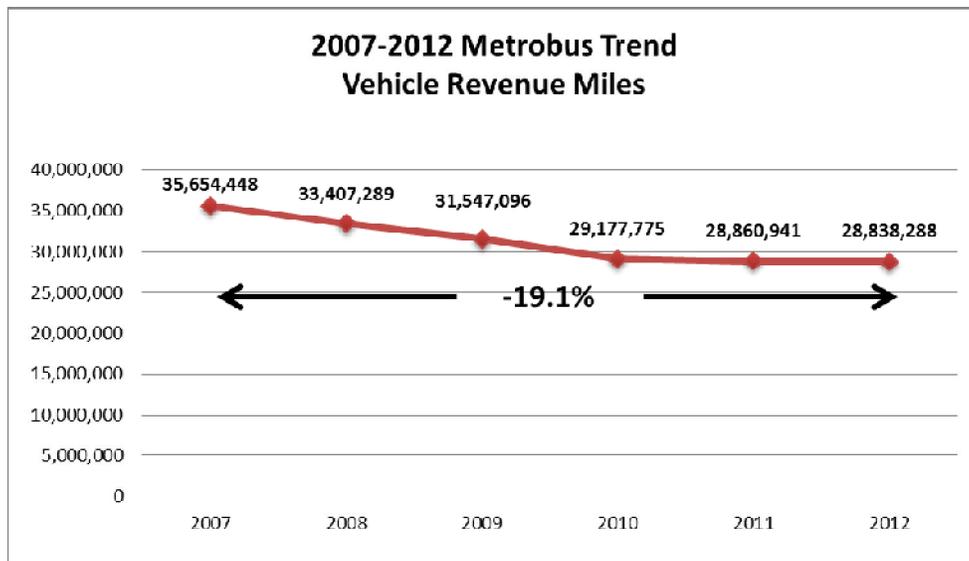
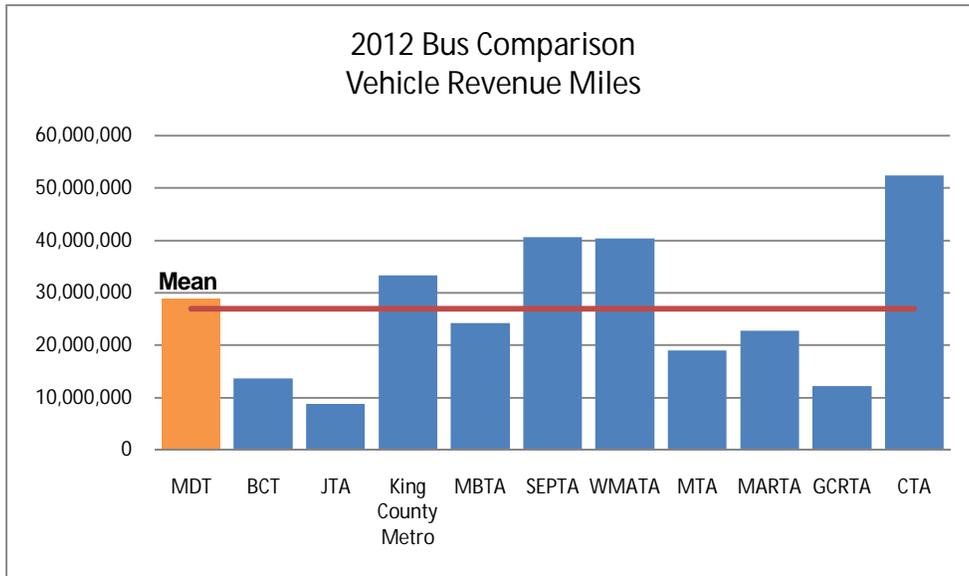
Figure 4-6 and Figure 4-7 show the annual vehicle revenue hours and vehicle revenue miles for MDT and its peer agencies, respectively. As both figures show, MDT operates bus service close to the peer mean. The trends for Metrobus vehicle revenue hours and vehicle revenue miles have steadily decreased since 2007. Overall, vehicle revenue hours decreased by 17.5 percent from 2007 to 2012 while vehicle revenue miles decreased by 19.1 percent from 2007 to 2012. During this time MDT has undergone the restructuring of Metrobus routes to improve service efficiency. This indicates that average route length has also decreased.

Figure 4-6: Bus Vehicle Revenue Hours



Data Source: NTD (2007 – 2012)

Figure 4-7: Bus Vehicle Revenue Miles

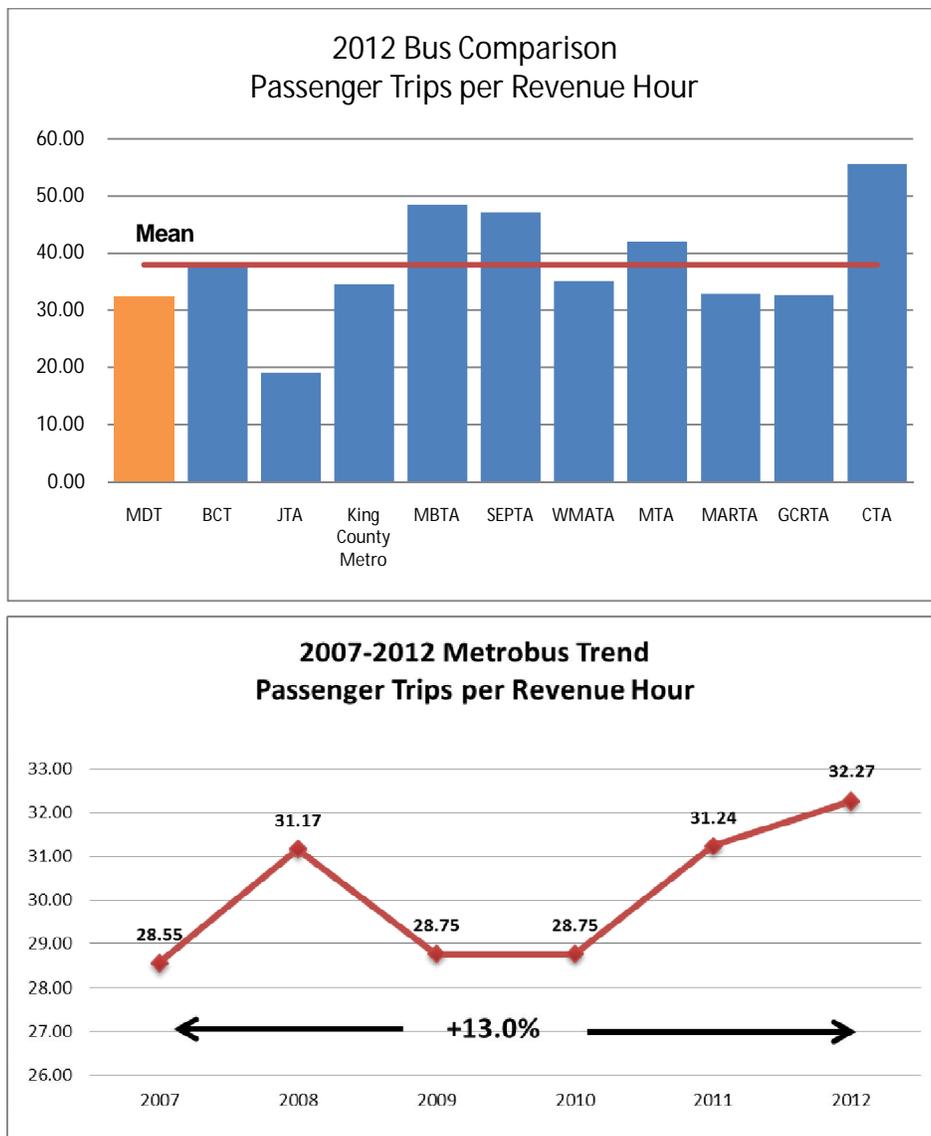


Data Source: NTD (2007 – 2012)

4.4.6 Passenger Trips per Revenue Hour and Revenue Mile

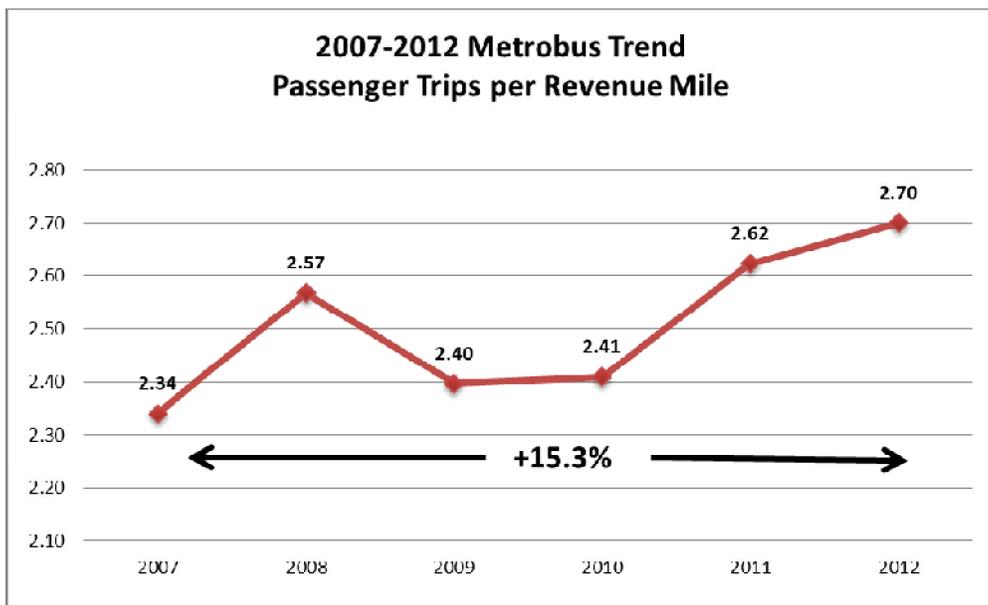
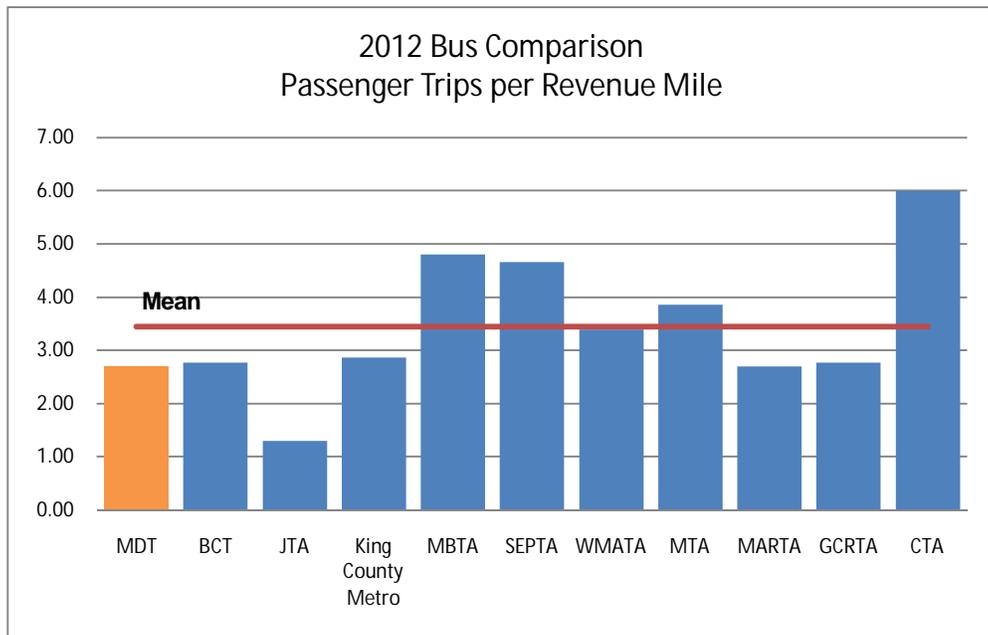
Figure 4-8 and Figure 4-9 show the average number of passenger trips per revenue hour and revenue mile, respectively. MDT operates slightly below the mean in both categories and about the same as MARTA and GCRTA. This is attributed to the relative high number of revenue hours and miles of service relative to the system ridership. Metrobus passenger trips per revenue hour and per revenue mile both decreased sharply from 2008 to 2009 but have increased steadily since 2010. Overall, passenger trips per revenue hour and per revenue mile have increased by 13.0 percent and 15.3 percent, respectively. This is due to an increase in productivity between 2010 and 2012 due to a decline in revenue hours and miles.

Figure 4-8: Bus Passenger Trips per Revenue Hour



Data Source: NTD (2007 – 2012)

Figure 4-9: Bus Passenger Trips per Revenue Mile

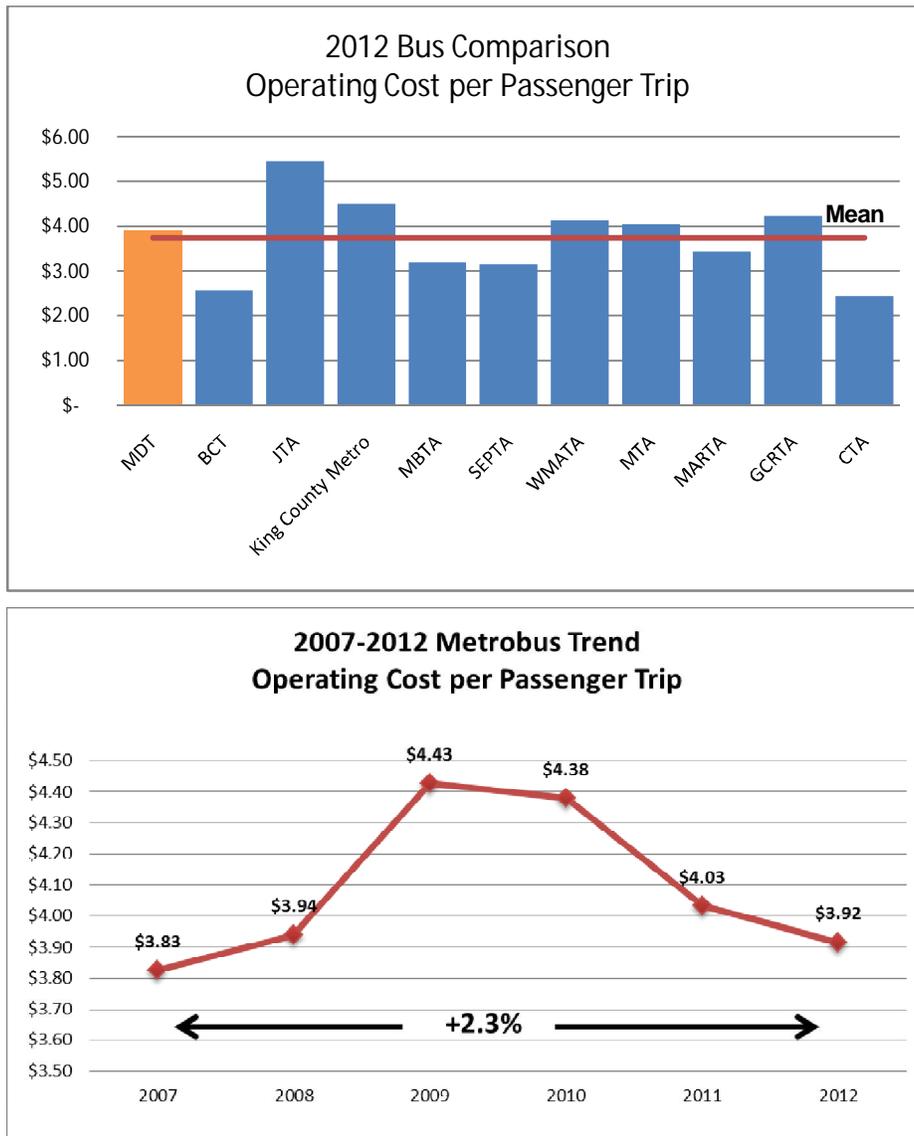


Data Source: NTD (2007 – 2012)

4.4.7 Operating Cost per Passenger Trip and Revenue Hour

Figure 4-10 shows operating cost per passenger trip and Figure 4-11 shows operating costs per revenue hour, for MDT and its peer agencies. MDT's operating cost per passenger trip is \$3.92, which is close to the peer mean and lower than JTA, King County Metro, WMATA, MTA and GCRTA. The agency's operating cost per revenue hour of \$126.34 is lower than the peer mean and most of the peer agencies, except BCT, JTA, and MARTA.

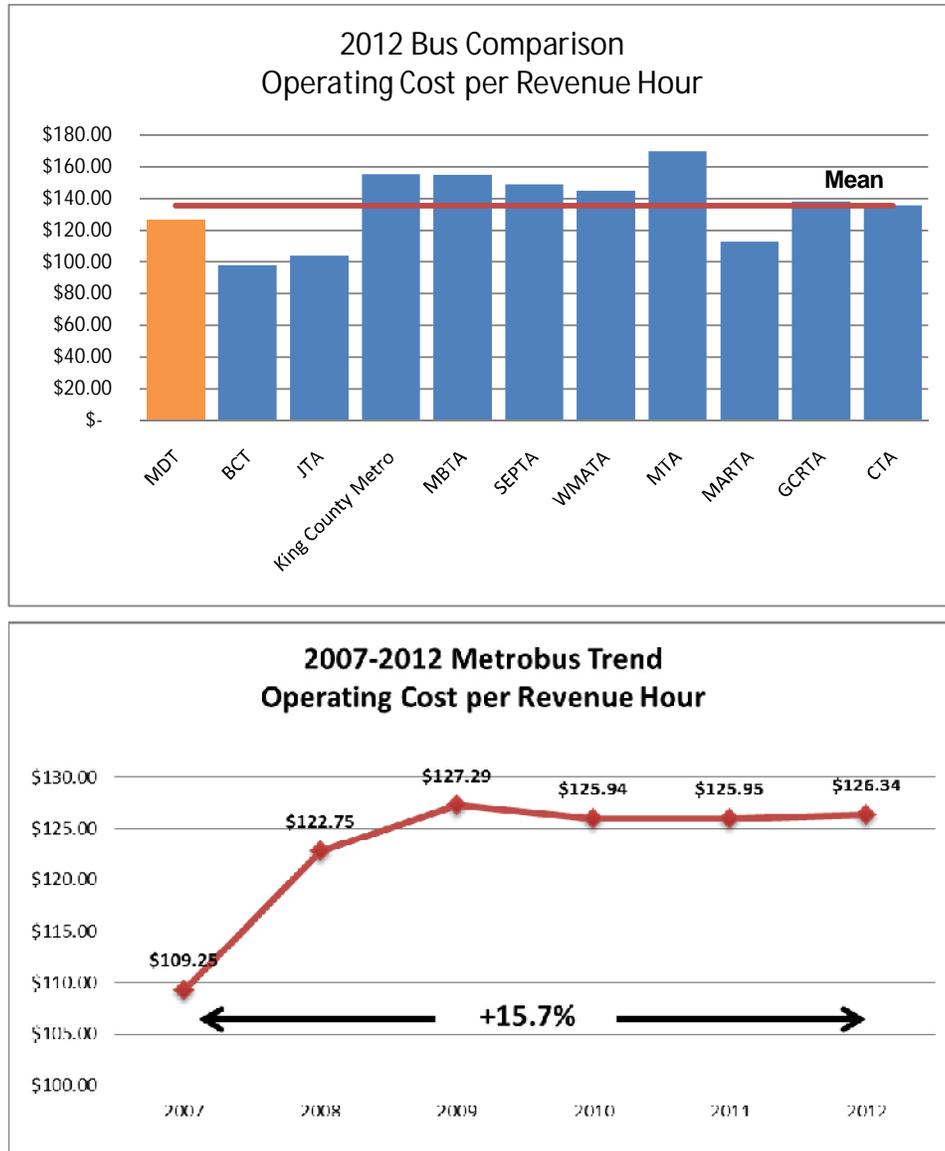
Figure 4-10: Bus Operating Expense per Passenger Trip



Data Source: NTD (2007 – 2012)

The analysis indicates an overall increase of 15.7 percent in operating costs per revenue hour with the biggest jump occurring between 2007 and 2008. This increase can be partly attributed to a spike in fuel prices during that period. Metrobus operating cost per passenger trip increased significantly from 2008 to 2009, but has since been on a decline. Overall, there was a 2.3 percent increase in operating cost per passenger trip from 2007 to 2012.

Figure 4-11: Bus Operating Cost per Revenue Hour

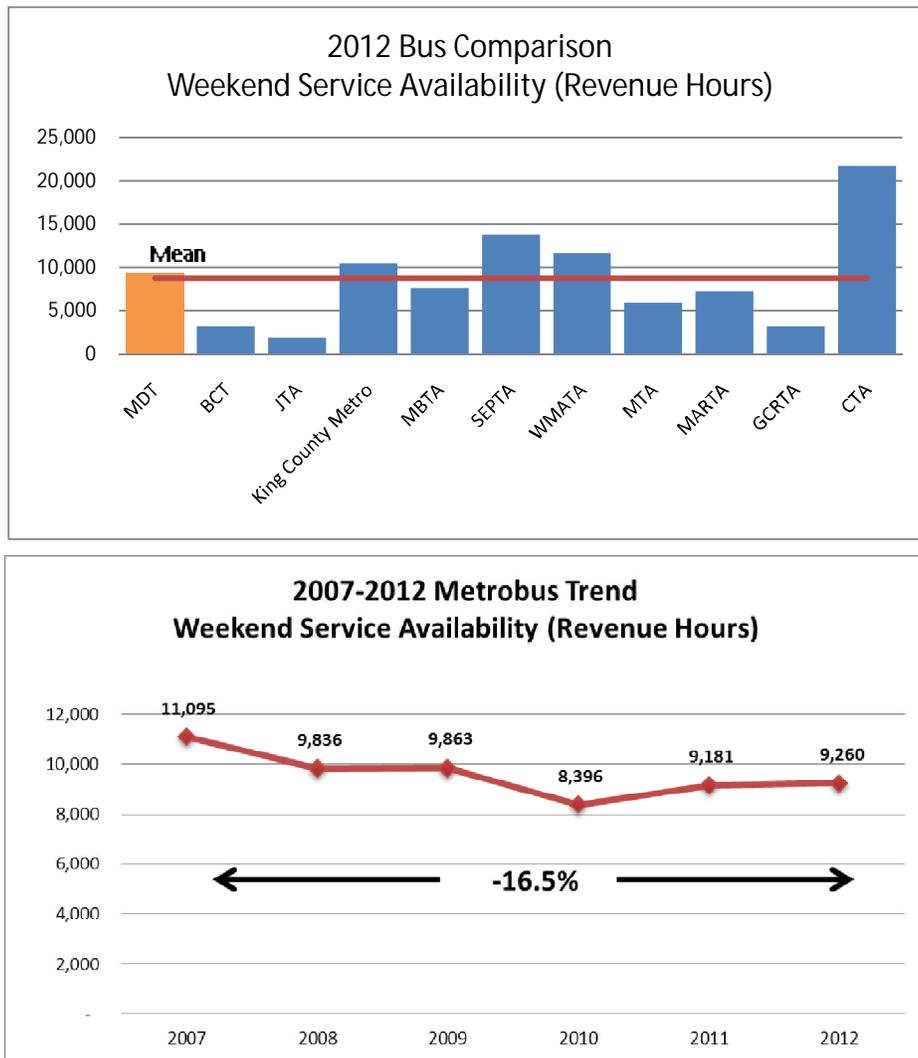


Data Source: NTD (2007 – 2012)

4.4.8 Weekend Service Availability (Revenue Hours)

Figure 4-12 shows revenue hours during a typical weekend (Saturday and Sunday) as a measure of weekend service availability. As the graphic shows, MDT provides weekend service close to the mean, behind only CTA, WMATA, SEPTA, and King County Metro. Since 2007, the amount of weekend service revenue hours have decreased but remained practically unchanged in 2011 and 2012. This decrease is consistent with a reduction in revenue hours occurring during the same time period as a result of MDT's service efficiency adjustment to Metrobus routes.

Figure 4-12: Bus Weekend Service Availability (Revenue Hours)

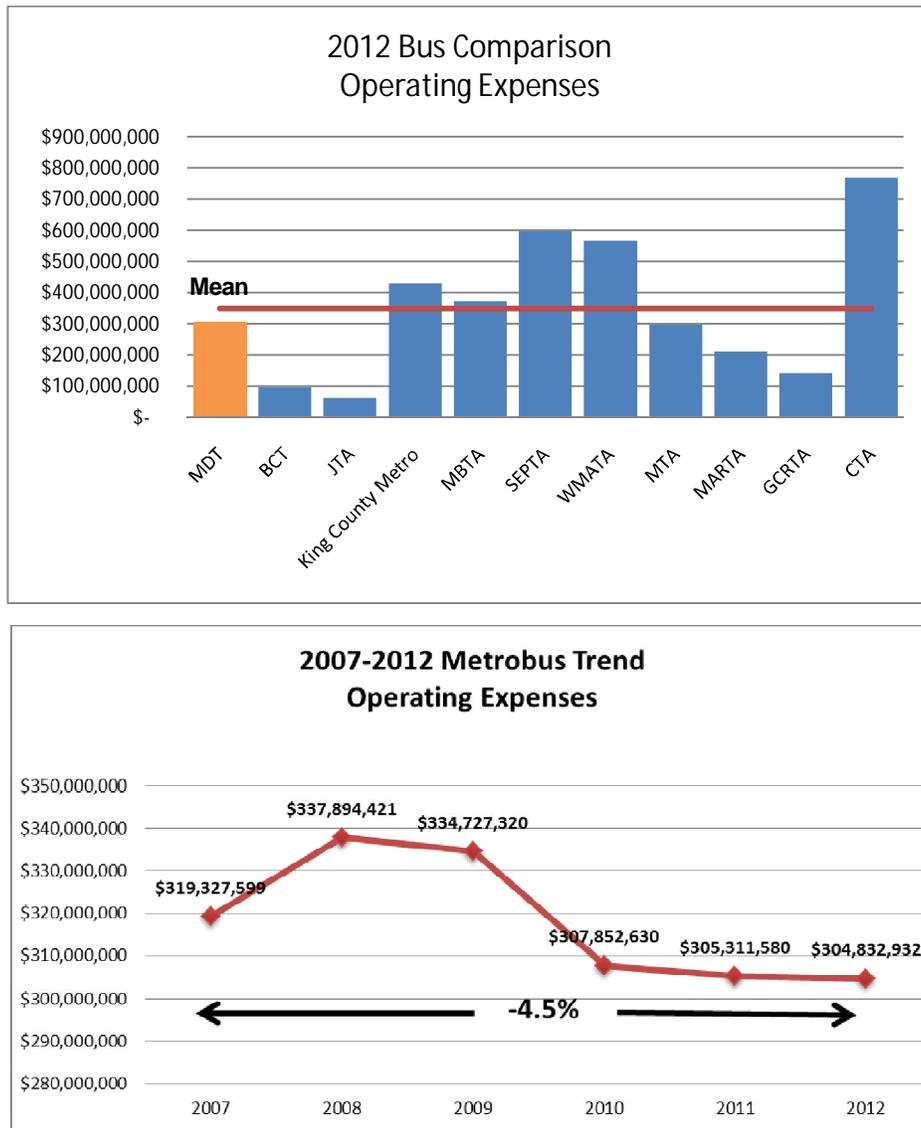


Data Source: NTD (2007 – 2012)

4.4.9 Operating Expenses

Figure 4-13 shows operating expenses for MDT and its selected peers. MDT's total operating expense for Metrobus in 2012 was close to \$305 million, which is below the peer mean. Operating expenses for Metrobus have been declining since 2009 when MDT implemented a Service Efficiency and Restructuring Initiative (SERI) which restructured bus routes creating efficiencies. Operating expenses are 4.5 percent less than in 2007.

Figure 4-13: Bus Operating Expenses

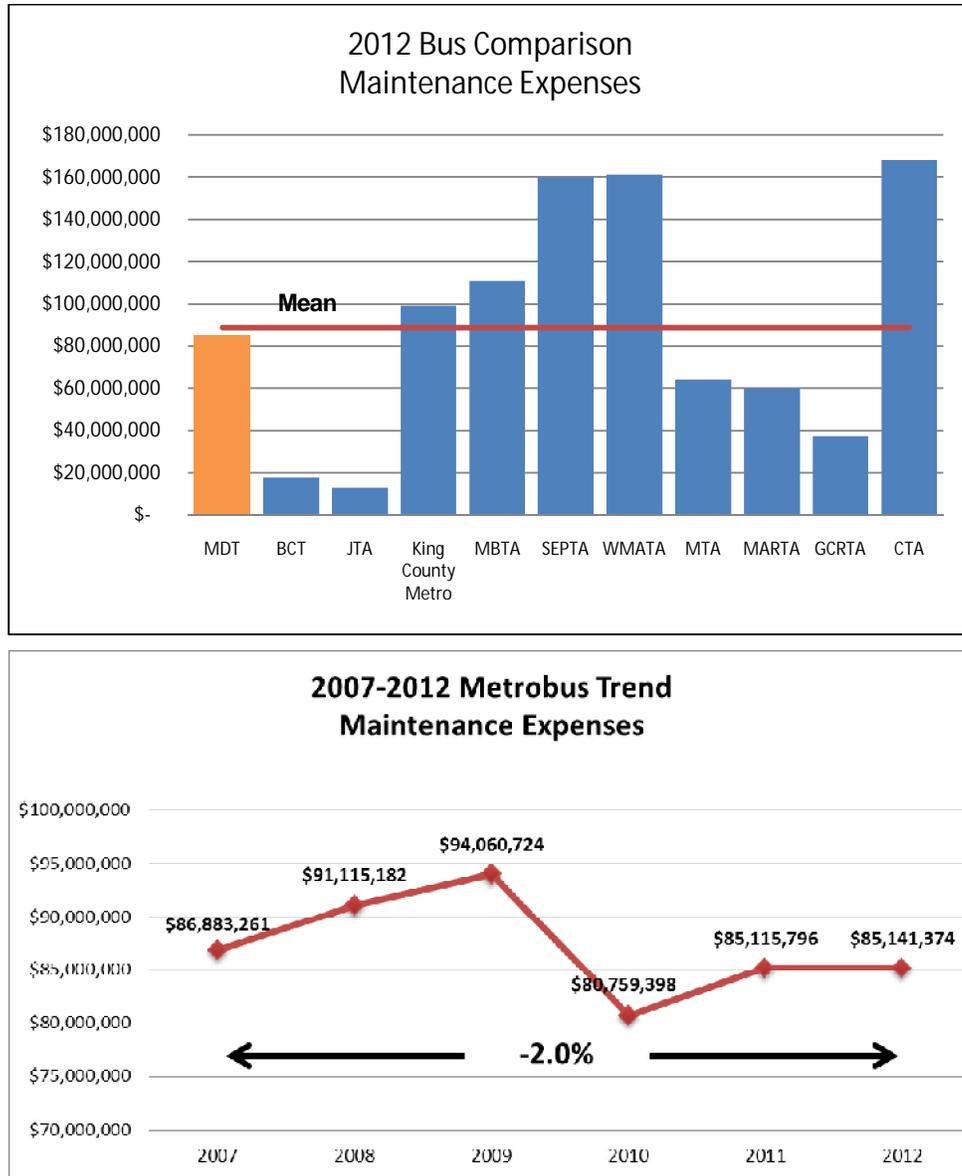


Data Source: NTD (2007 – 2012)

4.4.10 Maintenance Expenses

Figure 4-14 presents the amount of maintenance expenses² for MDT and its selected peers. MDT's maintenance expenses are close to the peer mean of \$88.8 million, and about half of SETPA, WMATA and CTA's maintenance expenses. MDT's maintenance expenses have declined by 2.0 percent since 2007.

Figure 4-14: Bus Maintenance Expenses



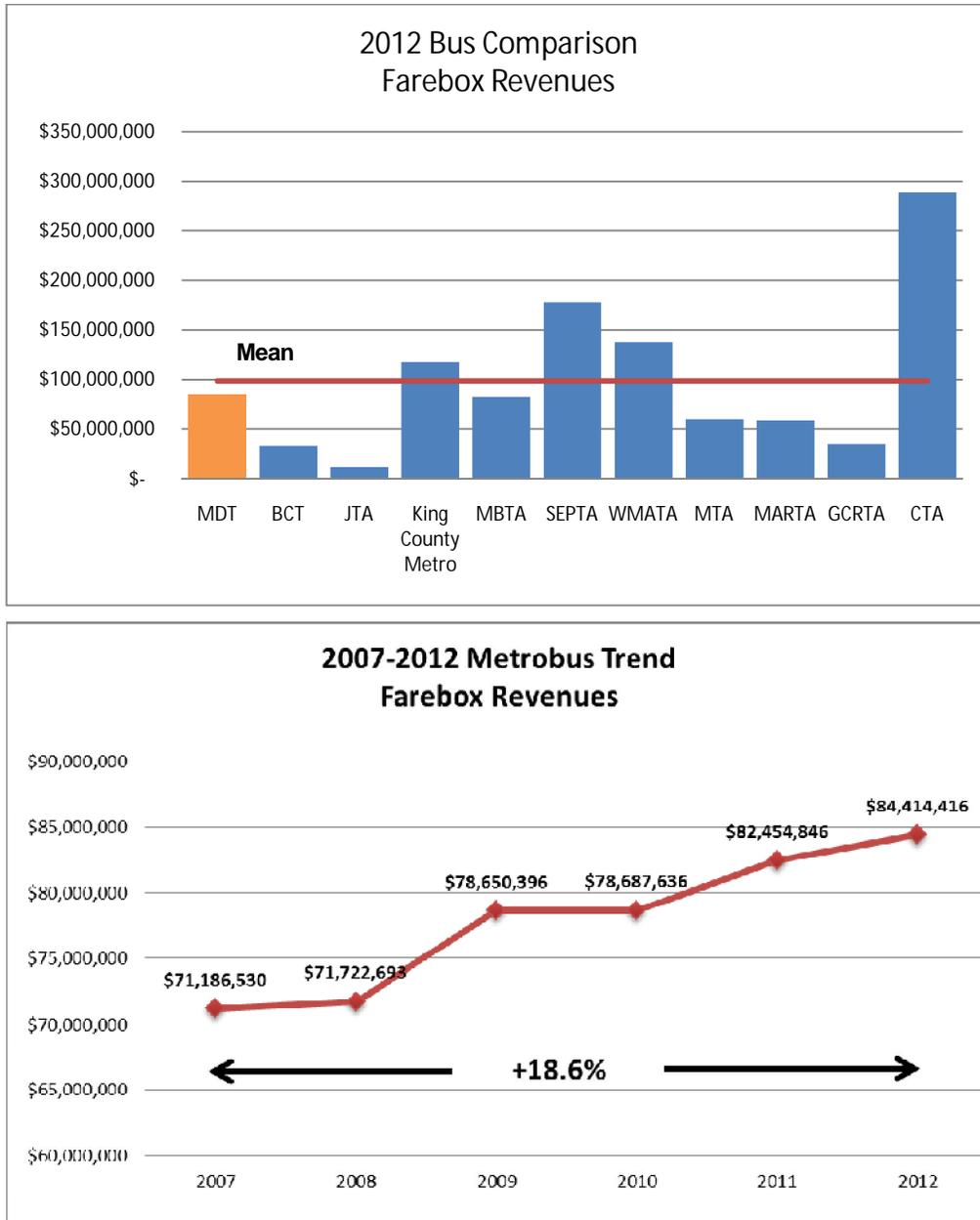
Data Source: NTD (2007 – 2012)

² Maintenance expenses are a subset of total operating expenses in the data provided by NTD.

4.4.11 Farebox Revenues

Figure 4-15 shows fare revenue for MDT and the selected peer agencies. MDT's fare revenue in 2012 was about \$84.5 million, which ranks fifth among its selected peers. Metrobus fare revenues have steadily increased since 2007 resulting in an 18.6 percent increase over the last five years.

Figure 4-15: Farebox Revenues

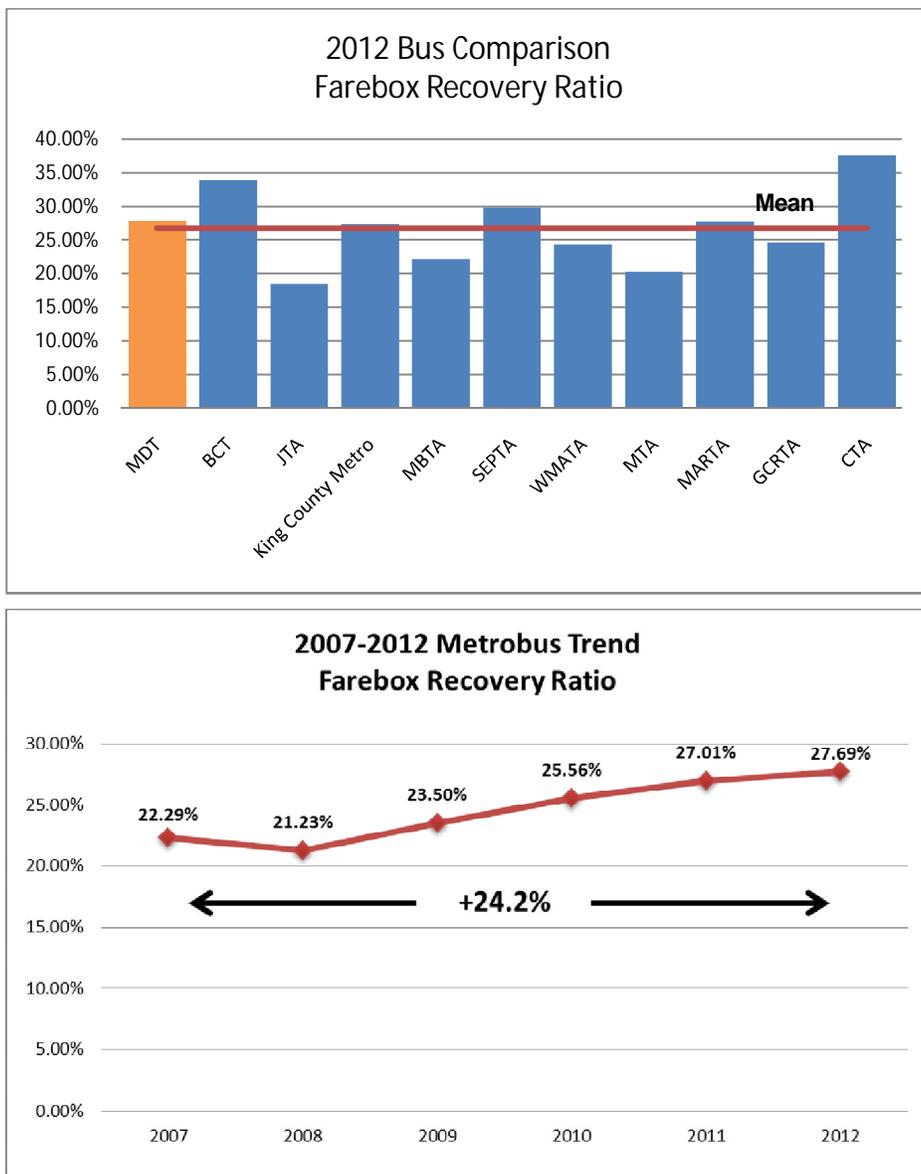


Data Source: NTD (2007 – 2012)

4.4.12 Farebox Recovery Ratio

Figure 4-16 shows the peer comparison for farebox recovery ratio, which is the percentage of the total operating cost recuperated by fares. Despite MDT's Golden and Patriot Passport programs, which offer free passes to seniors and eligible veterans, MDT's farebox recovery ratio for bus of 27.69 percent is slightly above the peer mean, and is only lower than BCT, SEPTA, and CTA. Metrobus experienced a slight decrease in farebox recovery from 2007 to 2008, but has been increasing steadily since 2008. Overall, the farebox recovery increased 24.2 percent from 2007 to 2012. This is an indication of decreasing operating costs relative to passenger ridership.

Figure 4-16: Bus Farebox Recovery Ratio



Data Source: NTD (2007 – 2012)

4.5 Heavy Rail Peer Comparison and Trend

Table 4-4 compares statistics for MDT’s heavy rail service (Metrorail), with the selected peer agencies that operate heavy rail. Seven (7) of the ten (10) peer agencies selected for this analysis operated heavy rail in 2012, and these are listed in the following table. Currently, MDT is the only Florida transit agency that provides heavy rail service.



Table 4-5 presents the trend analysis which provides an opportunity to assess how service is changing over the six most recent years. This analysis can also identify potential areas of service that should be further examined or adjusted to improve system performance.

Table 4-4: Heavy Rail Peer Comparison (2012)

Agency	MDT	MBTA	SEPTA	WMATA	MTA	MARTA	GCRTA	CTA	Peer Mean
City	Miami, FL	Boston, MA	Philadelphia, PA	Washington, DC	Baltimore, MD	Atlanta, GA	Cleveland, OH	Chicago, IL	
Route Miles	58.30	108.00	99.80	269.80	34.00	103.70	41.90	287.80	125.41
Unlinked Passenger Trips	18,706,102	166,961,143	102,796,169	285,306,675	15,199,117	72,711,487	6,240,495	231,154,339	112,384,441
Average Age (yrs.) of Rail Fleet	30.00	21.26	4.87	21.99	27.44	7.93	9.67	11.98	16.89
Passenger Miles Traveled	139,721,133	581,700,354	456,868,171	1,584,631,040	77,435,638	463,168,559	43,551,128	1,541,186,268	611,032,786
Average Passenger Trip Length	7.47	3.48	4.44	5.55	5.09	6.37	6.98	6.67	5.8
Vehicle Revenue Hours	288,095	1,460,305	870,896	2,883,528	189,996	674,278	102,597	3,575,439	1,255,642
Vehicle Revenue Miles	6,819,311	23,808,394	16,962,968	70,867,572	4,627,288	17,661,018	1,989,328	65,222,890	25,994,846
Passenger Trips per Revenue Hour	64.93	114.33	118.03	98.94	80.00	107.84	60.83	64.65	88.69
Passenger Trips per Revenue Mile	2.74	7.01	6.06	4.03	3.28	4.12	3.14	3.54	4.24
Operating Cost per Passenger Trip	\$4.08	\$1.85	\$1.79	\$2.96	\$3.52	\$2.45	\$4.71	\$2.23	\$2.95
Operating Cost per Revenue Hour	\$264.79	\$211.92	\$211.62	\$292.58	\$281.96	\$263.71	\$286.19	\$144.04	\$244.60
Weekend Service Availability (Revenue Hrs)	814	5,545	2,936	10,573	603	3,225	486	13,344	6,257
Operating Expenses	\$76,284,971	\$309,471,439	\$184,296,621	\$843,658,227	\$53,571,599	\$177,812,219	\$29,362,013	\$515,014,905	\$273,683,999
Maintenance Expenses	\$38,988,459	\$133,173,629	\$68,424,782	\$405,464,558	\$26,894,753	\$73,911,352	\$20,095,422	\$233,346,915	\$125,037,484
Farebox Revenues	\$21,194,397	\$162,016,921	\$97,239,558	\$569,237,545	\$12,507,728	\$70,440,991	\$6,489,400	\$262,542,243	\$150,208,598
Farebox Recovery Ratio	27.78%	52.35%	52.76%	67.47%	23.35%	39.62%	22.10%	50.98%	42.05%

Data Source: 2012 NTD

Table 4-5: MDT Metrorail 2007-2012 Trend

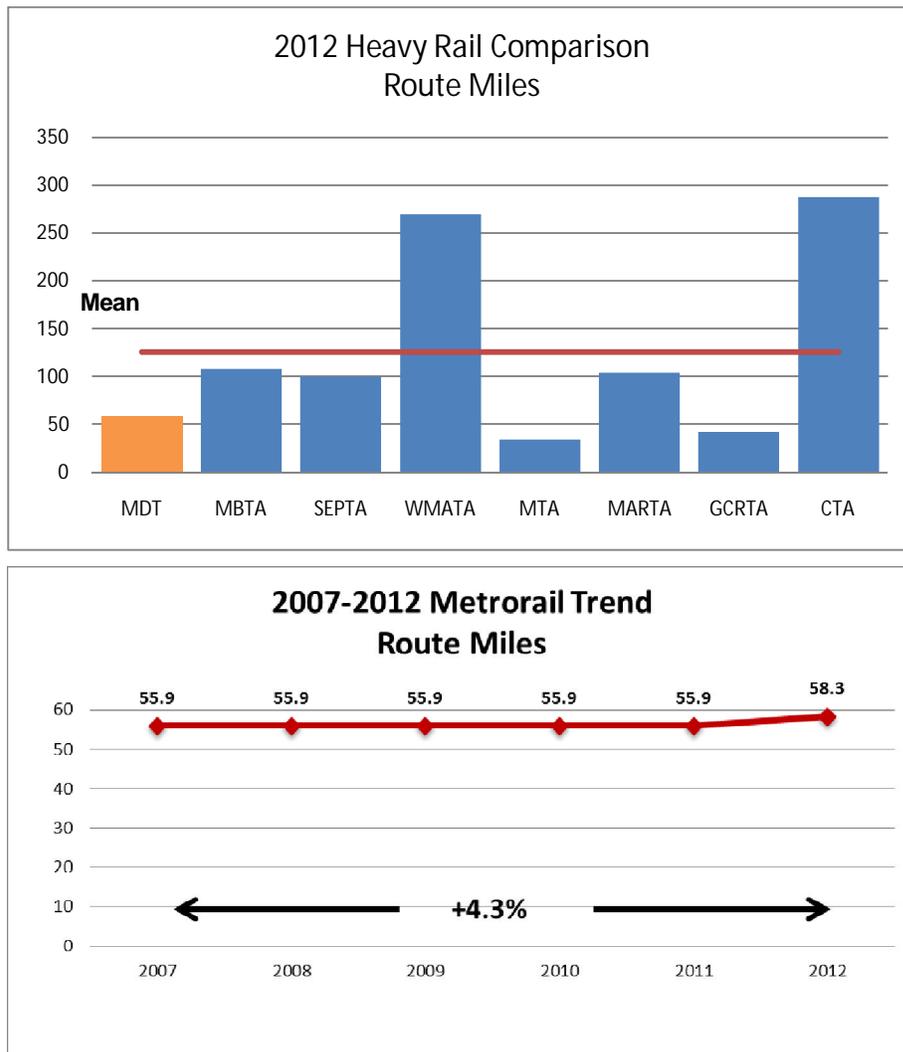
Performance Measures	2007	2008	2009	2010	2011	2012
Route Miles	55.9	55.9	55.9	55.9	55.9	58.3
Unlinked Passenger Trips	17,504,736	18,538,741	18,244,476	17,371,553	18,134,784	18,706,102
Average Age (yrs.) of Heavy Rail Fleet	25.0	26.0	27.0	28.0	29.0	30.0
Passenger Miles Traveled	134,407,819	142,152,120	132,769,722	128,388,247	137,011,934	139,721,133
Average Passenger Trip Length	7.68	7.67	7.28	7.39	7.56	7.47
Vehicle Revenue Hours	359,326	318,765	294,140	295,254	294,533	288,095
Vehicle Revenue Miles	8,354,432	7,158,361	6,691,511	6,709,459	6,366,821	6,819,311
Passenger Trips Per Revenue Hour	48.72	58.16	62.03	58.84	61.57	64.93
Passenger Trips Per Revenue Mile	2.10	2.59	2.73	2.59	2.85	2.74
Operating Cost Per Passenger Trip	\$4.61	\$4.44	\$4.30	\$4.39	\$4.35	\$4.08
Operating Cost Per Revenue Hour	\$224.39	\$258.44	\$266.54	\$258.04	\$267.89	\$264.79
Weekend Service Availability (Rev. Hrs)	1,161	1,136	758	826	754	814
Operating Expenses	\$80,628,996	\$82,381,902	\$78,399,299	\$76,188,170	\$78,903,279	\$76,284,971
Maintenance Expenses	\$34,272,813	\$36,316,586	\$33,406,733	\$32,770,205	\$36,808,567	\$38,988,459
Farebox Revenue	\$13,435,411	\$13,246,540	\$15,725,268	\$17,827,407	\$18,690,279	\$21,194,397
Farebox Recovery Ratio	16.66%	16.08%	20.06%	23.40%	23.69%	27.78%

Data Source: NTD (2007 – 2012)

4.5.1 Route Miles

Figure 4-17 shows the number of heavy rail route miles operated in 2012 by MDT and its peer agencies. As the graph shows, WMATA and CTA operate more than twice the number of route miles than the next closest peer, with MDT having one-fifth of the route miles of these two agencies. Metrorail route miles have remained constant between 2007 and 2011. In 2012, route miles increase as a result of the new AirportLink Metrorail extension being placed into revenue service which provides a direct connection to the Miami Intermodal Center.

Figure 4-17: Heavy Rail Route Miles



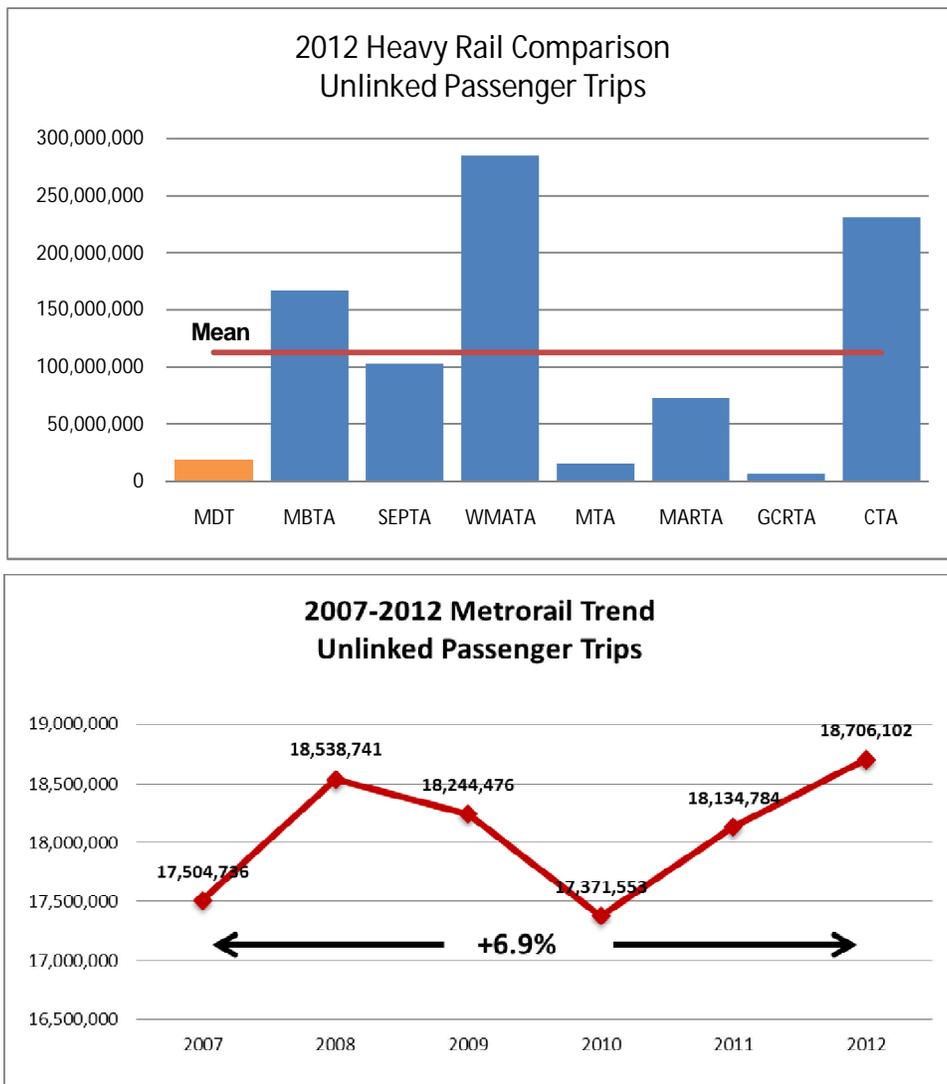
Data Source: NTD (2007 – 2012)

4.5.2 Unlinked Passenger Trips

Figure 4-18 graphically displays the number of unlinked passenger trips for MDT and each of the peer agencies. As the graph shows, in 2012 MDT's Metrorail system carried fewer unlinked passenger trips than any of the peer agencies except for MTA in Baltimore and GCRTA in Cleveland.

Metrorail unlinked passenger trips increased from 2007 to 2008, decreased from 2008 to 2010, and increased again from 2010 to 2012. Overall, passenger trips increased 6.9 percent from 2007 to 2012 for a total of 18.7 million trips in 2012.

Figure 4-18: Heavy Rail Unlinked Passenger Trips

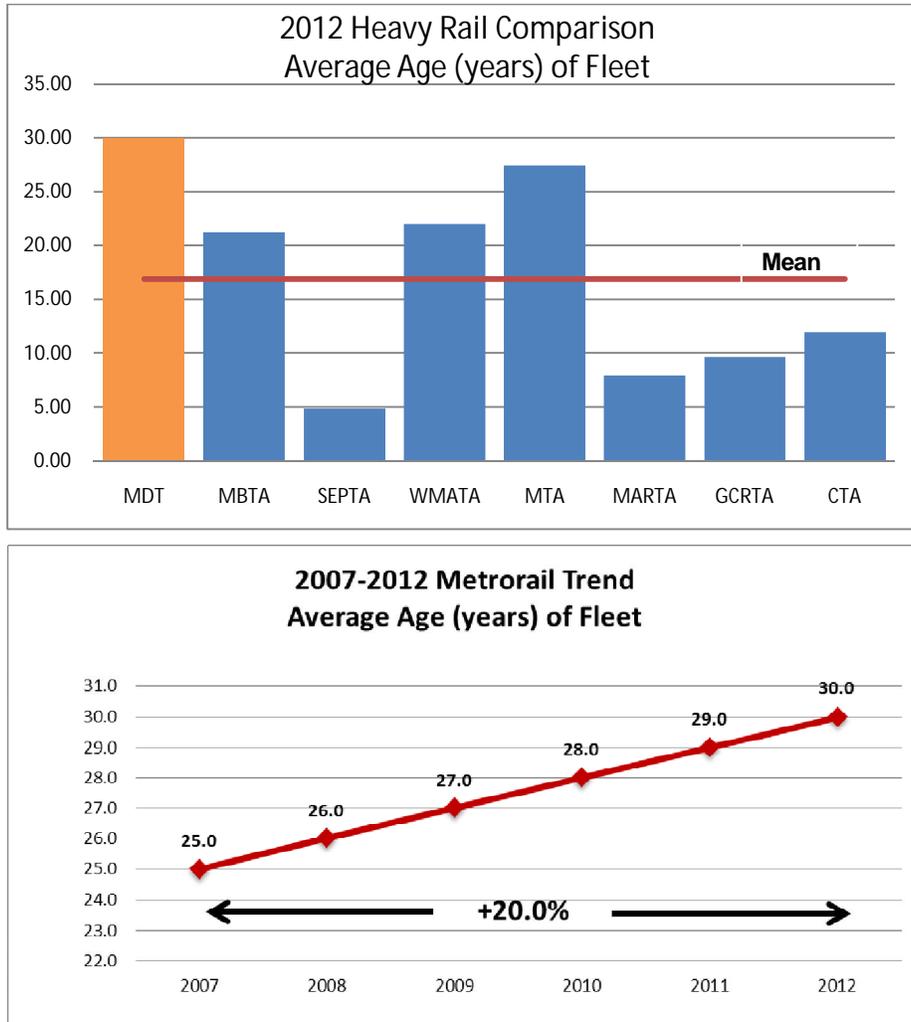


Data Source: NTD (2007 – 2012)

4.5.3 Average Age (years) of Heavy Rail Fleet

Figure 4-19 shows the average age³ of the heavy rail fleet for MDT and its peers. At an average age of 30 years, MDT's fleet is older than all its peers. Overall, the average age of MDT's Metrorail fleet increased by 20.0 percent from 2007 to 2012. However, MDT is currently in the process of implementing a new vehicle replacement program to replace the entire existing fleet of 136 Metrorail vehicles by 2018.

Figure 4-19: Average Age (years) of Heavy Rail Fleet



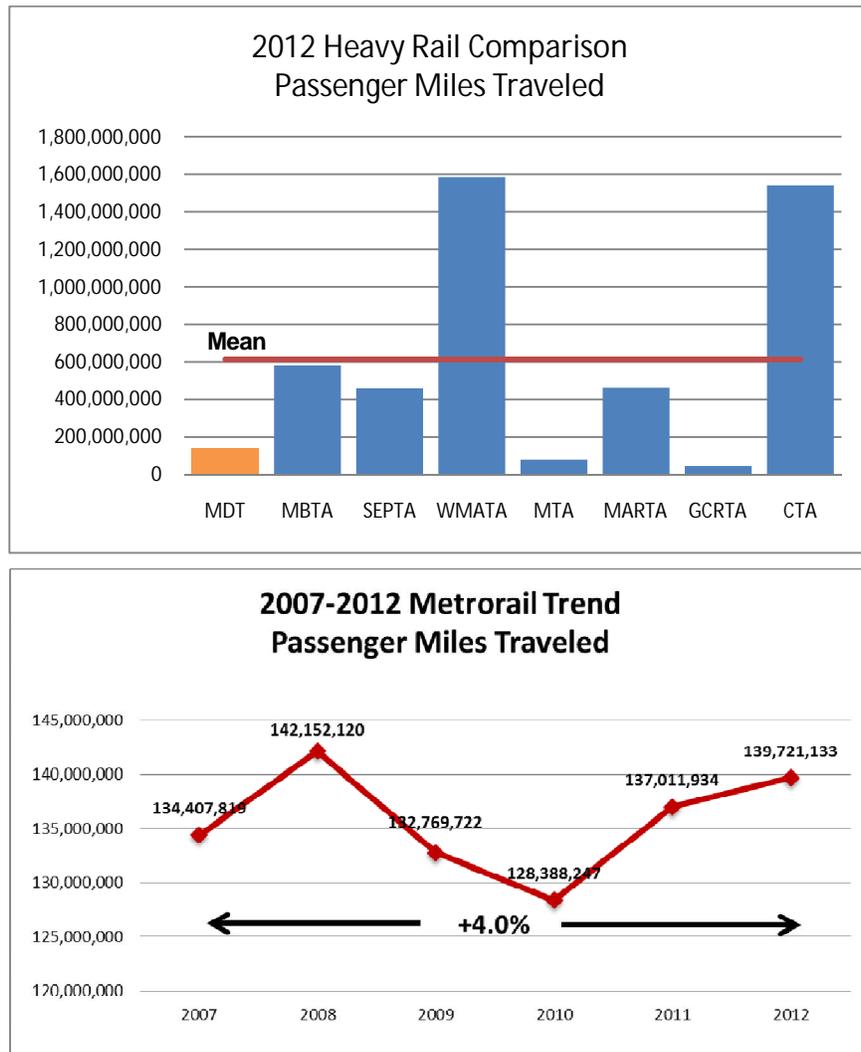
Data Source: NTD (2007 – 2012)

³ Average age is based on the vehicle's manufacture year, or re-build year if applicable. If a vehicles' manufacture year or re-build year were not reported by the agency, those vehicles were not included in the calculation.

4.5.4 Passenger Miles Traveled and Average Passenger Trip Length

Figure 4-20 shows heavy rail passenger miles traveled. MDT's Metrorail system carries more passenger miles than two peer agencies: MTA in Baltimore and GCRTA in Cleveland. Metrorail passenger miles traveled experienced a similar pattern to passenger trips. From 2007 to 2008 passenger miles increased, then decreased from 2008 to 2010 and increased again from 2010 to 2012. Overall, passenger miles increased 4.0 percent from 2007 to 2012.

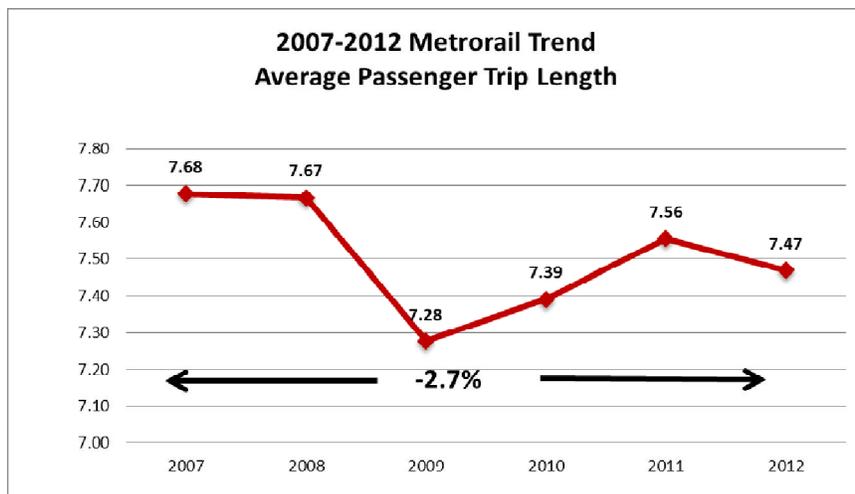
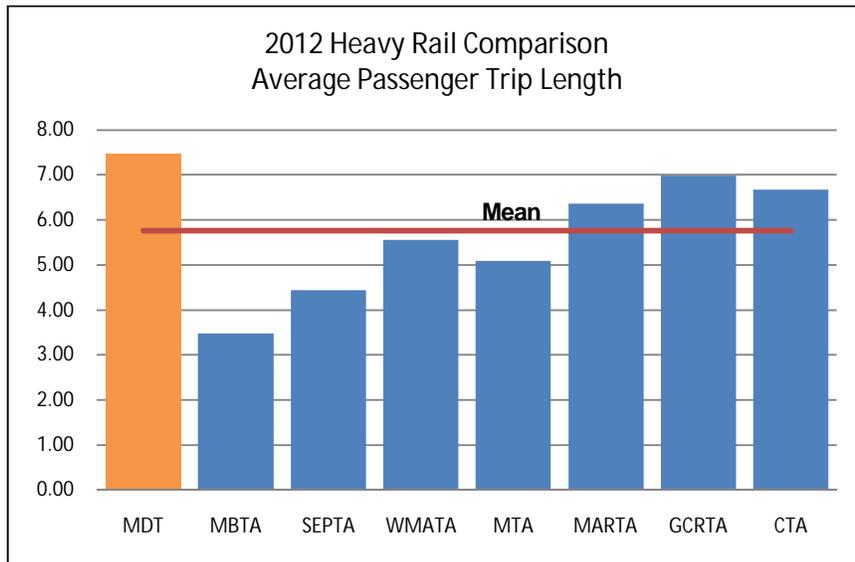
Figure 4-20: Heavy Rail Passenger Miles Traveled



Data Source: NTD (2007 – 2012)

MDT's average rail passenger trip is longer than all its peers, as shown in Figure 4-21. Overall, Metrorail's average passenger trip length has been fairly constant with only a 2.7 percent decline since 2007.

Figure 4-21: Heavy Rail Average Passenger Trip Length



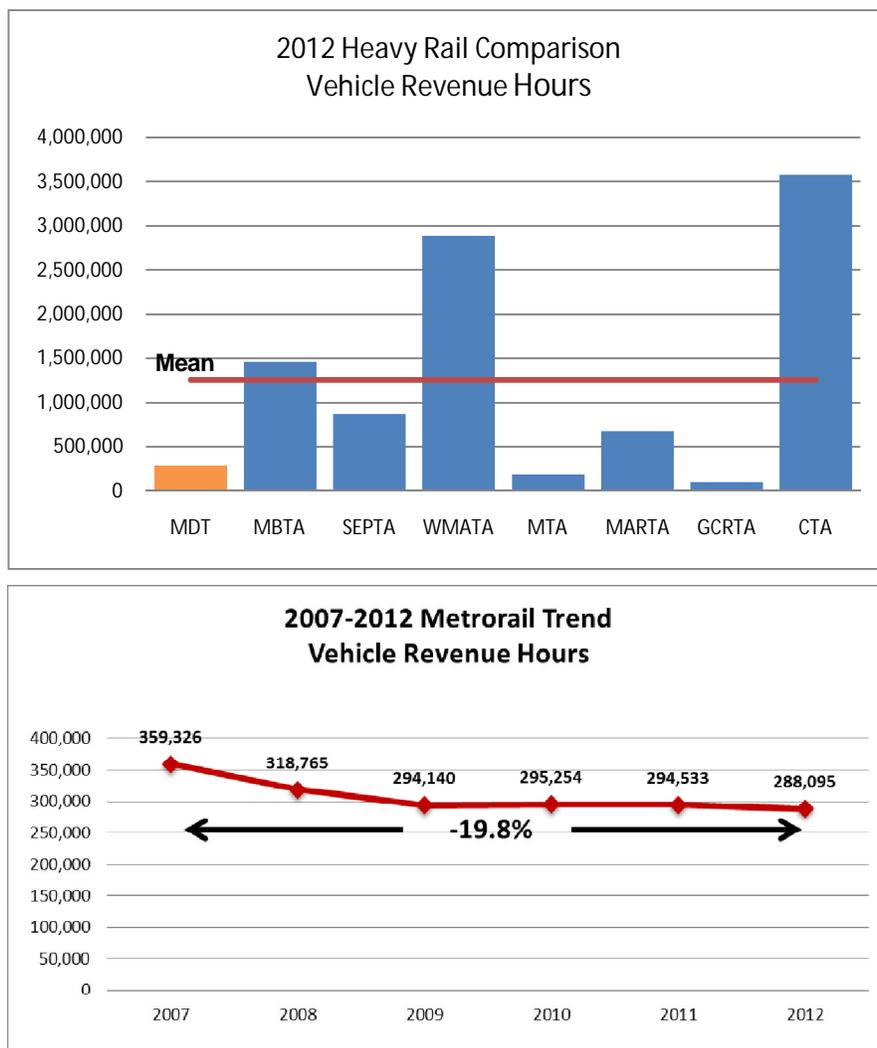
Data Source: NTD (2007 – 2012)

4.5.5 Vehicle Revenue Hours and Vehicle Revenue Miles

Figure 4-22 and Figure 4-23 show MDT's and its peer agencies' heavy rail vehicle revenue hours and vehicle revenue miles, respectively. As previously discussed, and as both figures show, MDT operates only a fraction of revenue miles and revenue hours compared to WMATA in Washington, DC, and CTA in Chicago.

This level of service comparison with other peer agencies illustrates a corresponding level of passenger trips per revenue hour and per revenue mile. From 2007 to 2012, Metrorail vehicle revenue hours decreased by 19.8 percent.

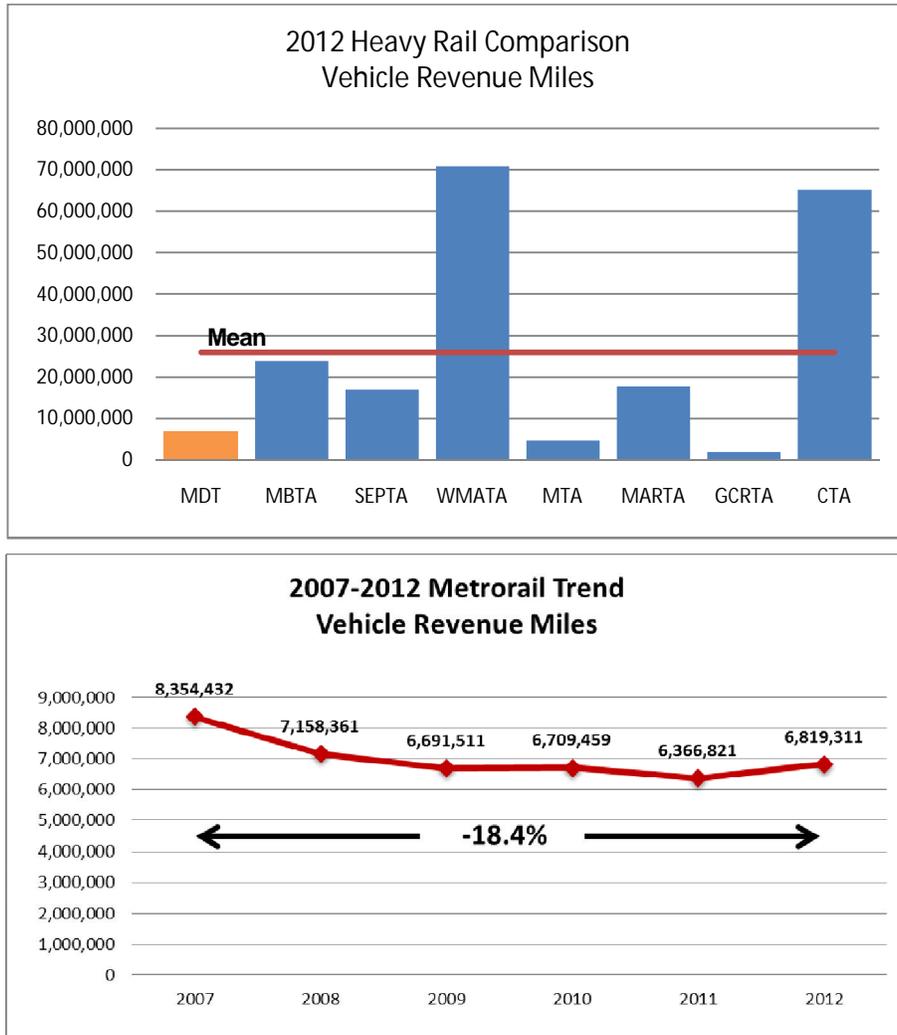
Figure 4-22: Heavy Rail Vehicle Revenue Hours



Data Source: NTD (2007 – 2012)

Metrorail vehicle revenue miles followed the same trend as revenue hours and decreased by 18.4 percent from 2007 to 2012.

Figure 4-23: Heavy Rail Vehicle Revenue Miles

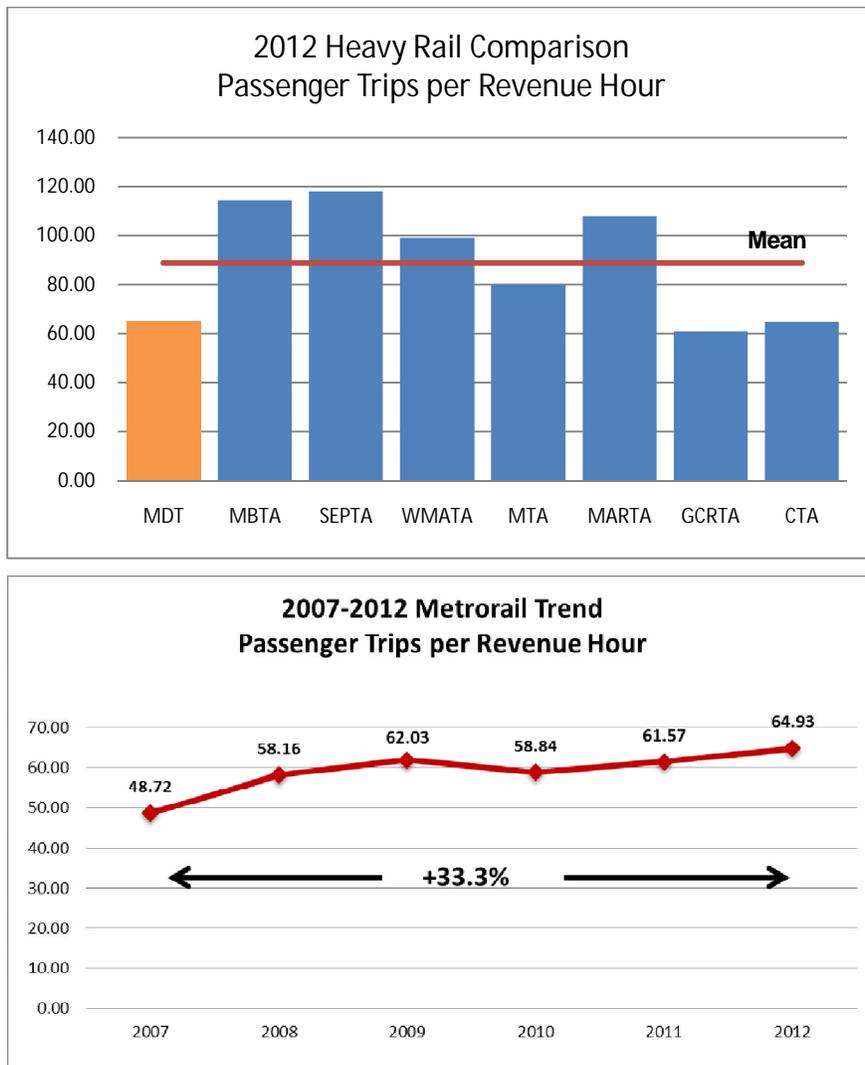


Data Source: NTD (2007 – 2012)

4.5.6 Passenger Trips per Revenue Hour and Revenue Mile

Metrorail passenger trips per revenue hour and per revenue mile increased from 2007 to 2009, decreased slightly from 2009 to 2010, then increased from 2010 to 2012. Overall, passenger trips per revenue hour and per revenue mile have increased by 33.3 percent and 30.9 percent respectively. Both of these measures have similar trends which reflect MDT's passenger trip increases and decreases over the last six years.

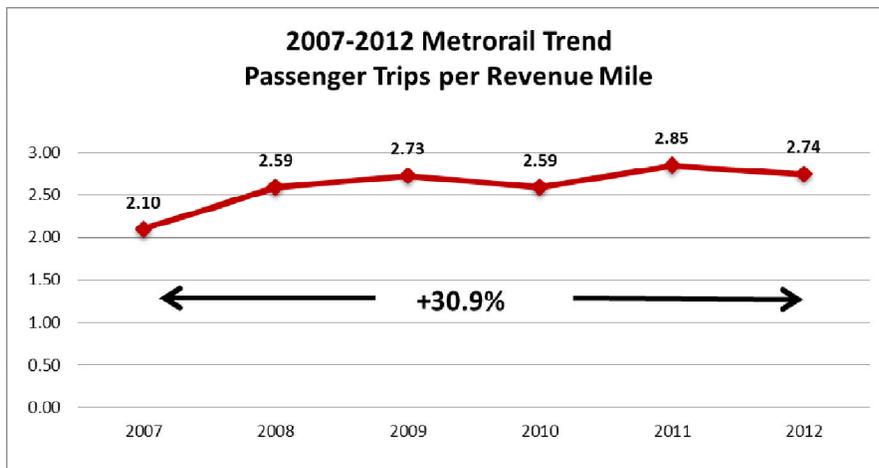
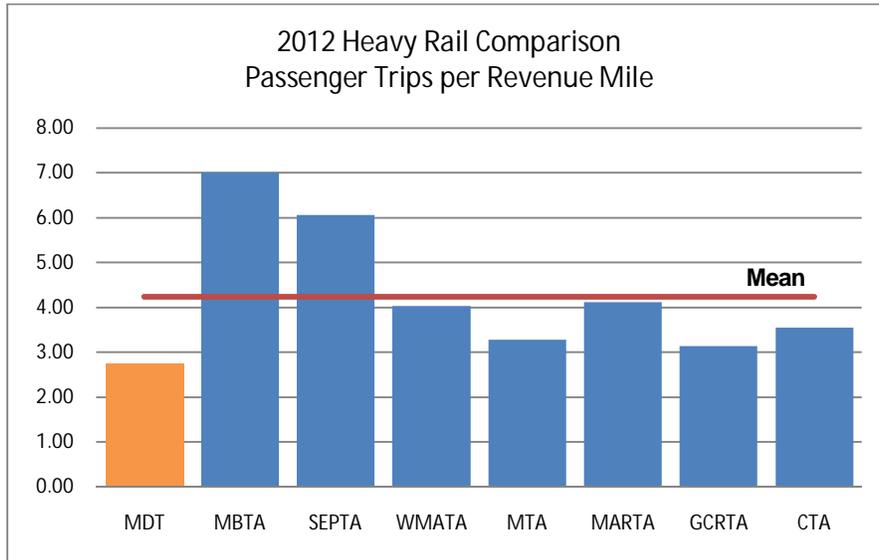
Figure 4-24: Heavy Rail Passenger Trips per Revenue Hour



Data Source: NTD (2007 – 2012)

As Figure 4-25 shows, in terms of heavy rail passenger trips per revenue mile, MDT is the lowest of the peer agencies. As shown Figure 4-26, MDT's ratio of 65 passenger trips per revenue hour is second to last, only higher than GCRTA in Cleveland.

Figure 4-25: Heavy Rail Passenger Trips per Revenue Mile

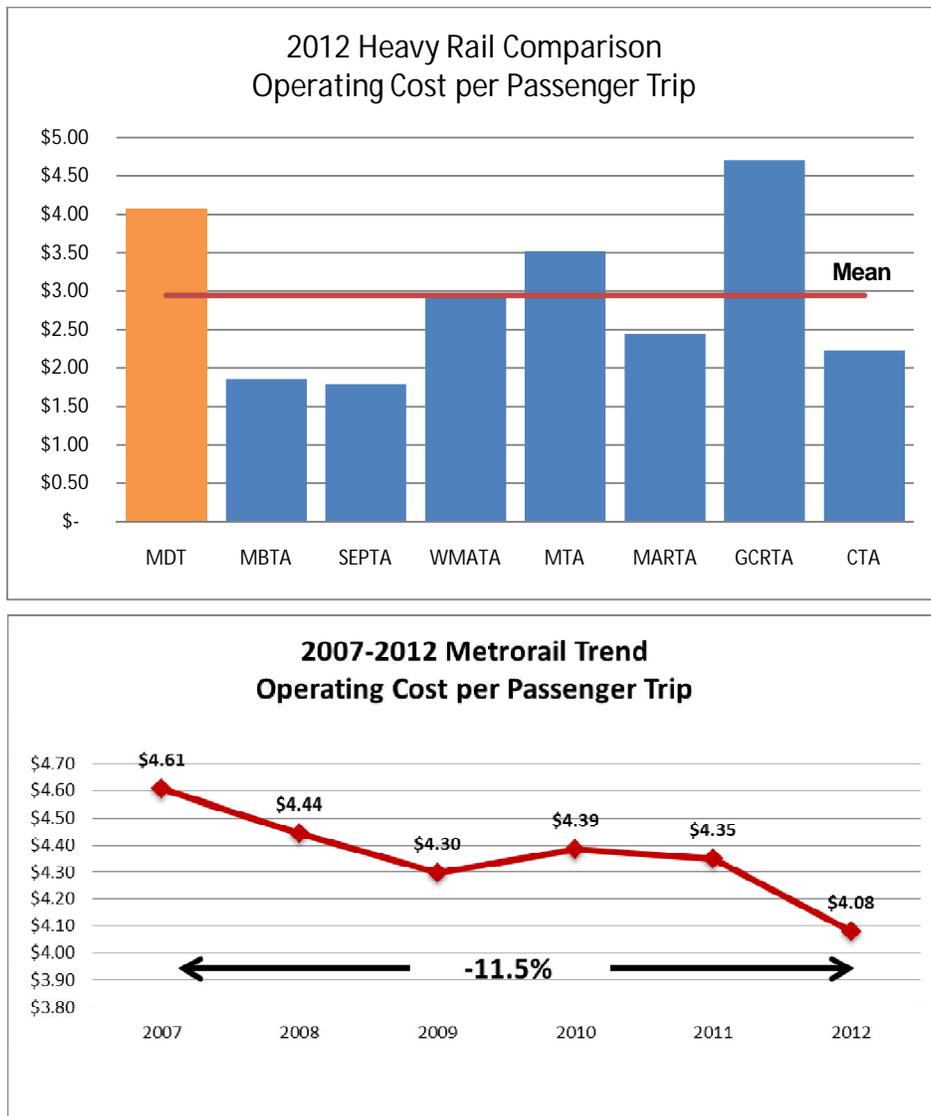


Data Source: NTD (2007 – 2012)

4.5.7 Operating Cost per Passenger Trip and Revenue Hour

Figure 4-26 shows operating cost per passenger trip for MDT and the selected peers. MDT has a relatively higher operating cost per passenger trip than all the peers, except GCRTA. This is due to relatively lower ridership on MDT's system compared to the volume of service it operates. Overall, Metrorail operating cost per passenger trip decreased by 11.5 percent from 2007 to 2012.

Figure 4-26: Heavy Rail Operating Cost per Passenger Trip

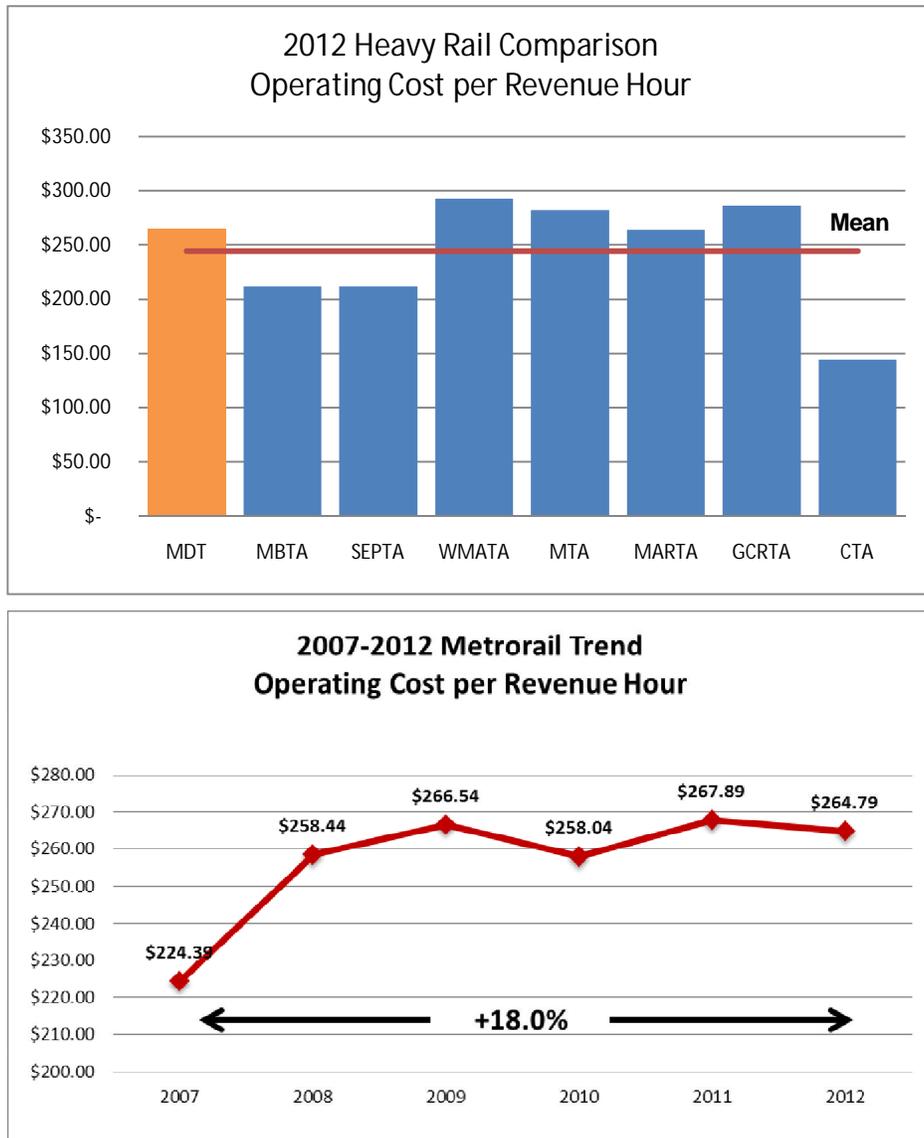


Data Source: NTD (2007 – 2012)

When looking at operating costs per revenue hour, MDT is slightly higher than the peer mean, but lower than WMATA, MTA, MARTA and GCRTA as seen in Figure 4-27.

Metrorail operating cost per revenue hour, a measure of efficiency, increased significantly from 2007 to 2008 then oscillated from 2008 to 2012. Overall, the operating cost per revenue hour increased 18.0 percent from 2007 to 2012.

Figure 4-27: Heavy Rail Operating Cost per Revenue Hour

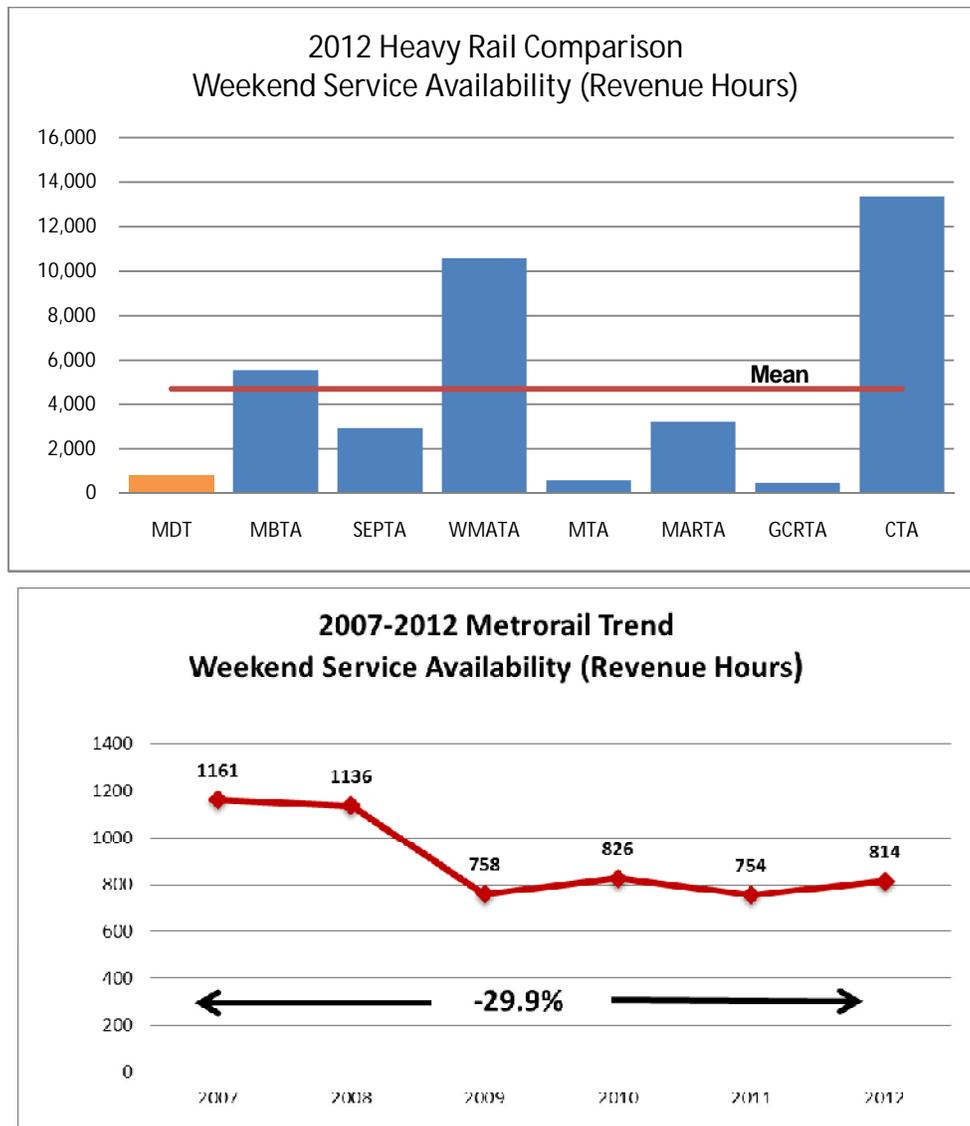


Data Source: NTD (2007 – 2012)

4.5.8 Weekend Service Availability (Revenue Hours)

Figure 4-28 shows heavy rail revenue hours during a typical weekend (Saturday and Sunday) as a measure of weekend service availability. As the graphic shows, MDT only provides more weekend service than MTA and GCRTA. Between 2008 and 2009, Metrorail weekend service revenue hours decreased significantly and have remained relatively steady for the last three years.

Figure 4-28: Heavy Rail Weekend Service Availability (Revenue Hours)

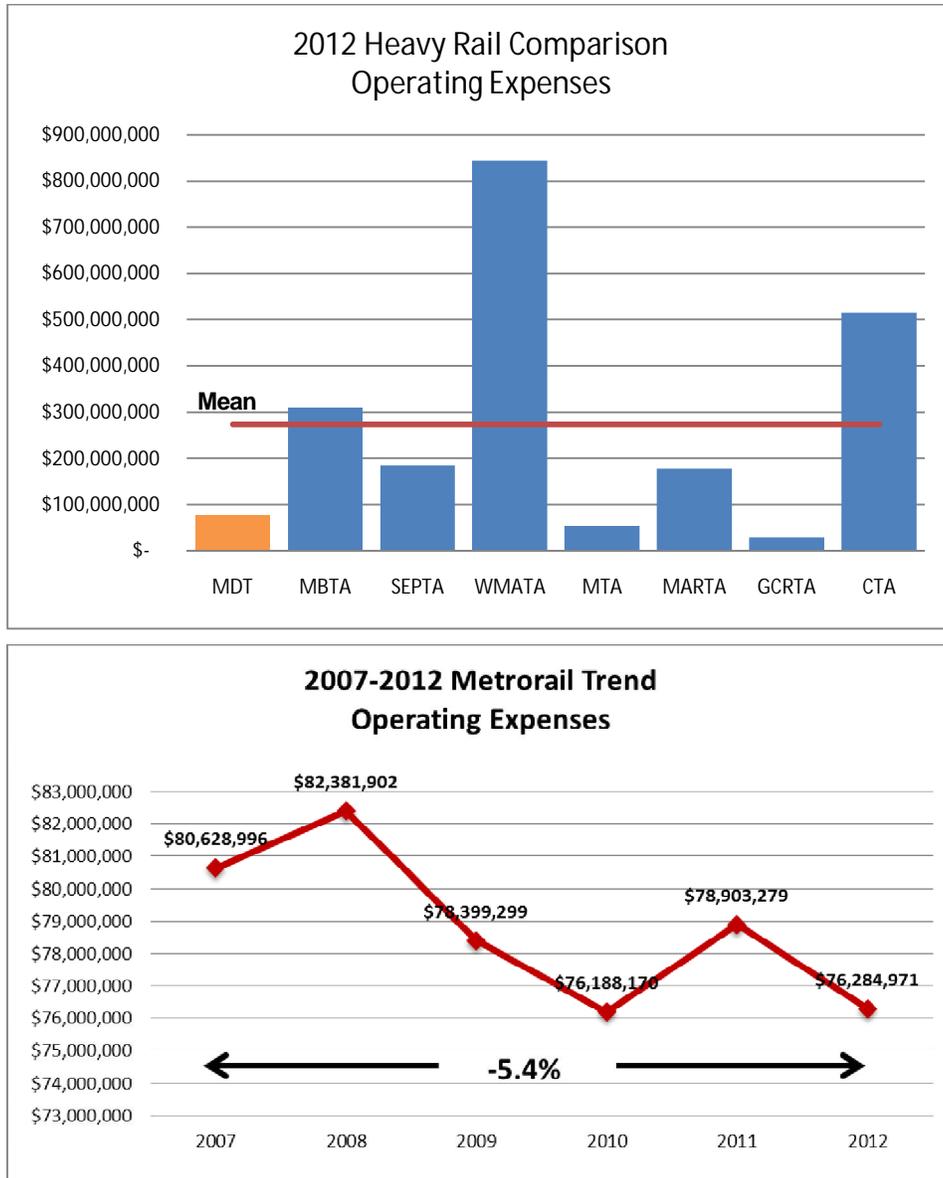


Data Source: NTD (2007 – 2012)

4.5.9 Operating Expenses

Figure 4-29 shows operating expenses for heavy rail for MDT and its selected peers. MDT's total operating expenses for Metrorail in 2012 was close to \$76.3 million and is lower than most of its selected peers, except MTA and GCRTA. Metrorail operating expenses have decreased by 5.4 percent since 2007.

Figure 4-29: Heavy Rail Operating Expenses

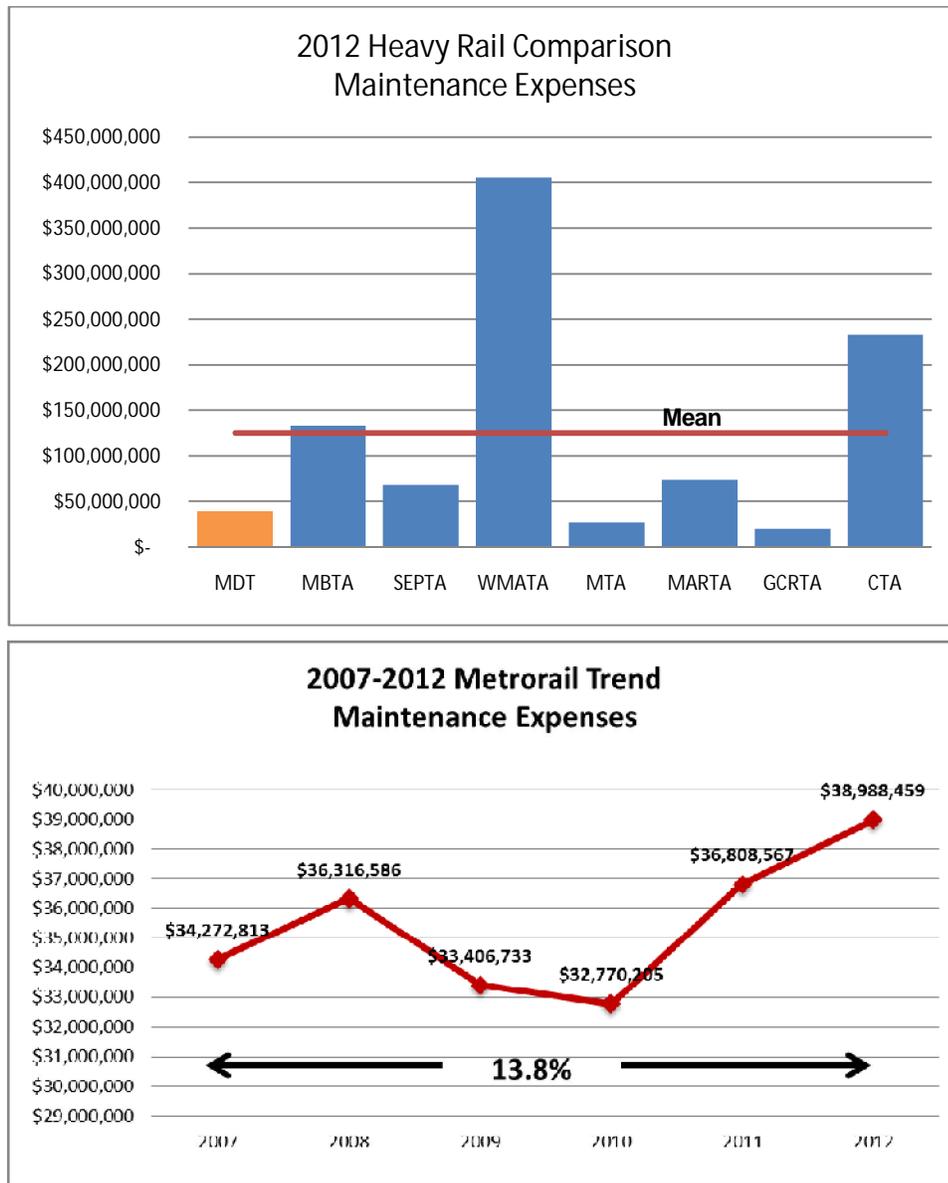


Data Source: NTD (2007 – 2012)

4.5.10 Maintenance Expense

Figure 4-30 shows maintenance expenses for MDT and its selected peers. MDT's maintenance expenses are ranked sixth among its selected peers. Over the last five years maintenance expenses have increased by 13.8 percent.

Figure 4-30: Heavy Rail Maintenance Expenses

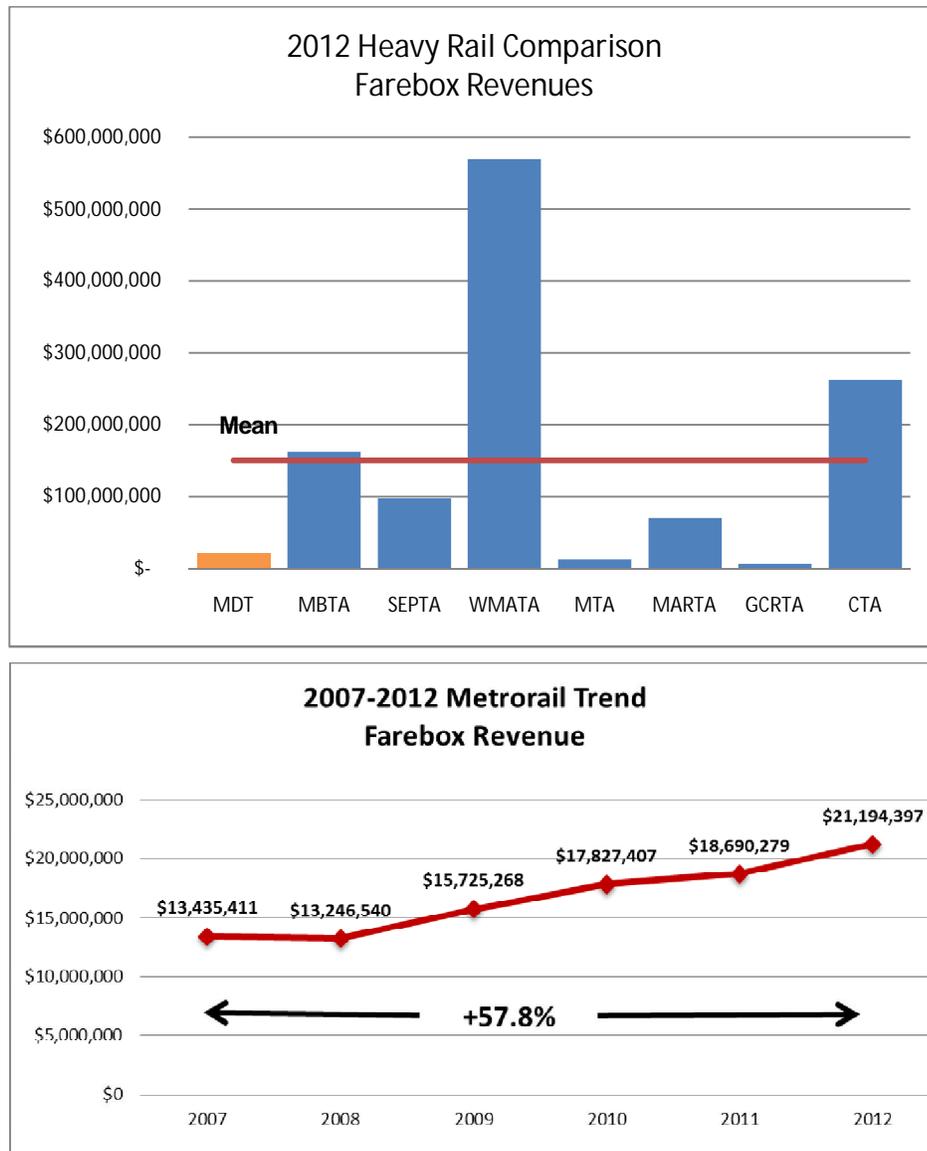


Data Source: NTD (2007 – 2012)

4.5.11 Farebox Revenues

As shown in Figure 4-31, MDT's farebox revenue of \$21.2 million ranks fifth among the selected peers. Since 2007, Metrorail's fare revenue has been increasing which has resulted in a total increase of 57.8 percent over the last five years.

Figure 4-31: Heavy Rail Farebox Revenues

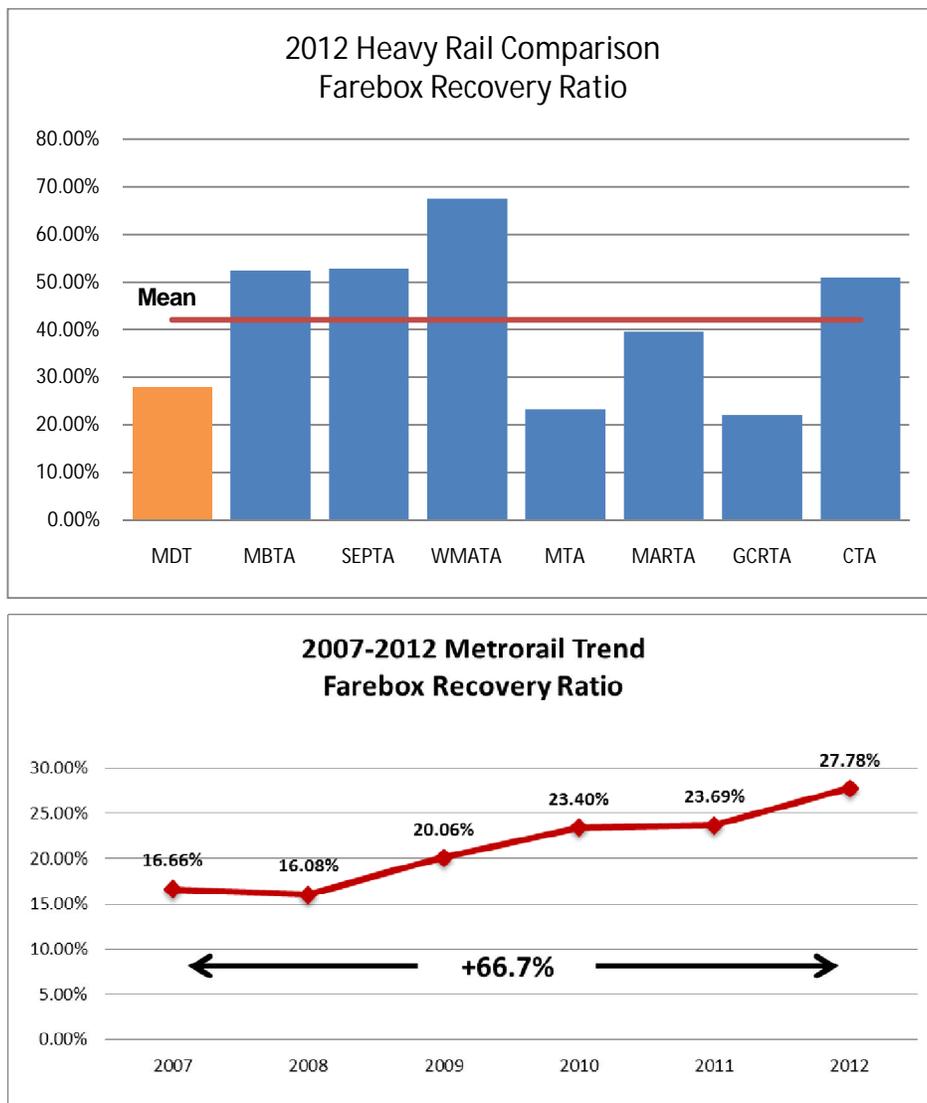


Data Source: NTD (2007 – 2012)

4.5.12 Farebox Recovery Ratio

Figure 4-32 shows the farebox recovery ratio for MDT and its peer agencies. MDT's twenty-eight percent farebox recovery ratio is below the peer mean of forty-two percent, but higher than MTA's and GCRTA's farebox recovery ratios. As mentioned previously, MDT has two programs offering free passes to seniors and eligible veterans; this lowers the farebox recovery ratio. Metrorail experienced a slight decrease in farebox recovery from 2007 to 2008, but has been increasing since 2008 partially due to the implementation of EASY Cards in 2009. Overall, the farebox recovery increased by 66.7 percent from 2007 to 2012.

Figure 4-32: Heavy Rail Farebox Recovery Ratio



Data Source: NTD (2007 – 2012)

4.6 Automated Guideway Peer Comparison and Trend

Table 4-6 compares statistics for the peer agencies for automated guideway service, or people mover service. There are few agencies in the United States that operate automated guideway systems. As a result, there are only two (2) peers for this comparison, Jacksonville Transportation Authority (JTA) and Detroit Transportation Corporation (DTC). Each of these systems differs from one another and from MDT's Metromover in terms of operation, fare collection, and the areas and cities they serve. Metromover is the oldest of the people mover systems, serves the largest and strongest downtown area of the peer cities, and the only system that connects directly to a heavy rail system that provides a connection to a regional commuter rail system. The differences between the systems and the cities they serve make comparisons relatively difficult. Conclusions based on those comparisons should be regarded as being far less definitive than the conclusions drawn from comparisons with the peer groups in the areas of bus, heavy rail, or demand response service.



Table 4-7 provides an overview of the Metromover as compared to its peers in terms of operating trends.

Table 4-6: Automated Guideway Peer Comparison (2012)

Agency	MDT	JTA	DTC	Peer Mean
City	Miami, FL	Jacksonville, FL	Detroit, MI	
Route Miles	9.40	5.40	2.90	5.90
Unlinked Passenger Trips	9,102,431	817,153	2,388,280	4,102,621
Average Age (yrs.) of Automated Guideway Fleet	8.84	13.60	26.00	16.15
Passenger Miles Traveled	9,738,748	374,940	3,589,212	4,567,633
Average Passenger Trip Length	1.07	0.46	1.50	1.01
Vehicle Revenue Hours	105,429	15,436	47,100	55,988
Vehicle Revenue Miles	1,075,378	178,399	548,814	600,864
Passenger Trips per Revenue Hour	86.34	52.94	50.71	63.33
Passenger Trips per Revenue Mile	8.46	4.58	4.35	5.80
Operating Cost per Passenger Trip	\$2.59	\$7.61	\$4.38	\$4.86
Operating Cost per Revenue Hour	\$224.02	\$403.07	\$222.01	\$283.03
Weekend Service Availability (Revenue Hrs)	492	0	212	234.67
Operating Expenses	\$23,618,673	\$6,221,789	\$10,456,643	\$13,432,368
Maintenance Expenses	\$12,768,298	\$3,685,825	\$4,231,890	\$6,895,338
Farebox Revenues	\$0	\$67,996	\$1,160,574	\$409,523
Farebox Recovery Ratio	0.00%	46.32%	77.85%	41.39%

Data Source: 2012 NTD

Table 4-7: MDT Metromover 2007-2012 Trend

Performance Measures	2007	2008	2009	2010	2011	2012
Route Miles	9.4	9.4	9.4	9.4	9.4	9.4
Unlinked Passenger Trips	8,622,729	8,839,156	8,100,144	8,013,220	9,167,109	9,102,431
Average Age (yrs.) of Automated Guideway Fleet	16.4	16.3	9.4	Not Reported	9.8	8.8
Passenger Miles Traveled	8,840,136	8,593,648	8,408,218	8,732,726	10,039,936	9,738,748
Average Passenger Trip Length	1.03	0.97	1.04	1.09	1.10	1.07
Vehicle Revenue Hours	91,657	110,228	105,517	103,447	105,245	105,429
Vehicle Revenue Miles	934,906	1,120,647	1,073,135	1,055,673	1,073,494	1,075,378
Passenger Trips Per Revenue Hour	94.08	80.19	76.77	77.46	87.10	86.34
Passenger Trips Per Revenue Mile	9.22	7.89	7.55	7.59	8.54	8.46
Operating Cost Per Passenger Trip	\$2.44	\$2.58	\$2.87	\$2.61	\$2.56	\$2.59
Operating Cost Per Revenue Hour	\$229.12	\$207.23	\$220.49	\$202.00	\$222.85	\$224.02
Weekend Service Availability (Rev. Hrs)	488	516	494	488	494	492
Operating Expenses	\$21,000,653	\$22,842,866	\$23,265,217	\$20,896,673	\$23,454,100	\$23,618,673
Maintenance Expenses	\$11,439,965	\$11,711,857	\$11,991,513	\$9,752,065	\$12,481,898	\$12,768,298
Farebox Revenue	\$0	\$0	\$0	\$0	\$0	\$0
Farebox Recovery Ratio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Data Source: NTD (2007 – 2012)

4.6.1 Route Miles

As Figure 4-33 illustrates, MDT's automated guideway system (Metromover) operates more route miles than the selected peer agencies. Metromover route miles have remained unchanged since 2007.

Figure 4-33: Automated Guideway Route Miles



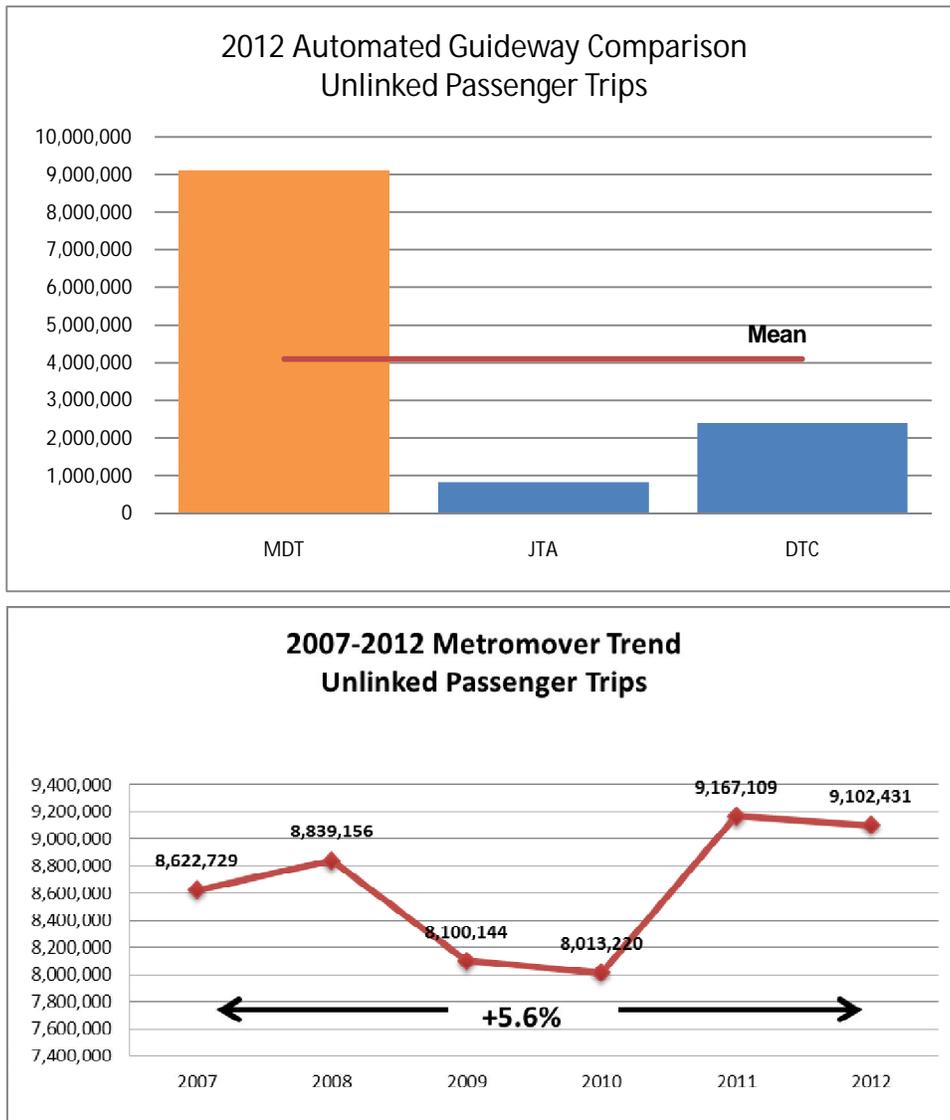
Data Source: NTD (2007 – 2012)

4.6.2 Unlinked Passenger Trips

Figure 4-34 shows the number of unlinked passenger trips for MDT and its selected peers. In 2012, MDT's Metromover system handled more than nine (9) million unlinked passenger trips, highest among its peers.

Metromover unlinked passenger trips decreased significantly from 2008 to 2010 then increased from 2010 to 2011. Overall, passenger trips increased 5.6 percent from 2007 to 2012.

Figure 4-34: Automated Guideway Unlinked Passenger Trips

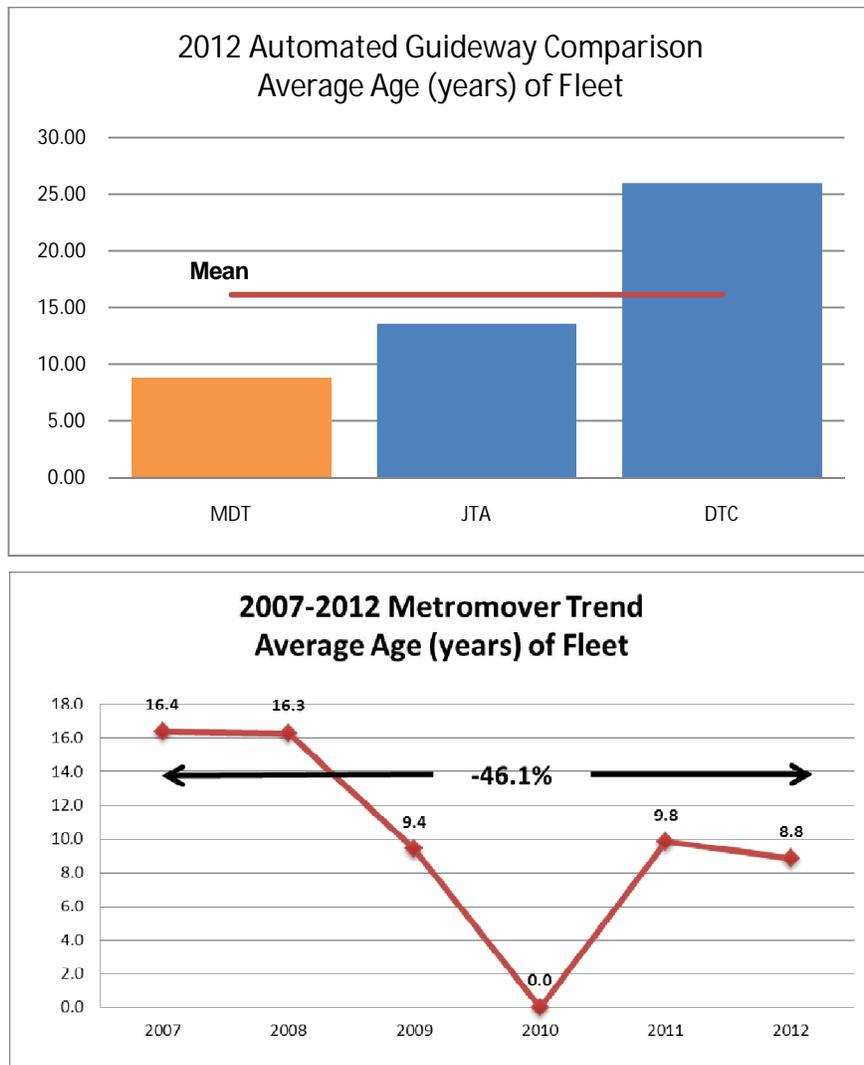


Data Source: NTD (2007 – 2012)

4.6.3 Average Age (years) of Automated Guideway Fleet

As seen in Figure 4-35, the average age⁴ of MDT's Metromover fleet is younger than its selected peers; this is due to MDT's recent upgrade of its Metromover fleet. The average age of the Metromover fleet has significantly declined as a result of MDT's procurement of new Metromover vehicles to replace the original 12 Metromover cars as well as the purchase an additional 29 new vehicles.

Figure 4-35: Average Age (years) of Automated Guideway Fleet



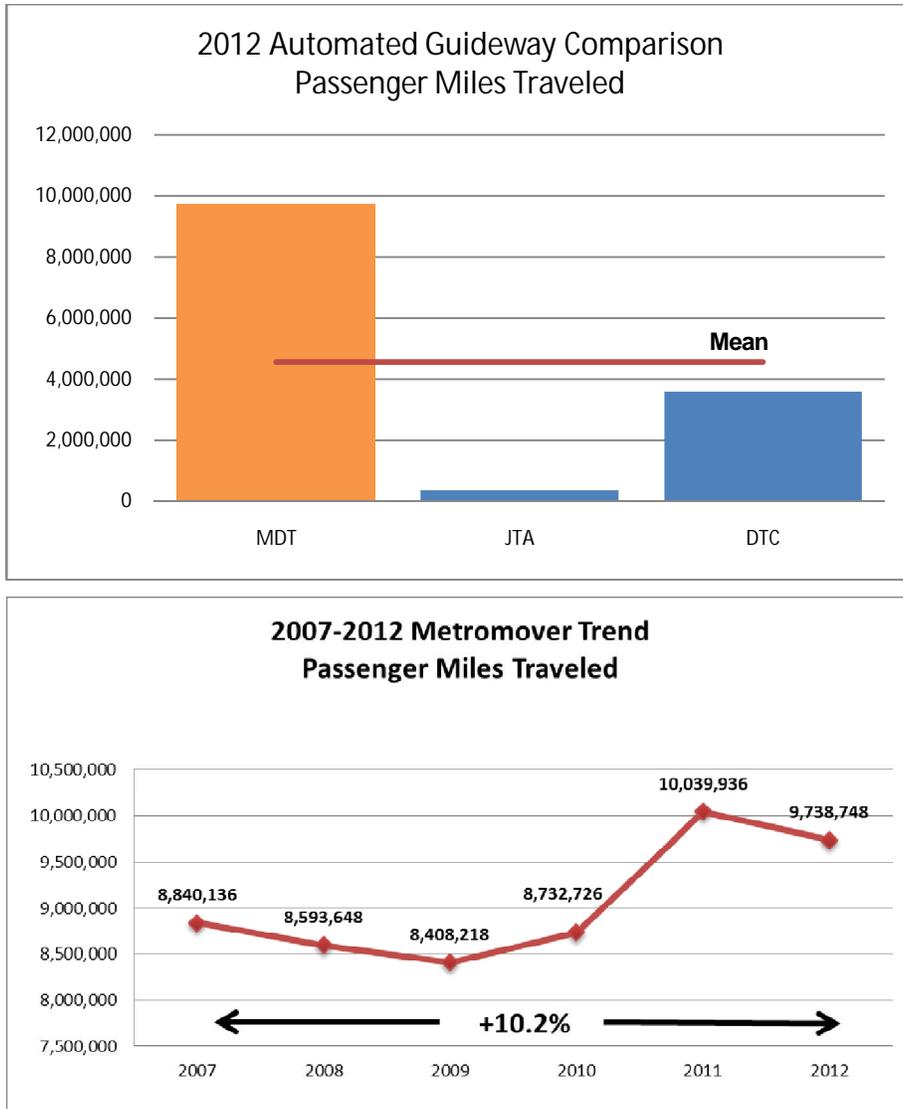
Data Source: NTD (2007 – 2012)

⁴ Average age is based on the vehicle's manufacture year, or re-build year if applicable. If a vehicles' manufacture year or re-build year were not reported by the agency, those vehicles were not included in the calculation.

4.6.4 Passenger Miles Traveled and Average Passenger Trip Length

As seen in Figure 4-36, MDT has the highest number of passenger miles when compared to the rest of the peer group. Metromover passenger miles traveled decreased slightly from 2007 to 2009 then increased from 2009 to 2011. Overall, passenger trips increased 10.2 percent from 2007 to 2012.

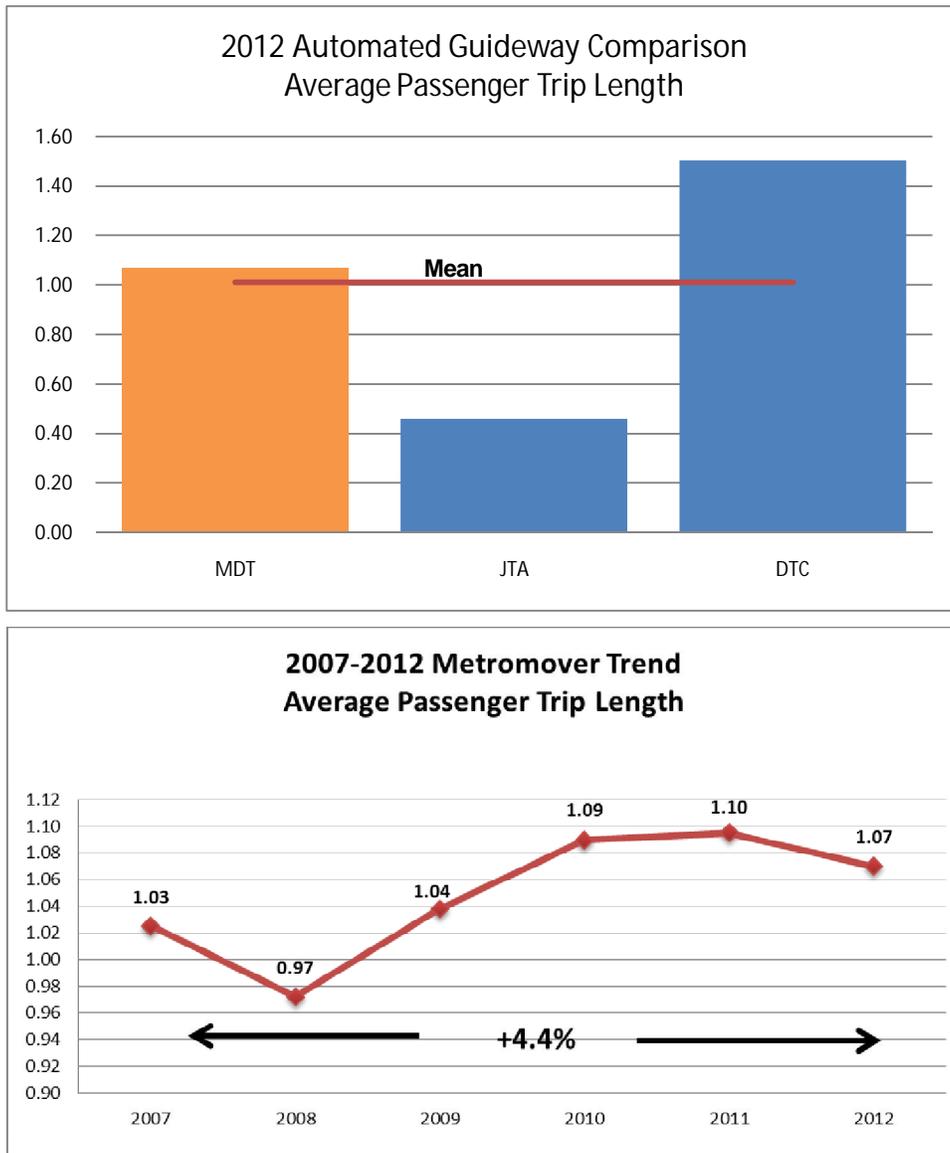
Figure 4-36: Automated Guideway Passenger Miles Traveled



Data Source: NTD (2007 – 2012)

Figure 4-37 shows the average trip length for MDT’s Metromover system and the selected peers. MDT’s trip length is around the average of one mile. The average passenger trip length on Metromover has slightly increased over the last six years by 4.4 percent.

Figure 4-37: Automated Guideway Average Passenger Trip Length

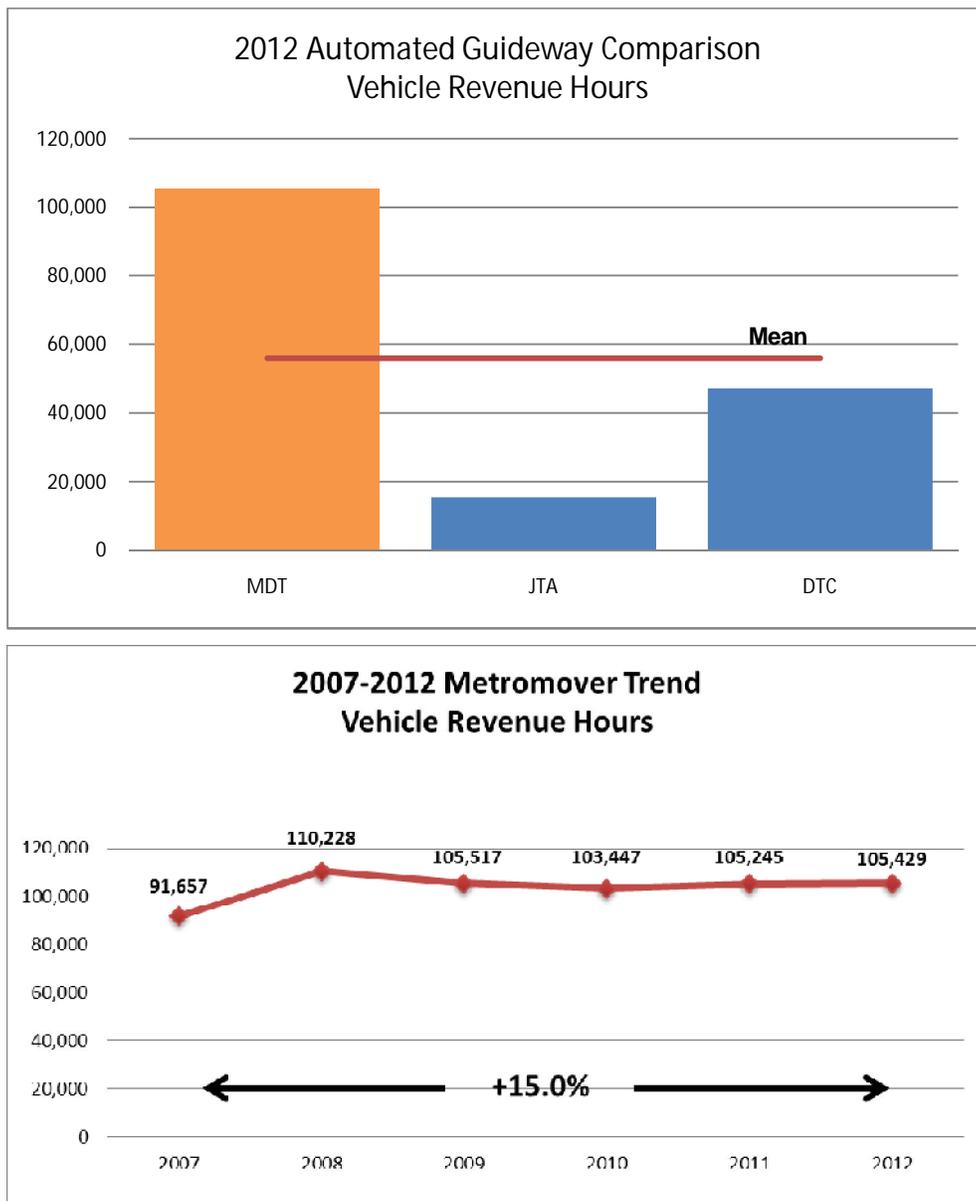


Data Source: NTD (2007 – 2012)

4.6.5 Vehicle Revenue Hours and Vehicle Revenue Miles

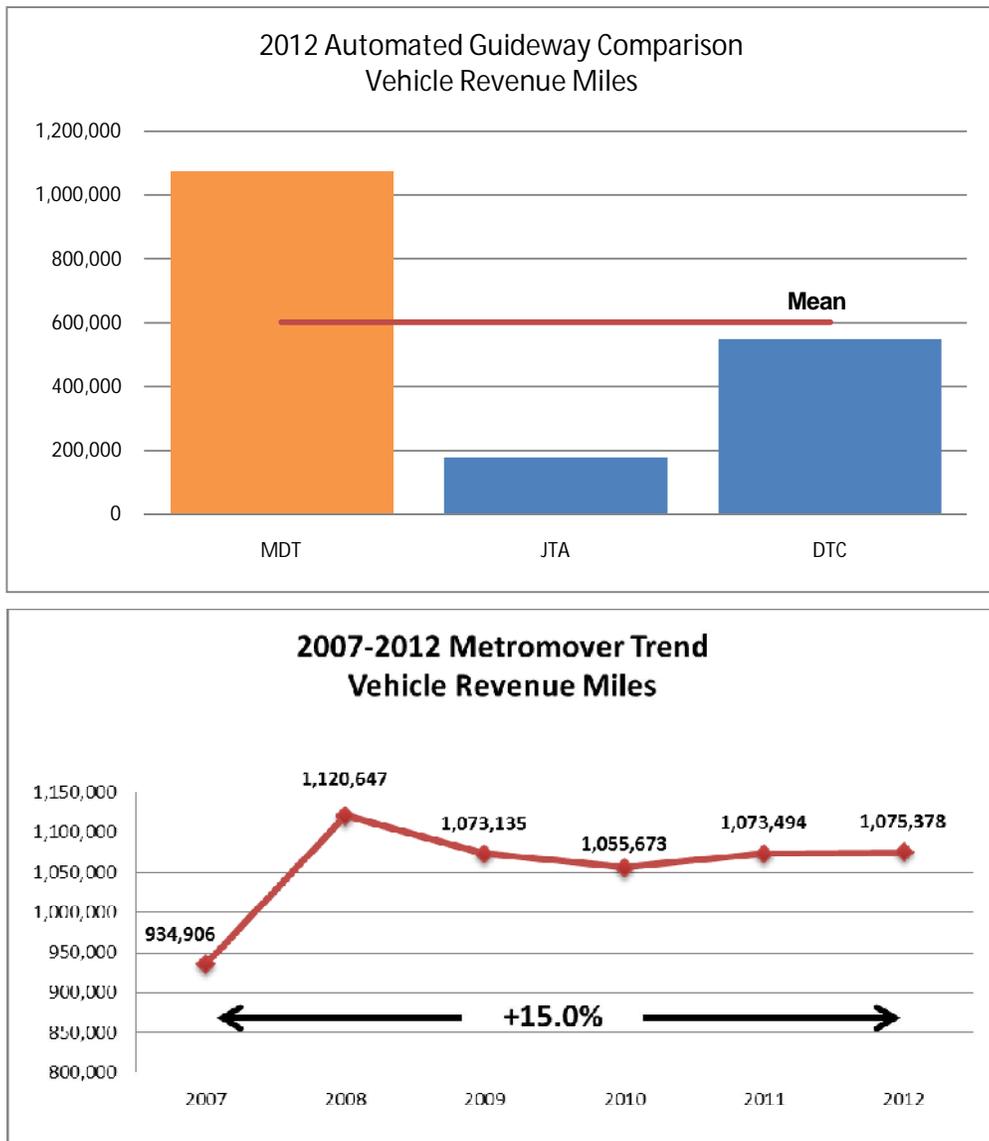
Figure 4-38 and Figure 4-39 display vehicle revenue hours and vehicle revenue miles for MDT and its peers. As of 2012, MDT operates more automated guideway revenue hours and revenue miles than both its peers. Metromover vehicle revenue hours and miles increased from 2007 to 2008 then decreased slightly and stayed relatively level from 2009 to 2012. Overall, both vehicle revenue hours and revenue miles increased 15.0 percent from 2007 to 2012.

Figure 4-38: Automated Guideway Vehicle Revenue Hours



Data Source: NTD (2007 – 2012)

Figure 4-39: Automated Guideway Vehicle Revenue Miles

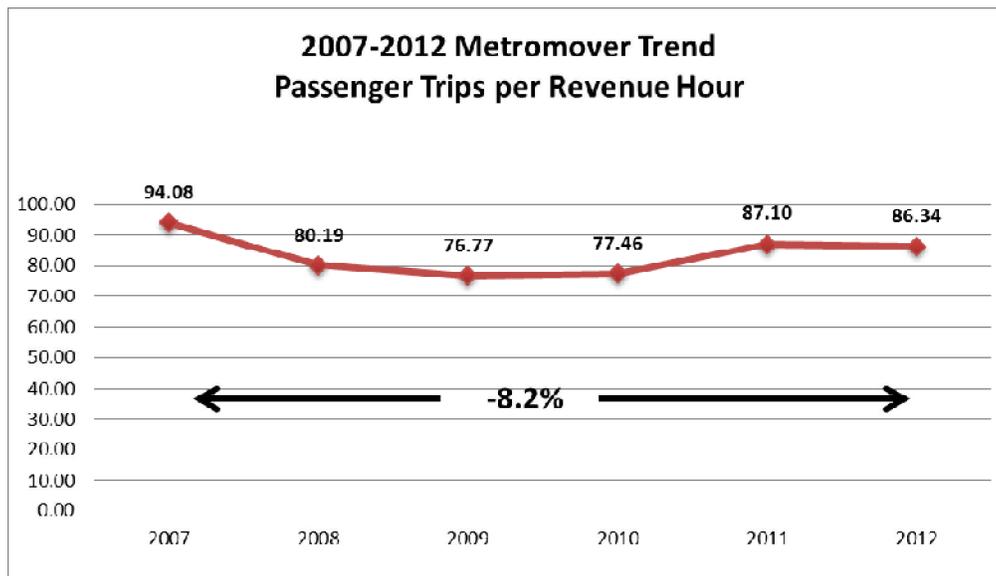
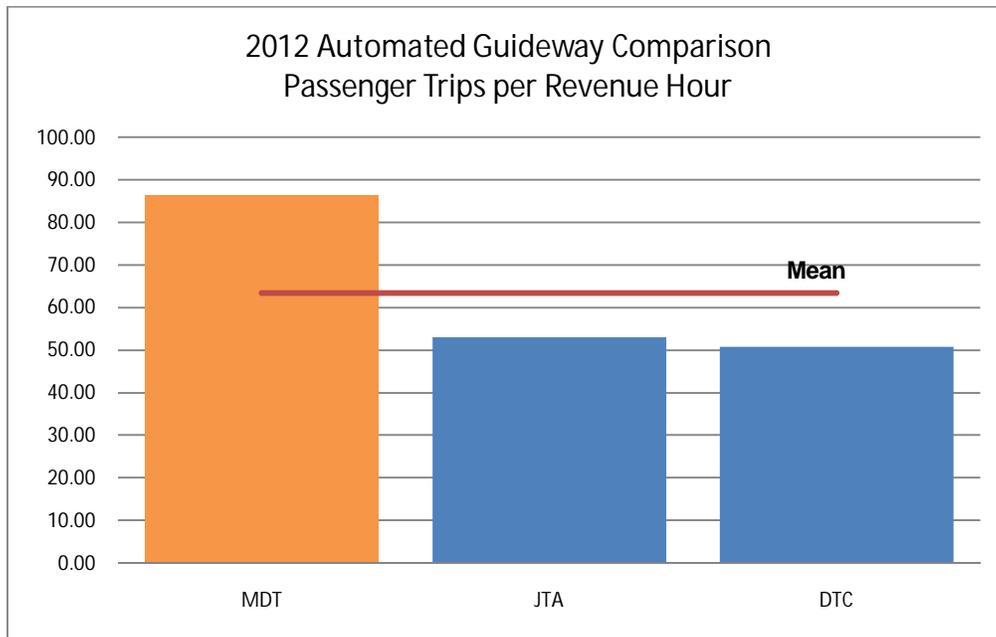


Data Source: NTD (2007 – 2012)

4.6.6 Passenger Trips per Revenue Hour and Revenue Mile

Passenger trips per revenue hour and passenger trips per revenue mile are shown in Figure 4-40 and Figure 4-41, respectively. MDT ranks first in both measures, with JTA and DTC reporting similar ratios to each other for both measures.

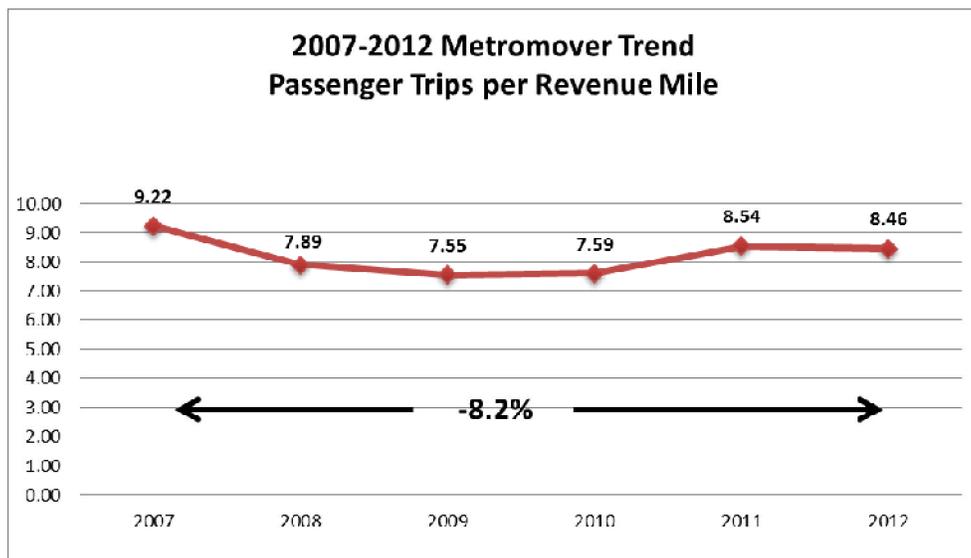
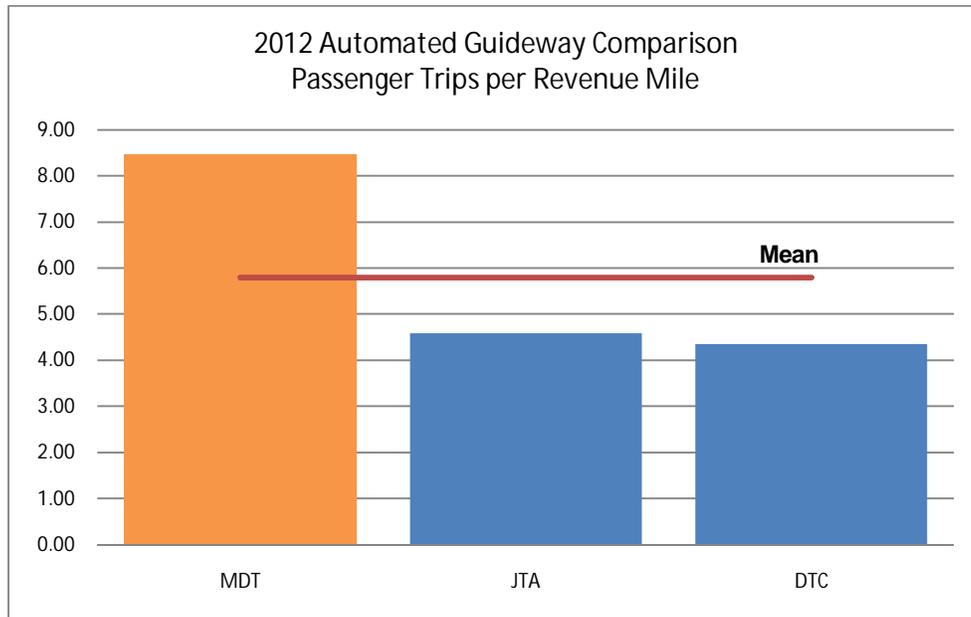
Figure 4-40: Automated Guideway Passenger Trips per Revenue Hour



Data Source: NTD (2007 – 2012)

For the 2007–2012 trend, both measures reflect the same pattern. Metromover passenger trips per revenue hour and per revenue mile both decreased slightly from 2007 to 2008, stayed relatively level from 2008 to 2010, and then increased slightly from 2010 to 2012. Overall, passenger trips per revenue hour and per revenue mile have decreased by 8.2 percent each.

Figure 4-41: Automated Guideway Passenger Trips per Revenue Mile



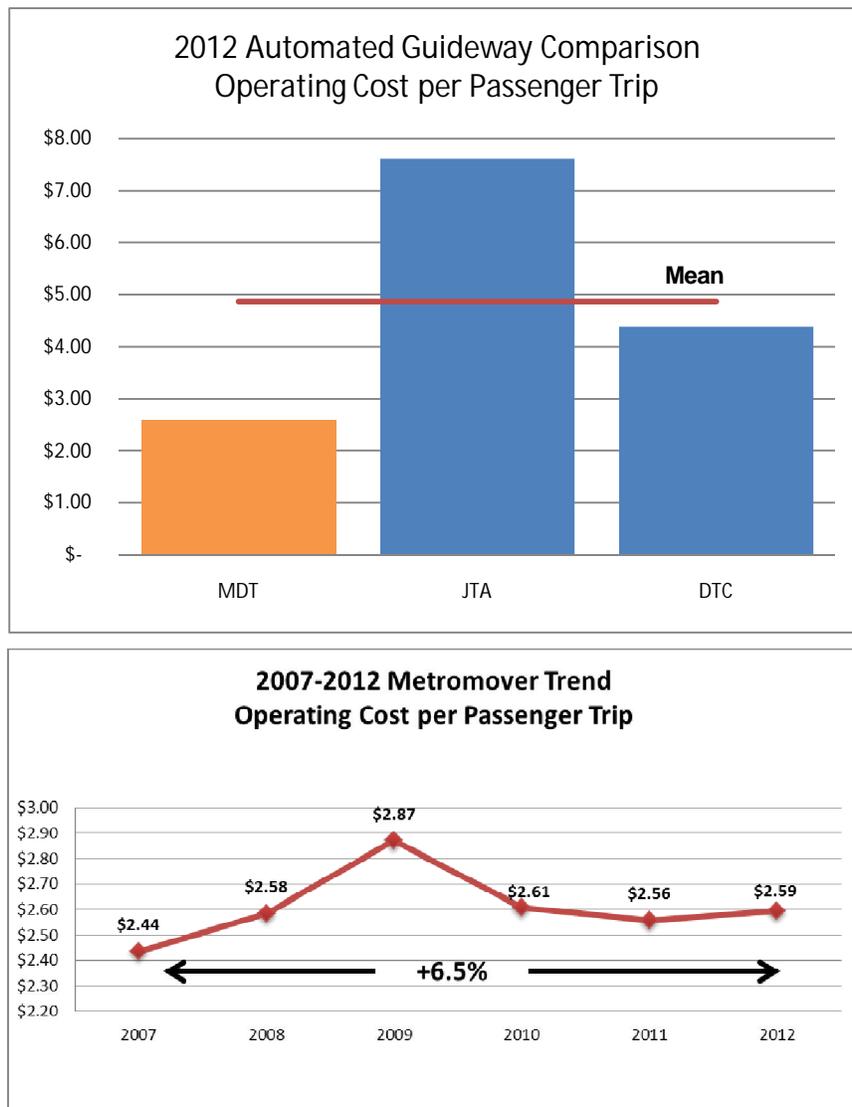
Data Source: NTD (2007 – 2012)

4.6.7 Operating Cost per Passenger Trip and Revenue Hour

Figure 4-42 and Figure 4-43 illustrate efficiency as measured by operating cost per passenger trip and operating cost per revenue hour, for MDT and selected peers. MDT ranks lowest for operating cost per passenger trip, but ranks second for operating cost per revenue hour with DTC having lower cost per revenue hour.

Metromover operating cost per passenger trip increased significantly from 2007 to 2009, but has since decreased and remained stable. Overall, there was a 6.5 percent increase from 2007 to 2012.

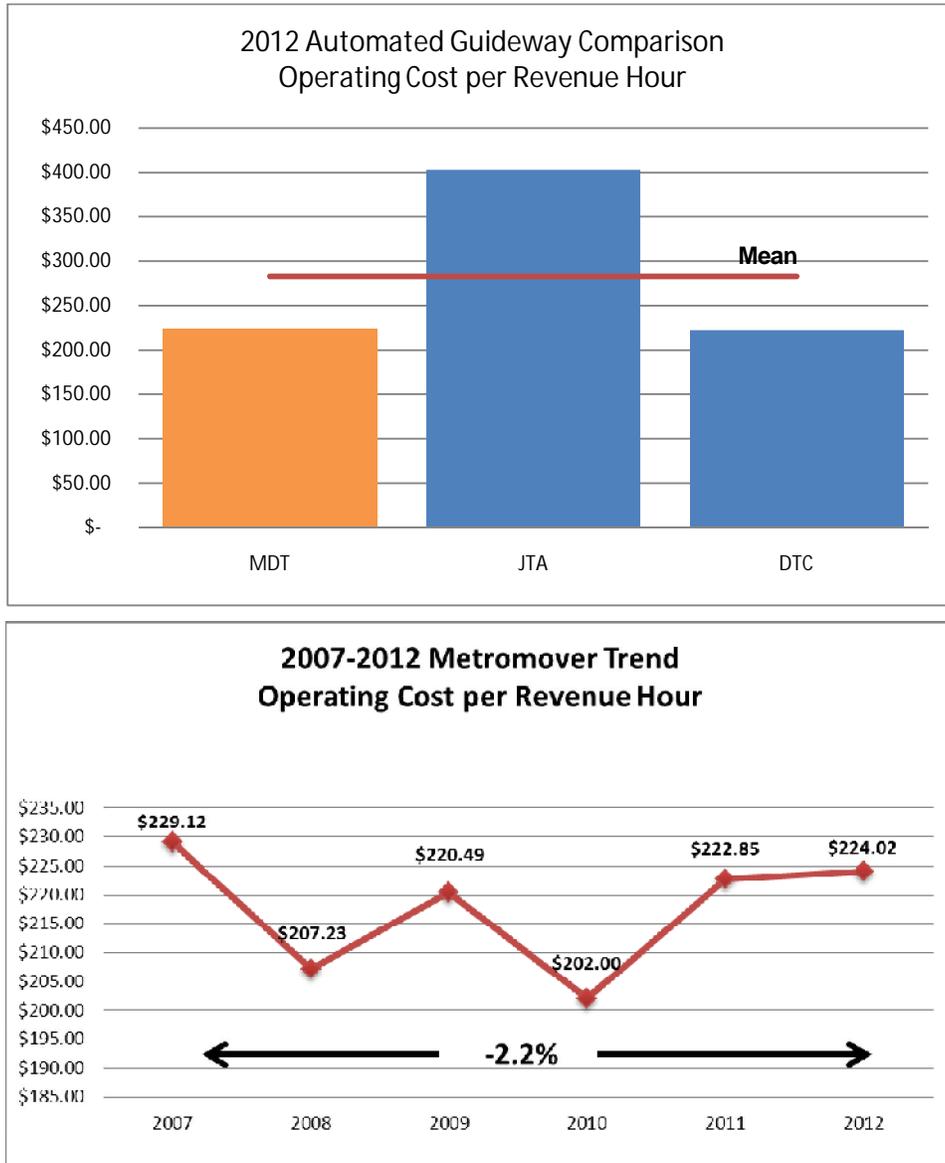
Figure 4-42: Automated Guideway Operating Cost per Passenger Trip



Data Source: NTD (2007 – 2012)

Metromover operating cost per revenue hour oscillated from 2007 to 2012 with an overall decrease of 2.2 percent. Overall, the operating cost per revenue hour decreased over the last six years, which is an indicator of good performance.

Figure 4-43: Automated Guideway Operating Cost per Revenue Hour

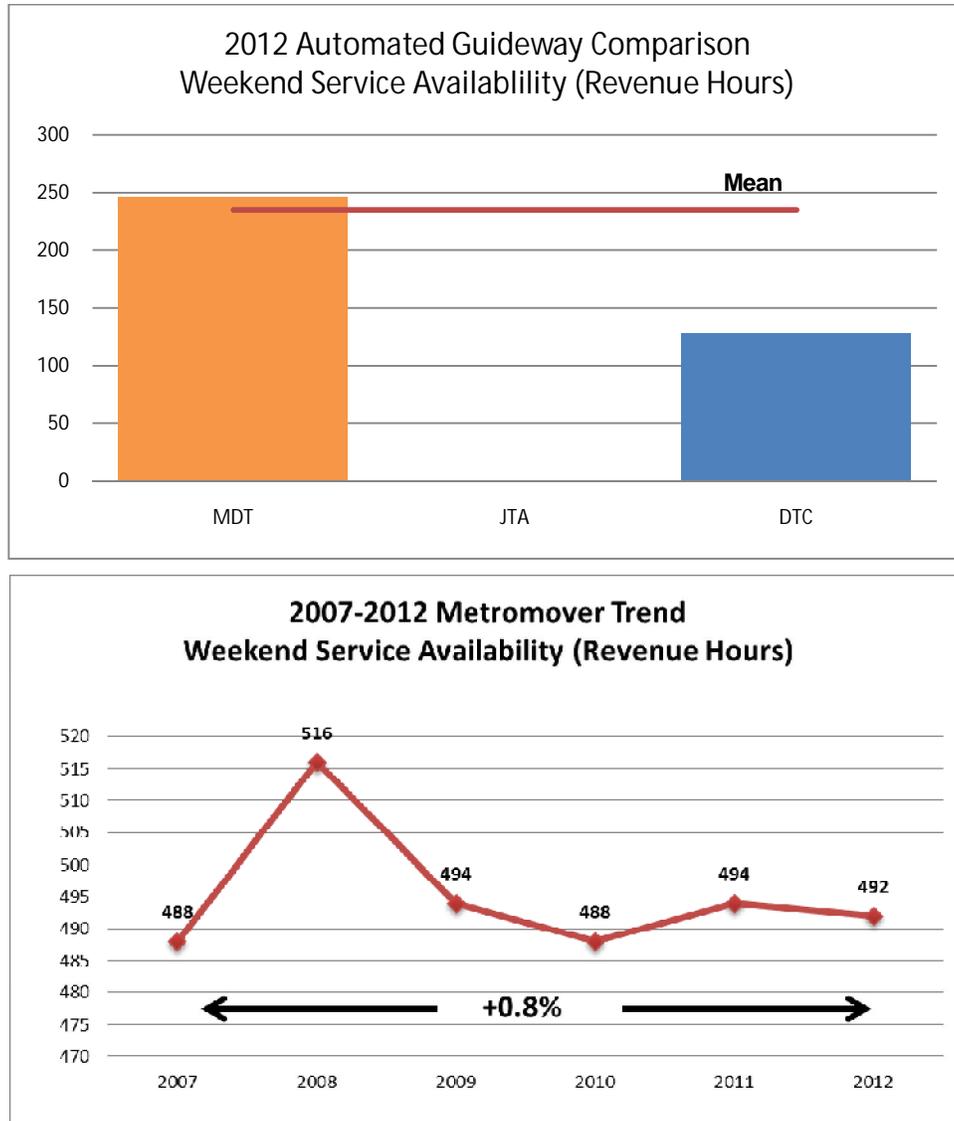


Data Source: NTD (2007 – 2012)

4.6.8 Weekend Service Availability (Revenue Hours)

Figure 4-44 shows revenue hours during a typical weekend (Saturday and Sunday) as a measure of weekend service availability. As the graphic shows, MDT provides more weekend service than both its peers. Weekend service revenue hours have remained constant except for a slight increase in 2008.

Figure 4-44: Automated Guideway Weekend Service Availability (Revenue Hours)

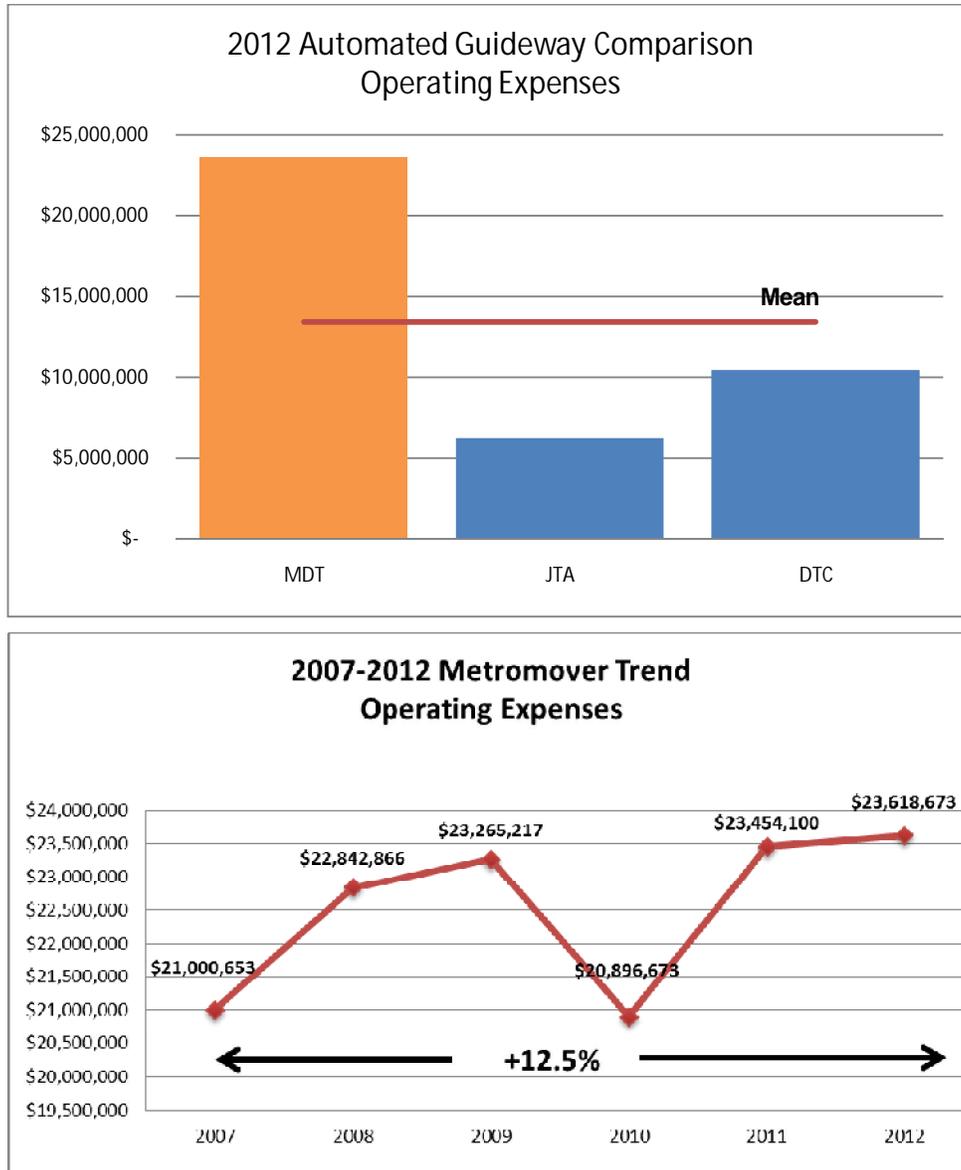


Data Source: NTD (2007 – 2012)

4.6.9 Operating Expenses

Figure 4-45 shows operating expenses for automated guideway for MDT and its selected peers. In 2012, MDT's operating expenses for its Metromover system was close to \$23.6 million. With the exception of a decline in expenses between 2009 and 2010, operating expenses have increased 12.5 percent over the six year period.

Figure 4-45: Automated Guideway Operating Expenses

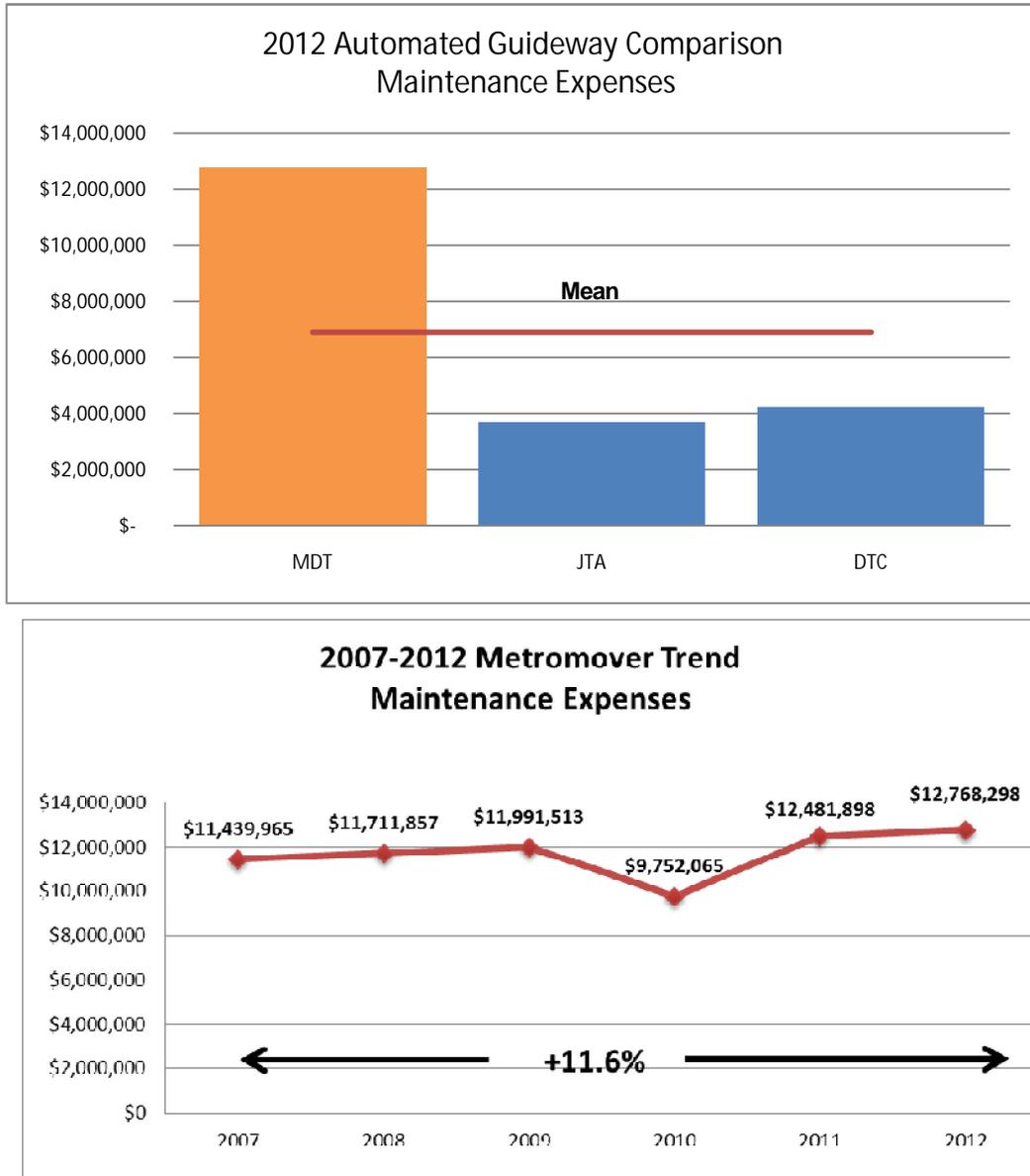


Data Source: NTD (2007 – 2012)

4.6.10 Maintenance Expenses

Figure 4-46 shows maintenance expenses⁵ for automated guideway for MDT and its selected peers. In 2012, MDT's maintenance expenses were more than twice than its selected peers. Over the last five years, Metromover maintenance expenses have increased by 11.6 percent.

Figure 4-46: Automated Guideway Maintenance Expenses



Data Source: NTD (2007 – 2012)

⁵ Maintenance expenses are a subset of total operating expenses in the data provided by NTD.

4.6.11 Farebox Revenues and Farebox Recovery Ratio

After the passage of Miami-Dade County's People's Transportation Plan, MDT's Metromover system became a free fare service in 2004. As a result, the farebox revenue and farebox recovery ratio is zero. Since MDT charges no fare for the Metromover system no trend analysis was prepared. The other two systems do collect some fares as shown in Figure 4-47.

Figure 4-47: Automated Guideway Farebox Revenues

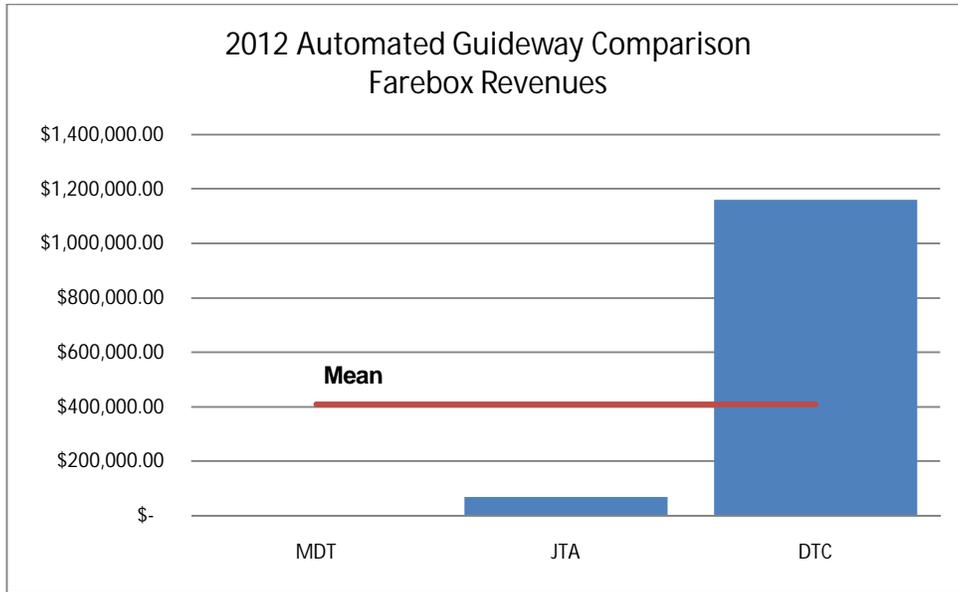
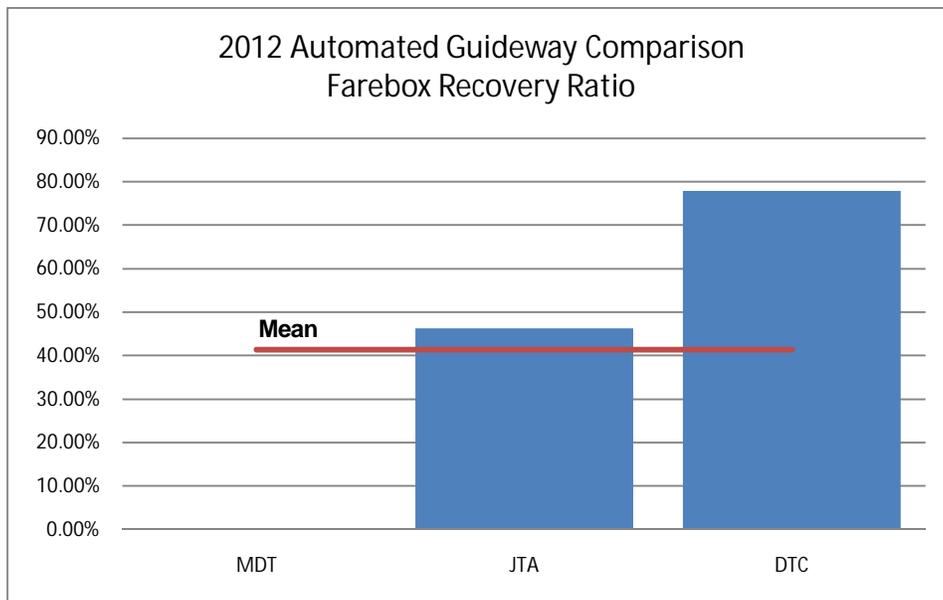


Figure 4-48: Automated Guideway Farebox Recovery Ratio



Data Source: 2012 NTD

4.7 Demand Response Peer Comparison and Trend

Table 4-8 compares statistics for MDT's Special Transportation Service (STS) to similar peer agencies that operate demand response services. Demand response service in Miami is impacted by the relatively larger percentage of elderly people in MDT's service area, many of whom are eligible to use demand response service.

The members of the peer group for demand response service include a number of cities that have relatively high percentages of older population, including Duval (JTA) and Broward (BCT) counties.



Table 4-9 presents the 2007-2012 trends in operating and service statistics for the six most recent years of MDT's demand response service.

Table 4-8: Demand Response Peer Comparison (2012)

Agency	MDT	BCT	JTA	GCRTA	MTA	SEPTA	MTA - Harris County	Peer Mean
City	Miami, FL	Plantation, FL	Jacksonville, FL	Cleveland, OH	Baltimore, MD	Philadelphia, PA	Houston, TX	
Unlinked Passenger Trips	1,672,361	716,393	388,283	650,060	1,538,155	1,755,592	1,486,893	1,172,534
Average Age (yrs.) of Demand Response Fleet	4.63	4.19	4.11	3.78	4.80	3.61	2.66	3.97
Passenger Miles Traveled	21,469,157	7,343,794	4,931,003	4,572,942	13,977,166	11,417,480	17,543,859	11,607,914
Average Passenger Trip Length	12.84	10.25	12.70	7.03	9.09	6.50	11.80	10.03
Vehicle Revenue Hours	993,257	392,807	209,713	322,827	1,029,312	996,466	878,875	689,037
Vehicle Revenue Miles	13,585,622	6,510,257	4,216,775	4,821,868	12,188,135	9,953,901	14,809,663	9,440,889
Passenger Trips per Revenue Hour	1.68	1.82	1.85	2.01	1.49	1.76	1.69	1.76
Passenger Trips per Revenue Mile	0.12	0.11	0.09	0.13	0.13	0.18	0.10	0.12
Operating Cost per Passenger Trip	\$30.99	\$24.84	\$36.15	\$47.08	\$42.30	\$28.08	\$25.33	\$33.54
Operating Cost per Revenue Hour	\$52.19	\$45.30	\$66.94	\$94.79	\$63.21	\$49.47	\$42.85	\$59.25
Weekend Service Availability (Revenue Hrs)	2,784	813	558	1,117	2,784	2,272	2,636	1,852
Operating Expenses	\$51,834,558	\$17,795,177	\$14,037,399	\$30,601,678	\$65,067,779	\$49,300,038	\$37,663,281	\$38,042,844
Maintenance Expenses	\$7,150,165	\$1,796,804	\$3,330,440	\$6,102,409	\$7,396,420	\$10,118,006	\$3,028,075	\$5,560,331
Farebox Revenue	\$4,278,474	\$1,314,569	\$628,760	\$678,121	\$2,344,629	\$6,045,191	\$1,265,876	\$2,365,089
Farebox Recovery Ratio	8.25%	7.39%	4.48%	2.22%	3.60%	12.26%	3.36%	5.94%

Data Source: 2012 NTD

Table 4-9: MDT Special Transportation Service 2007-2012 Trend

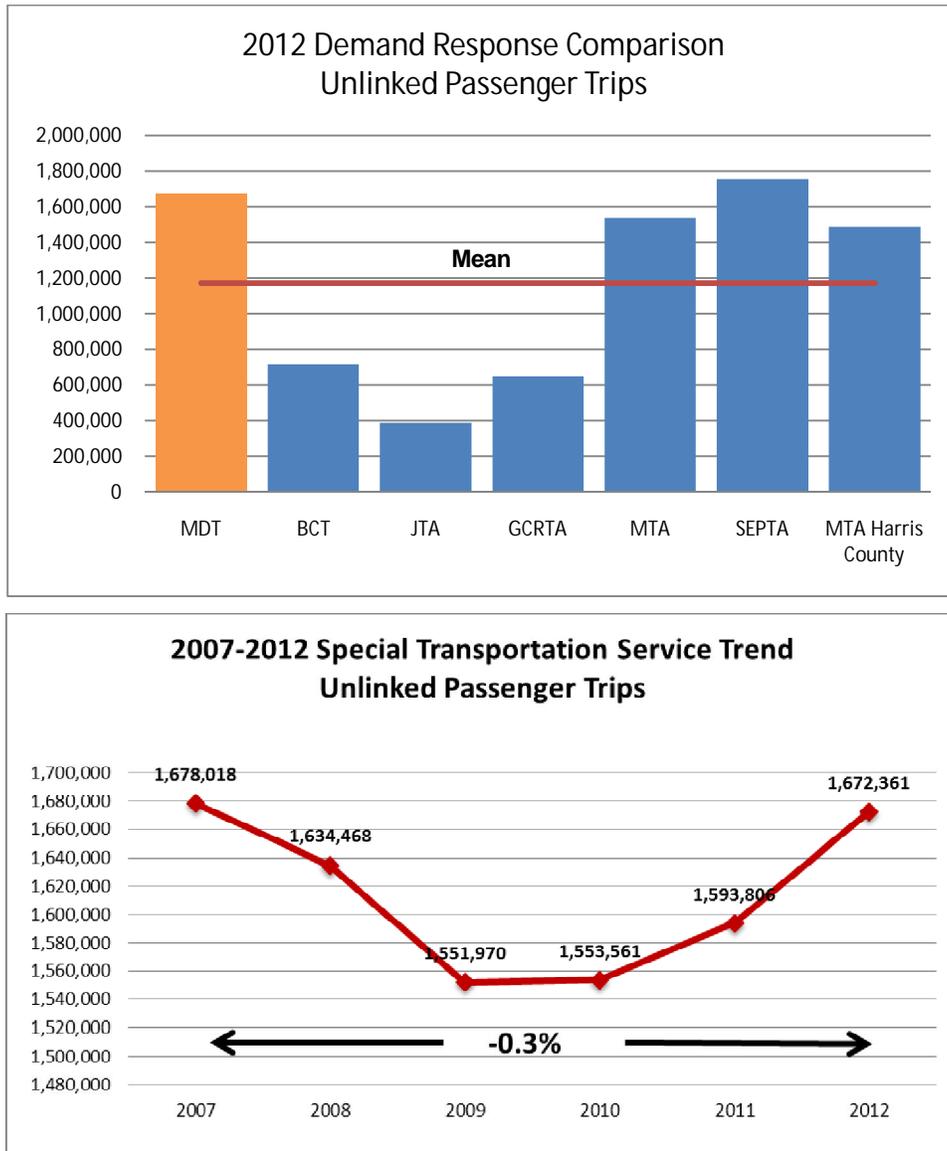
Performance Measures	2007	2008	2009	2010	2011	2012
Unlinked Passenger Trips	1,678,018	1,634,468	1,551,970	1,553,561	1,593,806	1,672,361
Average Age (yrs.) of Demand Response Fleet	2.4	2.8	3.3	3.7	4.2	4.6
Passenger Miles Traveled	24,268,233	22,224,772	16,778,379	21,144,648	20,326,328	21,469,157
Average Passenger Trip Length	14.46	13.60	10.81	13.61	12.75	12.84
Vehicle Revenue Hours	950,790	944,519	949,173	973,028	978,336	993,257
Vehicle Revenue Miles	13,948,718	13,605,381	13,084,419	13,260,276	13,232,539	13,585,622
Passenger Trips Per Revenue Hour	1.76	1.73	1.64	1.60	1.63	1.68
Passenger Trips Per Revenue Mile	0.1203	0.1201	0.1186	0.1172	0.1204	0.1231
Operating Cost Per Passenger Trip	\$25.15	\$27.43	\$28.69	\$28.97	\$29.45	\$30.99
Operating Cost Per Revenue Hour	\$44.38	\$47.46	\$46.91	\$46.25	\$47.98	\$52.19
Weekend Service Availability (Rev. Hrs)	2,505	2,474	2,618	2,566	2,653	2,784
Operating Expenses	\$42,198,872	\$44,829,765	\$44,522,040	\$45,000,089	\$46,939,524	51,834,558
Maintenance Expenses	\$6,024,556	\$6,334,171	\$6,250,499	\$5,617,528	\$5,646,231	7,150,165
Farebox Revenue	\$4,238,800	\$4,303,798	\$4,004,568	\$3,990,359	\$4,075,348	4,278,474
Farebox Recovery Ratio	10.04%	9.60%	8.99%	8.87%	8.68%	8.25%

Data Source: NTD (2007 – 2012)

4.7.1 Unlinked Passenger Trips

Figure 4-49 compares unlinked passenger trips for MDT and its demand response peers. In 2012, MDT's demand response service handled more than 1.6 million passenger trips, more than all of the peer agencies, except SEPTA. Demand response services unlinked passenger trips decreased significantly from 2007 to 2009 then increased from 2010 to 2012. Overall, the number of passenger trips decreased by 0.3 percent from 2007 to 2012.

Figure 4-49: Demand Response Unlinked Passenger Trips

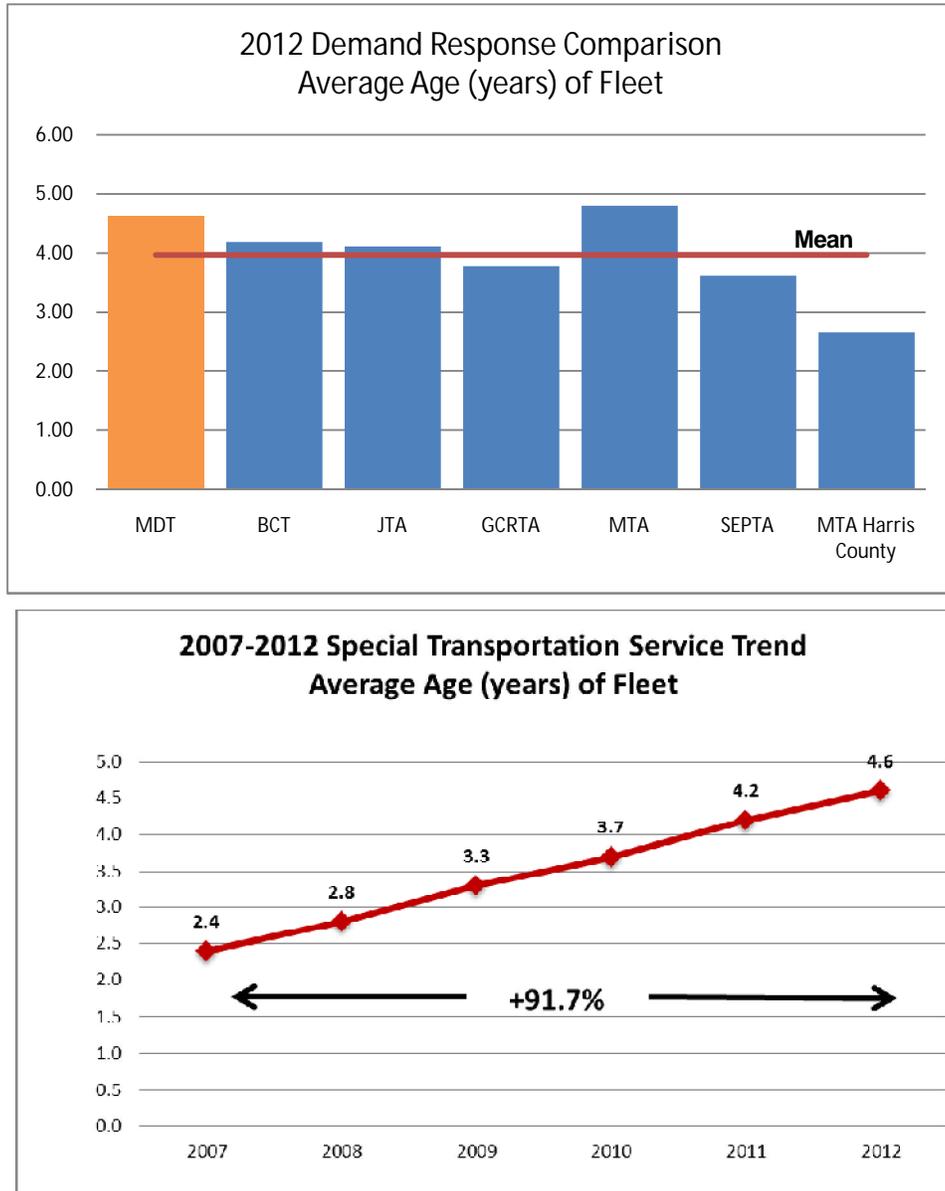


Data Source: NTD (2007 – 2012)

4.7.2 Average Age (years) of Demand Response Fleet

Figure 4-50 shows the average age of the peer agencies' demand response fleet. MDT's fleet is older than most of its peers, with the exception of MTA. The average age of MDT's demand service response fleet has been increasing since 2007 with a 2012 average age of nearly five years.

Figure 4-50: Average Age (years) of Demand Response Fleet



Data Source: NTD (2007 – 2012)

4.7.3 Passenger Miles Traveled and Average Passenger Trip Length

Figure 4-51 shows passenger miles traveled for MDT and the peer agencies, with MDT's 21.4 million passenger miles traveled being well above its peers. Demand response services passenger miles traveled experienced a large decrease from 2007 to 2009, increased from 2009 to 2010, and then stayed relatively level from 2010 to 2012. Overall, there was an 11.5 percent decrease in passenger miles traveled from 2007 to 2012.

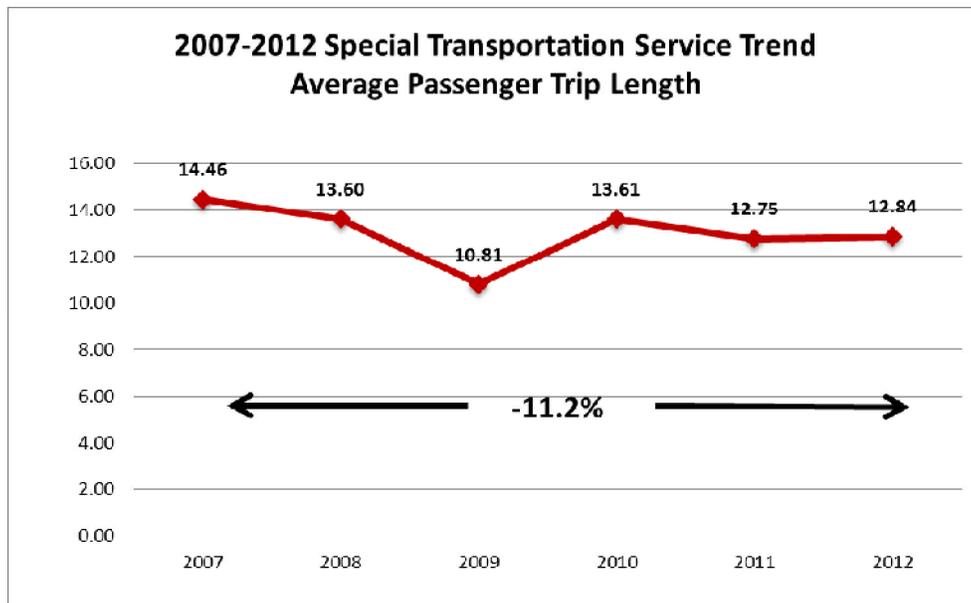
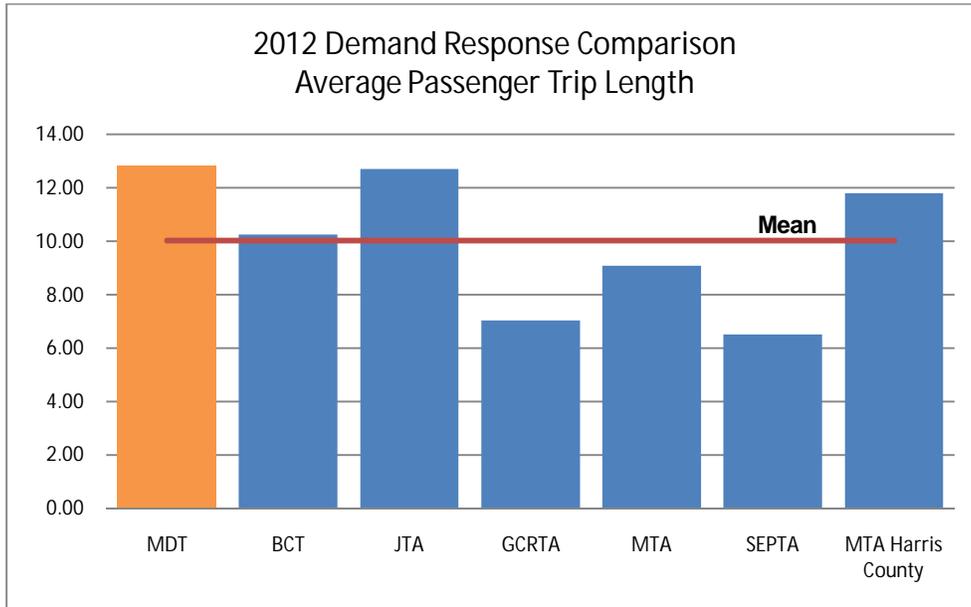
Figure 4-51: Demand Response Passenger Miles Traveled



Data Source: NTD (2007 – 2012)

As seen in Figure 4-52, MDT's high demand response average trip length is similar to JTA's and MTA – Harris County's. MDT's average trip length has been approximately 13 miles for four of the six years.

Figure 4-52: Demand Response Average Passenger Trip Length

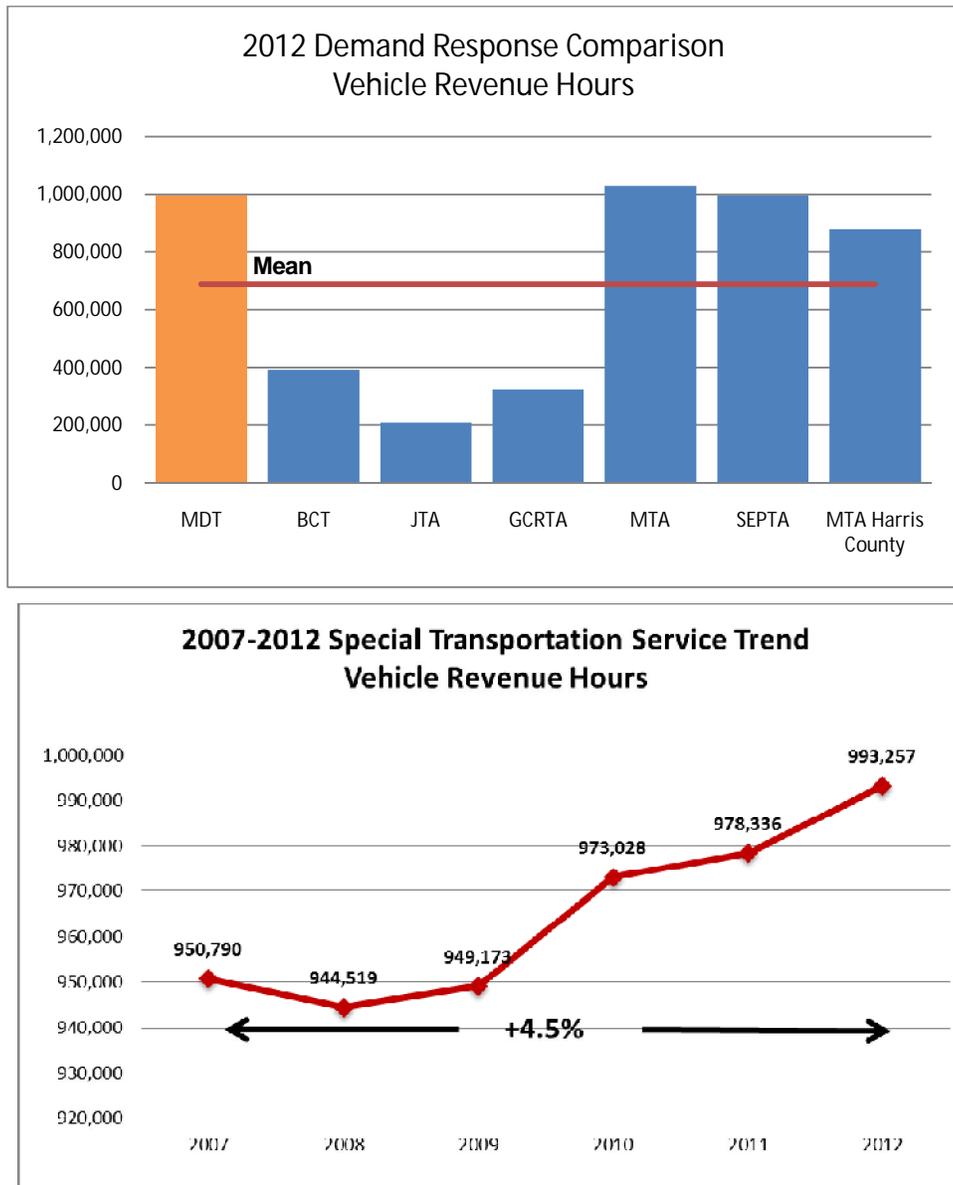


Data Source: NTD (2007 – 2012)

4.7.4 Vehicle Revenue Hours and Vehicle Revenue Miles

Figure 4-53 and Figure 4-54 show demand response revenue hours and demand response revenue miles, respectively. MDT operates demand response revenue hours and revenue miles well above the peer mean, only behind MTA and SEPTA for revenue hours and MTA Harris County for revenue miles. Demand response services vehicle revenue hours decreased slightly from 2007 to 2008, and increased from 2008 to 2012. Overall, they increased 4.5 percent from 2007 to 2012.

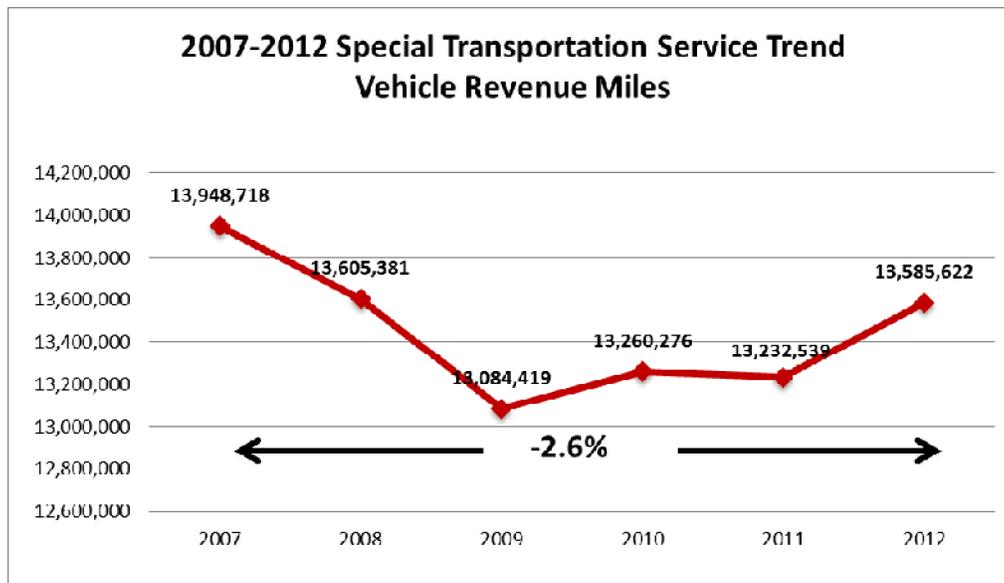
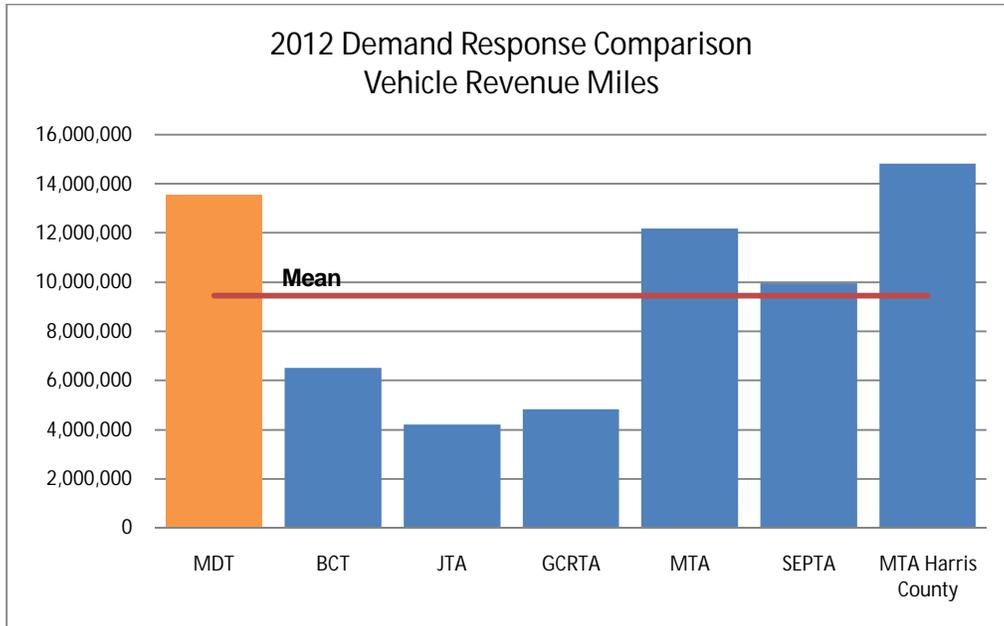
Figure 4-53: Demand Response Vehicle Revenue Hours



Data Source: NTD (2007 – 2012)

Vehicle revenue miles decreased from 2007 to 2009 and increased from 2009 to 2012. Overall, vehicle revenue miles decreased 2.6 percent from 2007 to 2012.

Figure 4-54: Demand Response Vehicle Revenue Miles



Data Source: NTD (2007 – 2012)

4.7.5 Passenger Trips per Revenue Hour and Revenue Mile

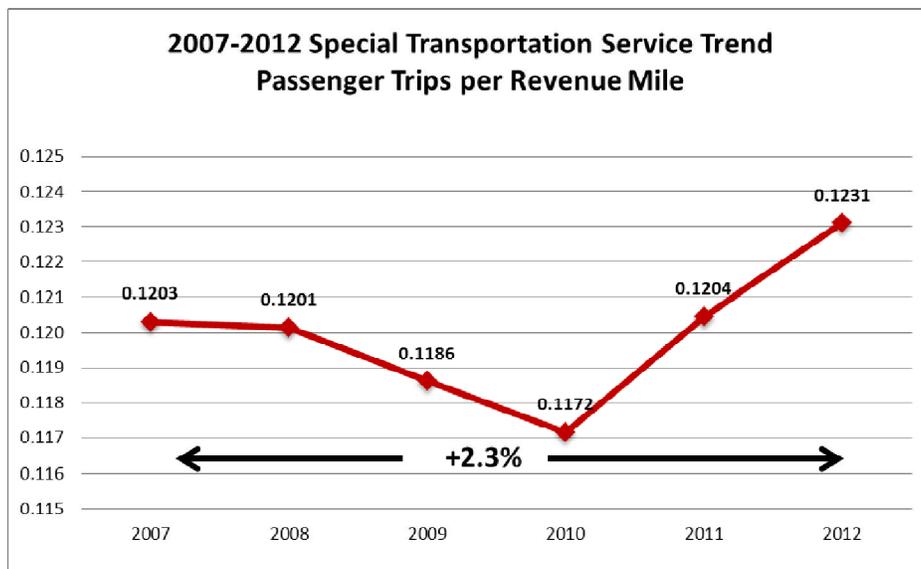
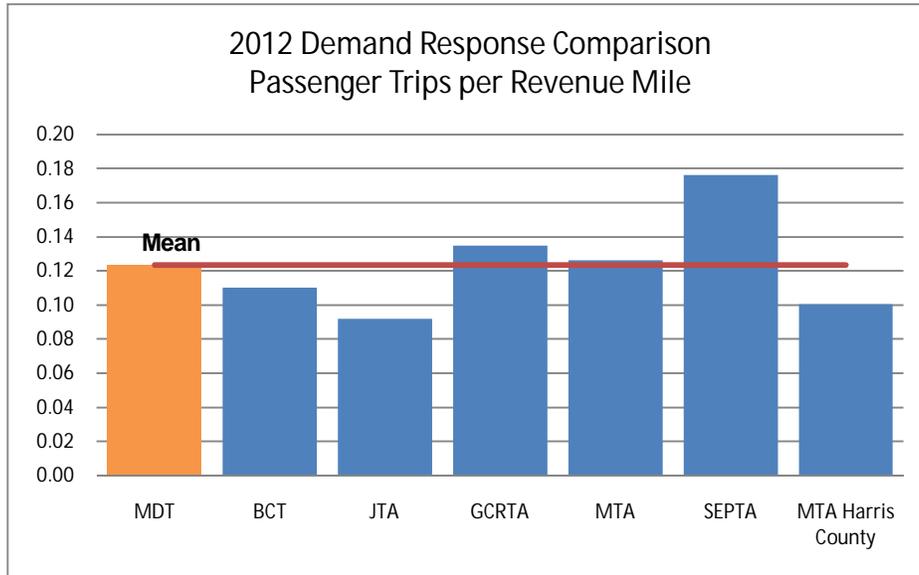
MDT's demand response service is around the peer mean in terms of productivity measured by passenger trips per revenue hour and passenger trips per revenue mile, as seen in Figure 4-55 and Figure 4-56. Demand response services passenger trips per revenue hour and per revenue mile both decreased from 2007 to 2010 and increased from 2010 to 2012. Overall, passenger trips per revenue hour decreased 4.6 percent from 2007 to 2012 and passenger trips per revenue mile increased by 2.3 percent from 2007 to 2012.

Figure 4-55: Demand Response Passenger Trips per Revenue Hour



Data Source: NTD (2007 – 2012)

Figure 4-56: Demand Response Passenger Trips per Revenue Mile



Data Source: NTD (2007 – 2012)

4.7.6 Operating Cost per Passenger Trip and Revenue Hour

Figure 4-57 and Figure 4-58 show demand response operating cost per passenger trip and operating cost per revenue hour, respectively. The figures indicate that MDT's demand response service is operated just below the peer mean for both measures. Demand response services operating cost per passenger trip increased steadily from 2007 to 2012 at an overall rate of 23.2 percent.

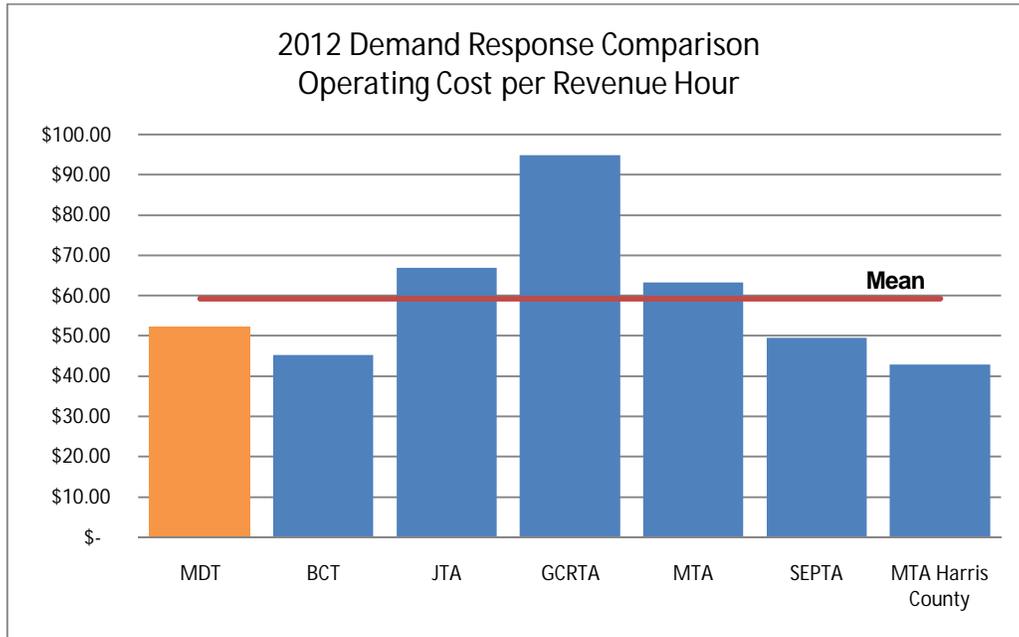
Figure 4-57: Demand Response Operating Cost per Passenger Trip



Data Source: NTD (2007 – 2012)

Demand response services operating cost per revenue hour increased significantly from 2007 to 2008, decreased slightly from 2008 to 2010, and then increased from 2010 to 2012. Overall, the operating cost per revenue hour increased 17.6 percent from 2007 to 2012.

Figure 4-58: Demand Response Operating Cost per Revenue Hour

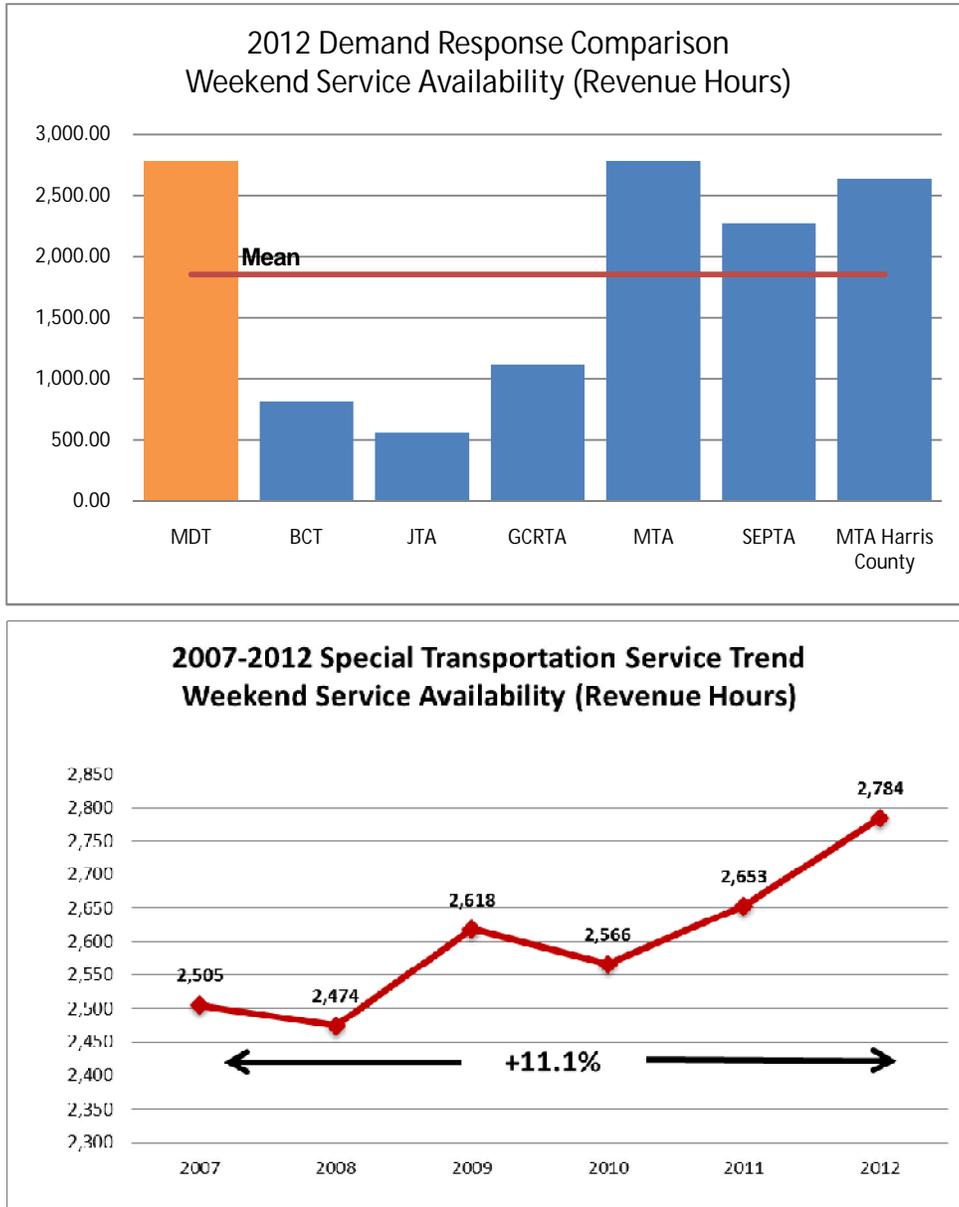


Data Source: NTD (2007 – 2012)

4.7.7 Weekend Service Availability (Revenue Hours)

Figure 4-59 shows revenue hours during a typical weekend (Saturday and Sunday) as a measure of weekend service availability. As the graphic shows, in 2012 MDT provided more weekend service than most of its peers, except MTA. Weekend service availability for MDT’s demand response services has increased by 11.1 percent during the trend period with steady increases within the last two years.

Figure 4-59: Demand Response Weekend Service Availability (Revenue Hours)

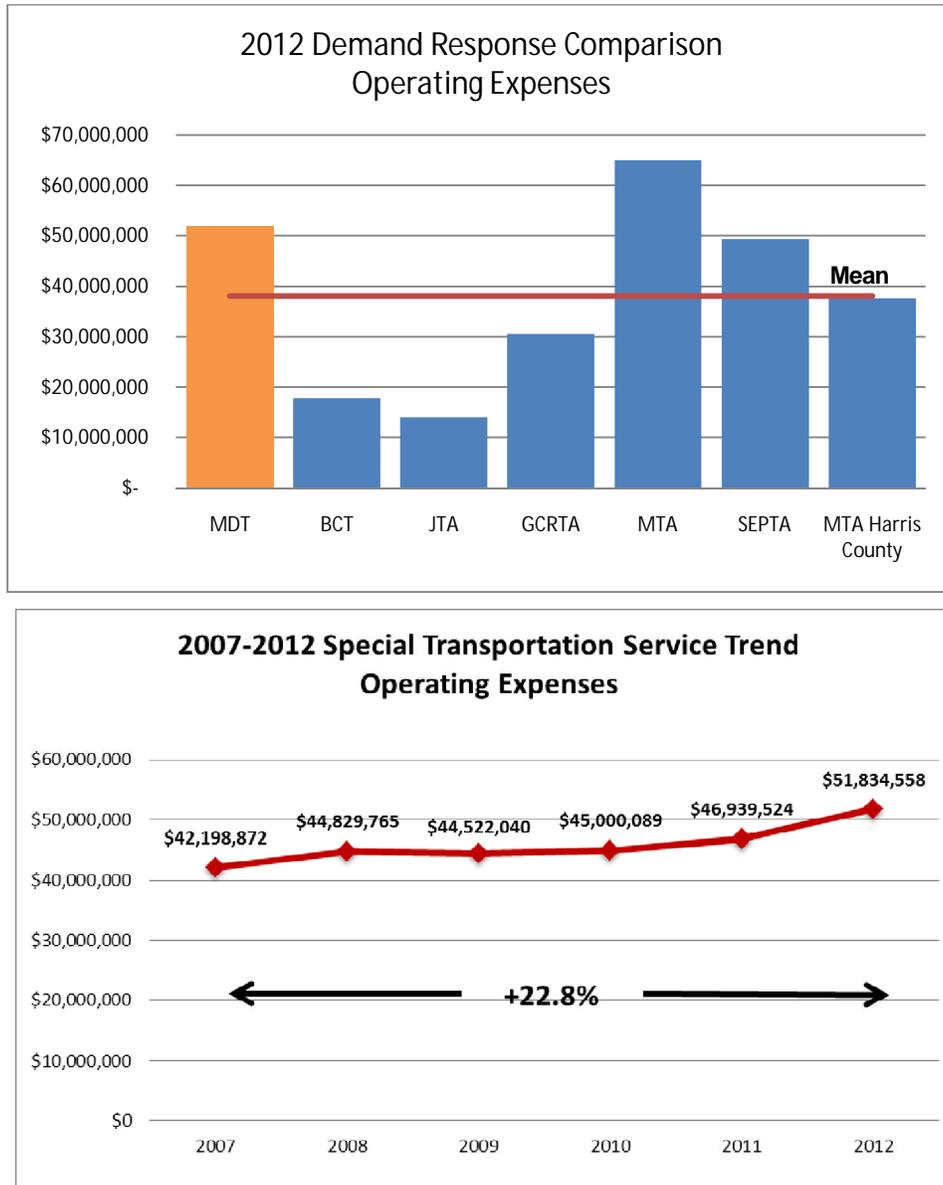


Data Source: 2012 NTD

4.7.8 Operating Expenses

As seen in Figure 4-60, MDT's operating expenses are higher than the peer mean, with only MTA operating the service at a higher cost. MDT's operating expenses for demand response have been increasing since 2007.

Figure 4-60: Demand Response Operating Expenses

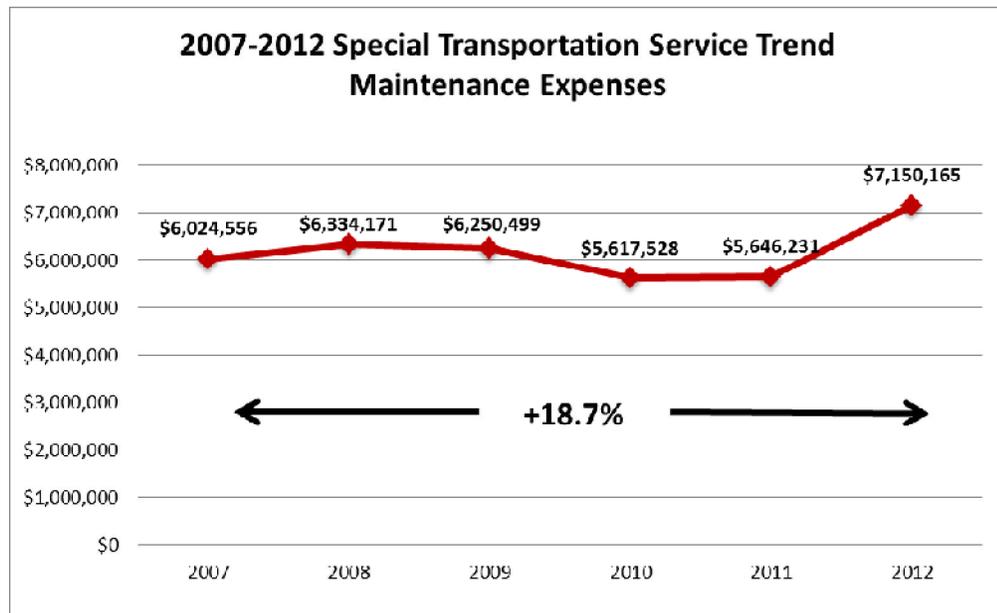
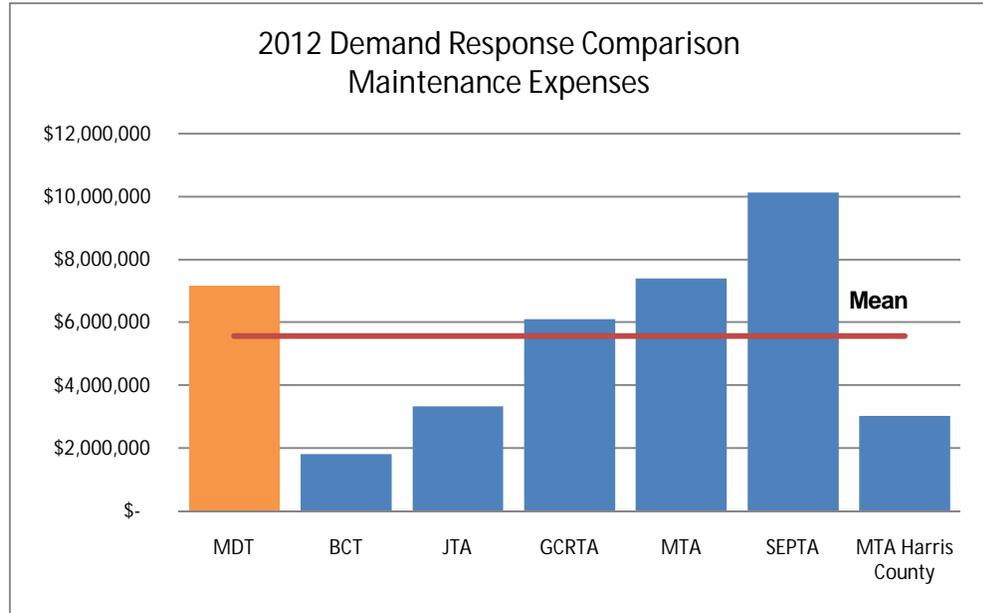


Data Source: NTD (2007 – 2012)

4.7.9 Maintenance Expenses

Figure 4-61 shows maintenance expenses⁶ rank third among its peers. Between 2007 and 2010 STS maintenance expenses declined slightly but have increase since 2011 which may be attributed to the aging vehicle fleet.

Figure 4-61: Demand Response Maintenance Expenses



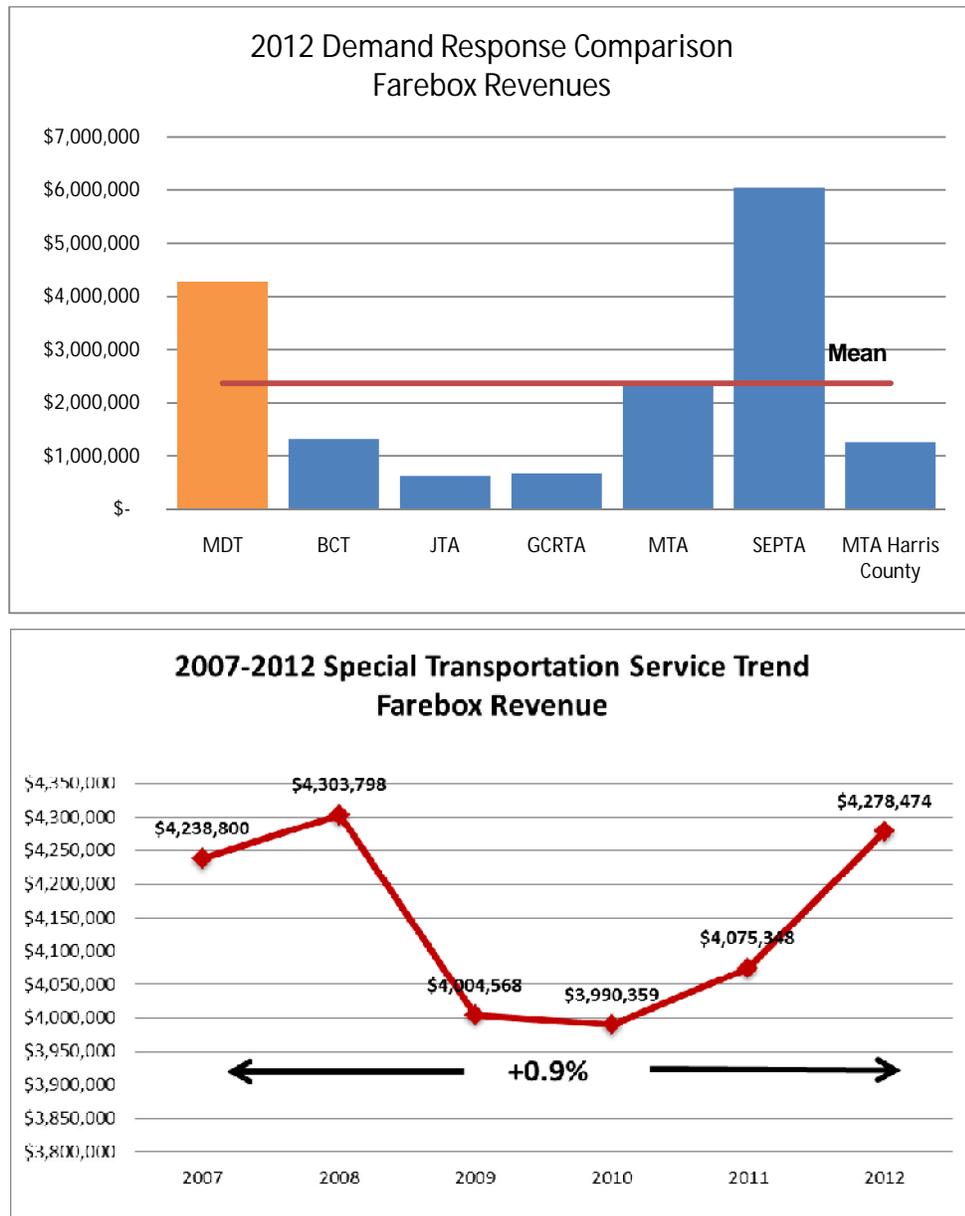
Data Source: NTD (2007 – 2012)

⁶ Maintenance expenses are a subset of total operating expenses in the data provided by NTD.

4.7.10 Farebox Revenues

Figure 4-62 compares farebox revenue for MDT of about \$4.3 million ranks second among the selected peers. Since 2007, farebox revenues have increased by about 0.9 percent.

Figure 4-62: Demand Response Farebox Revenues

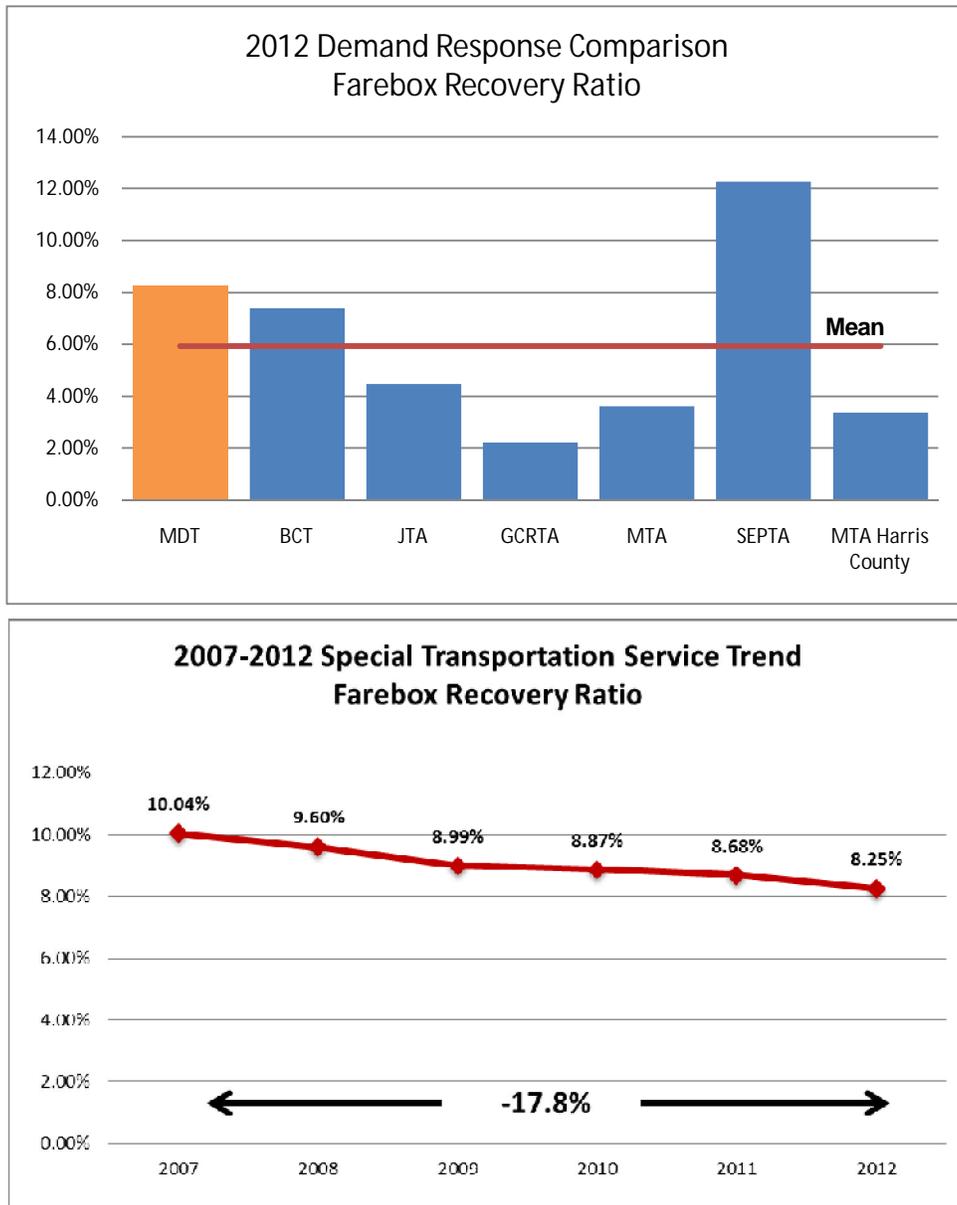


Data Source: NTD (2007 – 2012)

4.7.11 Farebox Recovery Ratio

Figure 4-63 compares the farebox recovery ratio for MDT and its selected peers. MDT's service performs higher than the peer mean at just over eight percent, behind only SEPTA's twelve percent. Demand response services experienced a steady decrease in farebox recovery from 2007 to 2012 at an overall rate of 17.8 percent.

Figure 4-63: Demand Response Farebox Recovery Ratio



Data Source: NTD (2007 – 2012)

This page is intentionally left blank