2016 Sub-Regional Peer Review

PERFORMANCE MEASURES

Regional Transportation Authority

March 2018
Prepared by the Division of
Planning & Market Development

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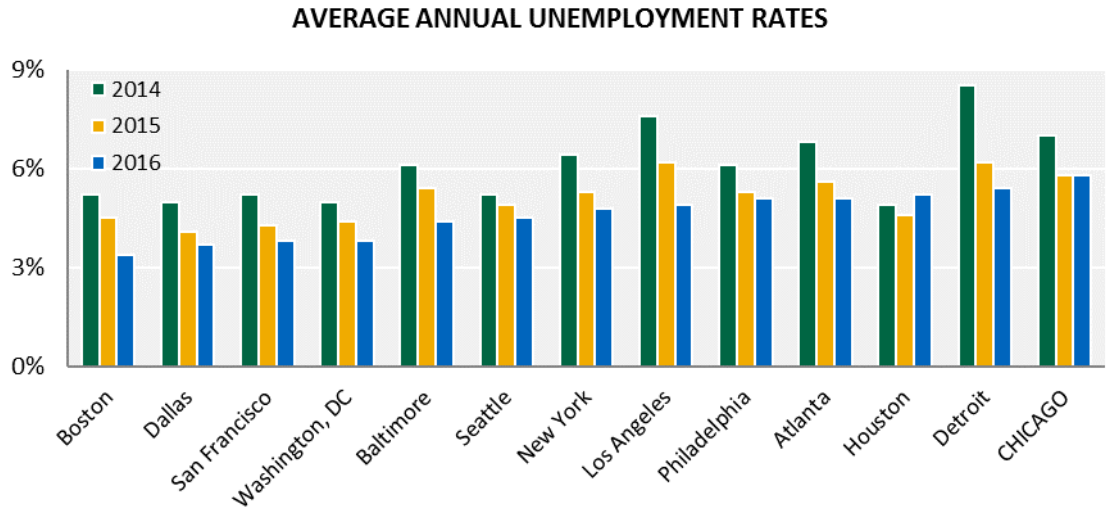
EXECUTIVE SUMMARY

The Sub-Regional Peer Review has been developed by the RTA as part of its oversight function to support the evaluation and management of the region's public transportation system. Examination of each service mode and comparison of its performance to the performance of a set of meaningful peers allows for the identification of potential improvement areas. The selection of appropriate peers was carefully performed to allow for the closest possible match of operating characteristics. For each service mode operated in the RTA region – urban bus, heavy rail, commuter rail, suburban bus, vanpool, and ADA paratransit – a peer group of five agencies has been chosen. This report is based on published data from the National Transit Database (NTD) to ensure as much comparability between agencies in definition and collection of data elements as possible. It covers data reported for 2016, the most current year available, which was released in October 2017.

The primary selection criteria for the peer agencies included: size of metropolitan area served, urban versus suburban character of the service area, size of the transit system, and operating characteristics such as speed, trip length, and whether bus services were operated in conjunction with rapid transit service. While the urban/suburban split of service is fairly clear in the Chicago region, in other areas the split is not so well-defined. In selecting appropriate peer groups, properties that were primarily urban were considered for comparison to CTA while those that were primarily suburban were considered for comparison to Pace. The performance of the Pace ADA paratransit service, which is reported as a separate mode to the NTD, is shown separately as well as in combination with dial-a-ride service, another demand-response service.

Although much care was used in selecting meaningful peers, no two transit agencies are perfectly comparable. Each agency has unique circumstances and a unique operating environment, and those differences should be kept in mind when making comparisons. Since there are no federal or industry standards for transit performance metrics, peer comparisons provide the best way to benchmark performance and identify best practices; further research can then be conducted to gain a better understanding of the factors contributing to observed levels of performance. Each modal section of the report contains additional information about service initiatives of the peer agencies -- such as fare increases, new services, and capital projects -- which helps to provide context for the performance metrics. The goal of the RTA performance measurement program is to point toward areas of potential improvement within the constraints and resources of our region.

Overall, the Chicago transit agencies performed well in 2016 in comparison to their peers. The Chicago operators are consistently among the largest of their peers, not surprising given the area's geographic breadth and large population. As in prior years' reports, special strengths were noted across modes in the service efficiency and effectiveness category.



For eleven of the peer regions, the economy continued to improve in 2016, as shown in the chart above, which shows peak unemployment rates in 2014 for each region under review in this report. In 2015, each region saw improvements in unemployment rates, which continued for most throughout 2016. Chicago was the only region to see no change in 2016; Houston was the only to see an increase in unemployment in 2016, the first year its rate approached the national average in over a decade, as decreased oil prices continued to affect all aspects of its economy.

CTA Bus continued to perform well in comparison to its peer group, performing at or above the peer average for eight of eleven measures. For the eighth consecutive year, CTA ranked first for having the lowest operating cost per vehicle revenue hour; CTA was also strong in the other two measures of efficiency and effectiveness, ranking first for operating cost per passenger trip. A significant decrease was noted for the reliability measure miles between major mechanical failures; CTA moved down three rank positions (from third to last place). In the solvency area, CTA maintained rank positions for fare recovery ratio (ranking first for the seventh year), fare revenue per passenger mile, for which it ranked second for the eighth consecutive year, and third place for fare revenue per passenger trip. As capital fund expenditures decreased by over 26% in 2016, CTA bus dropped one rank position in the peer rankings, from fourth to fifth place, for capital expenditures per passenger trip.

CTA Rail continued to show strong performance for service efficiency and effectiveness, maintaining its first-place ranking for operating cost per vehicle revenue hour (for the eighth consecutive year) and operating cost per passenger mile (for the sixth consecutive year). CTA also continued to perform well in the service maintenance and capital investment metrics, maintaining top ranking for average fleet age for the third year and retaining its top-ranked position for miles between major mechanical failures for the sixth consecutive year. CTA maintained its fifth-place rankings for fare revenue per passenger mile and fare recovery ratio, and third-place position for fare revenue per passenger trip. Capital fund expenditures per passenger trip decreased by 8% in 2016, yet CTA retained its third-place ranking for this solvency measure.

Metra Commuter Rail has consistently performed better than the peer average for all service coverage and service efficiency and effectiveness measures since peer reporting began in 2009. In 2016, Metra maintained first place rank for passenger trips per vehicle revenue hour for the third consecutive year and second for passenger trips per vehicle revenue mile for the seventh consecutive year. Metra ranked second for operating cost per passenger trip for the sixth consecutive year and improved one rank position for two measures of efficiency and effectiveness: to second place for operating cost per vehicle revenue hour and to first place for operating cost per passenger mile. With its ongoing efforts to modernize its fleet, Metra maintained its rankings for the two maintenance and capital investment measures, average age and miles between major mechanical failures. A fare increase implemented in February 2016 resulted in improvements for two solvency measures related to fares, although Metra maintained its rank positions for fare revenue per passenger trip and fare revenue per passenger mile, while dropping one rank position for recovery ratio. Metra lost one rank position for capital expenditures per passenger trip in 2016 despite an increase of 5.4% as four peer agencies saw expenditure increases of up to 60% over the prior year.

Pace Suburban Bus had its third consecutive year of ridership declines but maintained its rank positions for both measures of service coverage; at fifth place, rankings for these measures are hampered by Pace's large geographic service area and low population density. Pace performed better than the peer average for each measure of the service efficiency and effectiveness area, maintaining the lowest operating cost per vehicle revenue hour for the eighth consecutive year and second-place rank for operating cost per passenger mile for the fifth consecutive year. Pace's performance for maintenance and capital investment was mixed; the average age of its buses was roughly 6% below the peer average and Pace gained one rank position for that measure, but was below the peer average for the reliability indicator even as its miles between major mechanical failures saw improvement compared to 2015. Pace remained below the peer average for each measure relating to fares: fare revenue per passenger trip, fare revenue per passenger mile, and fare recovery ratio, as fare revenue decreased nearly 2%. Capital expenditures remained strong and Pace maintained its second place rank for capital expenditures per passenger trip as its expenditures were more than double its peer average.

Pace Vanpool had its third consecutive year of ridership declines yet performed better than or equal to the peer average for four measures, with its strongest showing in the service efficiency and effectiveness measures. Pace had the only vanpool program to see improvement for the two measures of service coverage in 2016, and moved up one rank position each for passenger trips per vehicle revenue hour and passenger trips per vehicle revenue mile. Downward movement was noted for two measures of efficiency and effectiveness, operating cost per vehicle revenue hour and operating cost per passenger trip, although Pace's performance for both measures remained favorable to the peer average. Pace came in last position for the two measures of maintenance and capital investment, despite having placed 21 new vehicles into service, and reporting fewer mechanical failures. With a 19% decrease in fare revenue in 2016, Pace moved down one rank position for fare revenue per passenger trip but maintained its rankings for fare revenue per passenger mile and fare recovery ratio.

Pace ADA Paratransit is unique in having established a separate reporting structure to NTD and is presented within this report as a separate entity as well as in combination with Pace's demand-response service, dial-a-ride. Pace ADA paratransit service continued its favorable performance, equaling or exceeding the performance of its peers in nine of ten metrics. In 2016, Pace had its first year-over-year decrease for vehicle revenue miles and vehicle revenue hours since 2010, causing a drop in rank position for the latter but still equaling the peer average. In the efficiency and effectiveness area, Pace saw improvement of one rank position for two measures: operating cost per vehicle revenue hour and operating cost per passenger mile, one of two agencies to do so. Pace maintained its top position among peer ADA paratransit service providers for having the youngest fleet and improved one rank position for the reliability indicator, miles between major mechanical failures, with the largest increase among its peers at 40% over 2015 results. Pace maintained its rank positions for each of the three measures of solvency and equaled or outperformed its peers, as it has in prior years.

NOTES/METHODOLOGY

1. This analysis is based on 2016 published data from the National Transit Database (NTD), the most currently available data released in October 2017. The data submission by transit agencies is a requirement of receiving federal funding and thus follows guidelines and procedures established by the Federal Transit Administration.

2. The recovery ratio used in this report follows the NTD definition, which is the proportion of operating costs that are recovered by fare revenues paid by passengers. The NTD recovery ratio differs from the RTA recovery ratio, which takes into account certain adjustments as enumerated in the RTA Act, such as the exclusion of various costs, the treatment of depreciation, and the inclusion of in-kind services. The RTA recovery ratio also includes system-generated revenue other than fares in its formula calculation.

PEER AGENCIES

MODE	PEER GROUP
CTA Bus	**METRO**: Los Angeles County Metropolitan Transportation Authority, Los Angeles **MBTA**: Massachusetts Bay Transportation Authority, Boston **NYCT**: Metropolitan Transportation Authority – New York City Transit, New York **SEPTA**: Southeastern Pennsylvania Transportation Authority, Philadelphia **WMATA**: Washington Metropolitan Area Transit Authority, Washington, DC
CTA Rail	**MARTA**: Metropolitan Atlanta Rapid Transit Authority, Atlanta **MBTA**: Massachusetts Bay Transportation Authority, Boston **NYCT**: Metropolitan Transportation Authority – New York City Transit, New York **SEPTA**: Southeastern Pennsylvania Transportation Authority, Philadelphia **WMATA**: Washington Metropolitan Area Transit Authority, Washington, DC
Metra Commuter Rail	**LIRR**: Metropolitan Transportation Authority-Long Island Rail Road, New York City metropolitan area/Long Island **MBTA**: Massachusetts Bay Transportation Authority, Boston **MNCR**: Metropolitan Transportation Authority-Metro-North Commuter Railroad, New York City metropolitan area/Connecticut **NJT**: New Jersey Transit, New York City metropolitan area/New Jersey **SEPTA**: Southeastern Pennsylvania Transportation Authority, Philadelphia
Pace Suburban Bus	**ACT**: Alameda-Contra Costa Transit, Oakland, and East Bay communities **NICE**: Nassau Inter-County Express, New York **OCTA**: Orange County Transportation Authority, Los Angeles area **SAM**: San Mateo County Transit District, San Francisco Bay area **SMART**: Suburban Mobility Authority for Regional Transportation, Detroit area
Pace Vanpool	**DART**: Dallas Area Rapid Transit, Dallas **KING CO**: King County Metro Transit, Seattle area **METRO**: Los Angeles Metropolitan Transportation Authority, Los Angeles **OCTA**: Orange County Transportation Authority, Los Angeles area **HOUSTON**: Metropolitan Transit Authority of Harris County, Houston area
Pace ADA Paratransit	**MBTA**: Massachusetts Bay Transportation Authority, Boston **MTA**: Maryland Transit Administration, Baltimore **NYCT**: Metropolitan Transportation Authority – New York City Transit, New York **ACCESS**: Access Services, Los Angeles **WMATA**: Washington Metropolitan Area Transit Authority, Washington, DC

DEFINITIONS

Average Age of Fleet: the mean of the difference between year of manufacture and year under consideration for all vehicles in the active fleet.

Average Vehicle Passenger Capacity: the mean number of passengers that can be carried per revenue vehicle, computed by adding seating capacity plus standing capacity and dividing that number by the number of active vehicles in the fleet. For the commuter rail mode, this calculation excludes standing passenger capacity to conform to industry standards and the expected provision of one seat per passenger.

Average Speed: the miles that vehicles travel while in revenue service divided by the hours that vehicles travel while in revenue service.

Average Trip Length: the average distance ridden for an unlinked passenger trip.

Capital Funds Expended: the expenses related to the purchase of capital assets; it does not include capital funds transferred to cover operating expenses.

Capital Funds Expended per Passenger Trip: expenses related to the purchase of capital assets divided by the total number of unlinked passenger trips provided.

Directional Route Miles: the mileage in each direction over which public transportation vehicles travel while in revenue service. Directional route miles (DRM) are:

- A measure of the route path over a facility or roadway, not the service carried on the facility; e.g., number of routes, vehicles, or vehicle revenue miles.
- Computed with regard to direction of service, but without regard to the number of traffic lanes or rail tracks existing in the right-of-way (ROW). Directional route miles (DRM) do not include staging or storage areas at the beginning or end of a route.

Fare Recovery Ratio: the recovery ratio used in this report follows the NTD definition, which is the proportion of operating costs that are covered by fare revenue paid by passengers. The NTD recovery ratio differs from the RTA recovery ratio, which takes into account other system-generated revenue and adjustments as enumerated in the RTA Act.

Fare Revenue: all income received directly from passengers, either paid in cash or through pre-paid tickets, passes, etc.

Fare Revenue per Passenger Mile: all income received from passengers divided by the total number of miles traveled by passengers.

Fare Revenue per Passenger Trip: all income received from passengers divided by the total number of unlinked passenger trips provided.

Miles between Major Mechanical Failures: the average number of miles that vehicles travel while in service between failures of some mechanical element or a safety concern that prevents the vehicle from completing a scheduled trip or from starting the next scheduled trip.

Operating Cost: the expenses associated with the operation of the transit agency.

Operating Cost Components: the allocation of costs among specific categories of expenses:

- General administration: all costs associated with the general administration of the transit agency
- Vehicle maintenance: all costs associated with revenue and non-revenue service vehicle maintenance
- Non-vehicle maintenance: all costs associated with facility maintenance
- Vehicle operations: all costs associated with vehicle operations

Operating Cost per Passenger Mile: total operating cost divided by the total number of miles traveled by passengers.

Operating Cost per Passenger Trip: total operating cost divided by the total number of unlinked passenger trips taken on public transportation vehicles.

Operating Cost per Vehicle Revenue Hour: total operating cost divided by the hours that vehicles travel while in revenue service.

Passenger Miles: cumulative sum of the distances ridden by each passenger: average trip length multiplied by total passenger trips.

Passenger Trips: unlinked passenger trips reported as the number of passengers who board public transportation vehicles, counted each time they board a vehicle used to travel from their origin to their destination.

Passenger Trips per Vehicle Revenue Hour: total number of unlinked passenger trips divided by the total number of hours of transit service provided.

Passenger Trips per Vehicle Revenue Mile: total number of unlinked passenger trips divided by the miles that vehicles travel while in revenue service.

Population: the population of the area served by the transit agency as reported to NTD by the agency.

Population Density: the service area population divided by the service area square miles.

Revenue Components of Trip Cost: the cost of a trip viewed as the percentage and actual dollar amounts covered by fare and non-fare revenue (system-generated revenue and other subsidies).

Service Area: A measure of access to transit service in terms of population served and area coverage (square miles). The reporting transit agency determines the service area boundaries and population for most transit services using the definitions contained in the Americans with Disabilities Act of 1990 (ADA), i.e. a corridor surrounding the routes ¾ of a mile on either side, or for rail, a series of circles of radius ¾ mile centered on each station.

Vehicle Revenue Hours: hours that vehicles travel while in revenue service.

Vehicle Revenue Miles: miles that vehicles travel while in revenue service, including layover/ recovery time, but excluding deadhead time.

Vehicles Operated in Maximum Service: the revenue vehicle count during the peak season of the year, on the week and day that maximum service is provided; excludes atypical days or one-time special events.

URBAN BUS

The peers selected for urban bus are those that serve the nation's largest urbanized areas with the most extensive, well-developed transit systems. These cities – Boston, Los Angeles, New York, Philadelphia, and Washington, DC – rank within the top ten in the country for metropolitan area population and the number of transit trips taken. They each also have both urban rail and bus services, which provide coordinated service throughout the metropolitan area. New York City Transit is the most analogous to CTA bus in that it has a service area largely defined by city boundaries. The bus systems serving the other cities also serve surrounding suburban areas, but are predominantly urban systems.

CTA performed better than the peer average for seven of eleven measures and equaled the peer average for one measure. With a 5.6% drop in ridership, CTA dropped to fourth place for passenger trips per vehicle hour and sixth-place ranking for passenger trips per vehicle revenue mile. CTA again performed well in the efficiency and effectiveness measures, maintaining top rankings for operating cost per vehicle revenue hour and operating cost per passenger trip, but moving down one rank position for operating cost per passenger mile. Although CTA maintained its position as having the second-youngest fleet, it dropped three positions for the reliability indicator miles between major mechanical failures. CTA continued its strong performance in the solvency area, maintaining the top ranking for fare recovery ratio and second place for fare revenue per passenger mile. Decreased capital fund expenditures and lower ridership caused a loss of one rank position for CTA in 2016, to fifth place.

Peer Comparison

Service Area	Performance Measure	Performs better than peer average	
		2015	2016
Coverage	Passenger Trips per Vehicle Revenue Hour	EQUAL	NO
	Passenger Trips per Vehicle Revenue Mile	EQUAL	EQUAL
Efficiency and Effectiveness	Operating Cost per Vehicle Revenue Hour	YES	YES
	Operating Cost per Passenger Trip	YES	YES
	Operating Cost per Passenger Mile	YES	YES
Maintenance and Capital Investment	Average Age	YES	YES
	Miles between Major Mechanical Failures	NO	NO
Solvency	Fare Revenue per Passenger Trip	YES	YES
	Fare Revenue per Passenger Mile	YES	YES
	Fare Recovery Ratio	YES	YES
	Capital Funds Expended per Passenger Trip	NO	NO

Peer Modal Characteristics

In comparison to their peers, New York and Chicago have the smallest and most densely-populated operating environments. CTA ranks third, behind NYCT and Los Angeles Metro, for miles and hours of service provided, passenger trips, passenger miles traveled, and operating cost.

Urban Bus Overview

Modal Characteristics	CTA Chicago	MBTA Boston	METRO Los Angeles	NYCT New York	SEPTA Philadelphia	WMATA Washington, DC
Service Area Population	3,272,295	3,109,308	8,626,817	8,550,405	3,816,641	3,719,567
Service Area (square miles)	309	3,244	1,513	321	839	950
Population Density	10,590	958	5,702	26,637	4,549	3,915
Vehicle Revenue Miles	52,304,804	24,159,324	76,160,750	99,066,891	39,793,477	39,363,678
Vehicle Revenue Hours	5,758,937	2,349,388	7,066,506	13,314,818	3,966,008	3,878,257
Passenger Trips	259,058,440	125,148,855	320,869,835	785,144,309	182,484,615	127,687,553
Passenger Miles	633,607,162	319,642,702	1,337,681,394	1,766,860,130	587,747,642	399,016,612
Operating Cost	$801,281,245	$432,933,393	$1,101,126,598	$3,122,825,121	$628,216,161	$590,647,746
Fare Revenue	$280,077,543	$98,428,455	$256,677,646	$966,344,062	$174,306,296	$141,053,043
Capital Funds Expended	$128,621,273	$77,589,772	$266,042,354	$174,585,816	$115,904,956	$238,067,582
Average Speed (miles per hour)	9.1	10.3	10.8	7.4	10.0	10.1
Average Trip Length (miles)	2.4	2.6	4.2	2.3	3.2	3.1
Average Vehicle Passenger Capacity	84	95	55	78	84	67
Average Vehicle Age (years)	6.9	11.6	7.7	6.7	8.8	7.6
Vehicles Operated in Maximum Service	1,572	818	1,935	3,886	1,174	1,301

Modal Characteristics Highlights

Vehicle Revenue Miles: Each agency saw an increase in vehicle revenue miles in 2016, although for CTA, NYCT, and SEPTA, most of that is attributable to the additional weekday due to leap year. Since 2012, CTA has decreased its vehicle revenue miles by a net 0.2%, versus a peer average decrease of 0.7%.

Passenger Trips: Of the four agencies to see ridership declines in 2016, CTA's 5.6% drop was the second steepest. Over a five-year period, CTA has seen the steepest decrease of the six peer agencies, with a 17.6% drop compared to 2012. In comparison, other five-year ridership trends were: LA Metro -10.9%, WMATA -6.7%, SEPTA -3.5%, and NYCT -2.5%. MBTA was the only bus peer to see a positive five-year trend, up 7.5%, which it attributes to an influx of jobs and new residential development.

Operating Cost: CTA's operating cost increase was held to 0.9% in 2016 compared to a peer average increase of 2.7%. CTA's five-year operating cost increase of 4.3% is lower than the peer average of 14.0%.

Fare Revenue: None of CTA's urban bus peers implemented a fare increase for the fiscal year being reported, and five agencies saw a decrease in fare revenue compared to 2015. CTA bus fare revenue decreased 4.1% in 2016, and remained 3.0% lower compared to 2012. Over a five-year period, MBTA and NYCT have seen fare revenue increase 19.5% and 11.0%, respectively, owing to regular fare increases; both agencies increased fares in 2013 and 2015.

Capital Funds Expended: CTA capital fund expenditure per passenger trip decreased by 32.5% in 2016; four of five peers also decreased their capital funds expenditures, ranging from 5% (WMATA) to 56.6% (NYCT). Capital fund expenditures fluctuate greatly from year to year, generally corresponding to large capital outlays for new rolling stock or construction projects. In 2016, CTA expended over $96 million on new bus rolling stock. MBTA was the only agency to keep its capital expenditure equal to 2015, also spending the majority on new vehicles.

Average Speed: Four agencies, including CTA, saw decreased average bus speeds in 2016. At 9.1 miles per hour, CTA has the second-lowest average speed among its peers and was 2.0% slower compared to 2012.

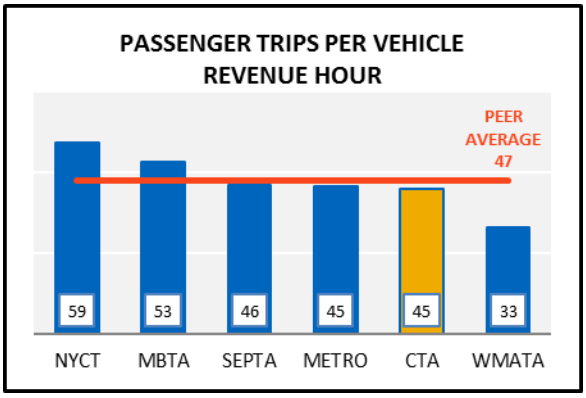
Average Trip Length: CTA bus riders travel an average 2.4 miles per trip, compared to the peer average of 3.1 miles. CTA saw a 0.2% increase in its average trip length in 2016; over the past five years, CTA passenger average trip lengths have increased 6.1% compared to a peer average increase of 1.8%.

Average Vehicle Passenger Capacity: CTA operates the second-largest vehicles with an average passenger capacity of 84. Average passenger capacities vary from a low of 55 at Metro to 95 at MBTA.

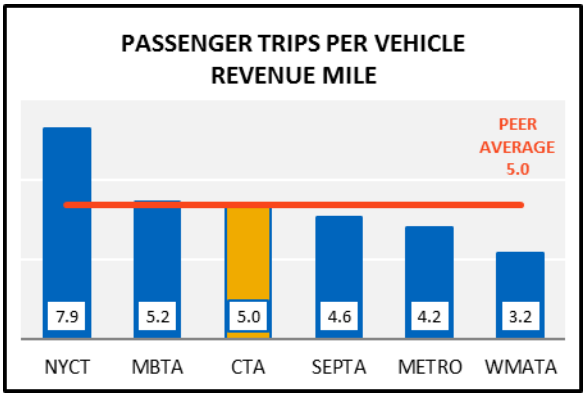
URBAN BUS

Service Coverage

CTA bus saw a 0.5% increase in vehicle revenue hours and a 0.1% increase in vehicle revenue miles in 2016; a 5.6% drop in ridership resulted in unfavorable results for the two performance measures shown below, passenger trips per vehicle revenue hour and passenger trips per vehicle revenue mile. With the second-steepest ridership decline in 2016, CTA bus lost one rank position for passenger trips per vehicle revenue hour, although it maintained its ranking for passenger trips per vehicle revenue mile.



NYCT and SEPTA had ridership increases in 2016. Of the four agencies reporting ridership decreases, CTA saw the second-steepest drop in ridership at -5.6%, while its vehicle revenue hours increased by 0.5%. Passenger trips per vehicle revenue hour decreased 6.0% in 2016, resulting in a loss of one rank position for CTA to fifth. CTA's performance of 45.0 passenger trips per vehicle revenue hour does not meet the peer average.

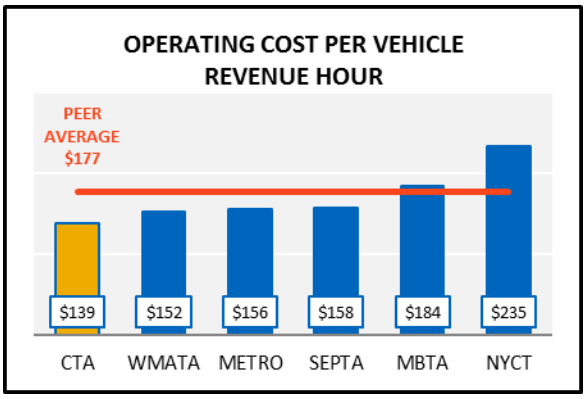


CTA was one of four agencies to see a decrease for this measure in 2016; CTA performance was down 5.6% compared to 2015, yet CTA maintained its rank position and equaled the peer average. SEPTA and METRO swapped positions as Los Angeles experienced the largest ridership loss in 2016 at -6.4%.

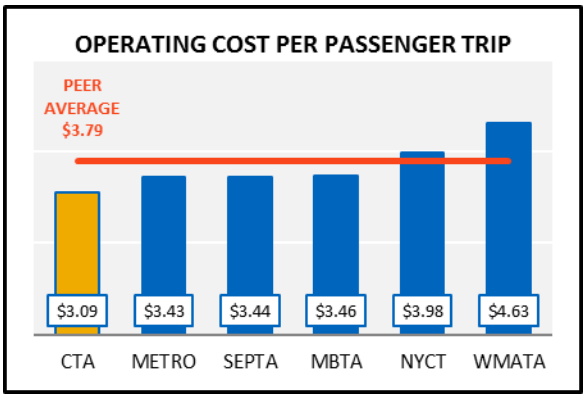
URBAN BUS

Service Efficiency and Effectiveness

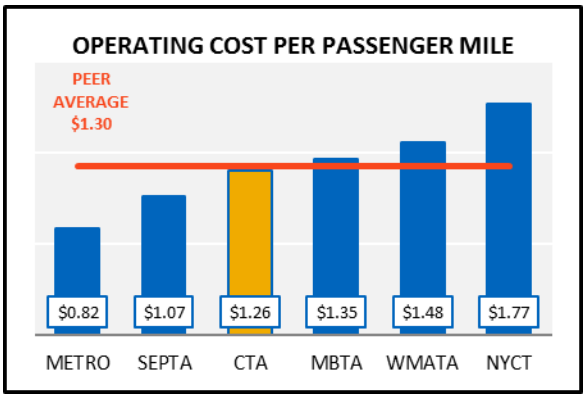
For the eighth consecutive year, CTA bus outperformed its peers for the service efficiency indicator operating cost per vehicle revenue hour, and maintained first-place ranking for operating cost per passenger trip. Although CTA dropped one rank position in 2016 for operating cost per passenger mile, it still outperformed the peer average.



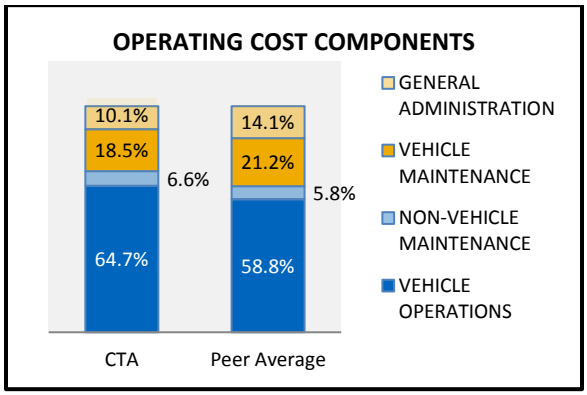
A 0.5% increase in vehicle revenue hours, combined with a 0.9% operating cost increase, resulted in a 0.4% increase for this measure for CTA. WMATA was the only agency to see a decrease for this measure, down 4.7%, related to implementation of strict cost containment measures.



CTA reclaimed top ranking for operating cost per passenger trip in 2015 and maintained that spot in 2016, due to having the lowest increase in operating cost among its peers.



CTA dropped one rank position for this measure as SEPTA reported a 17% surge in passenger miles traveled.

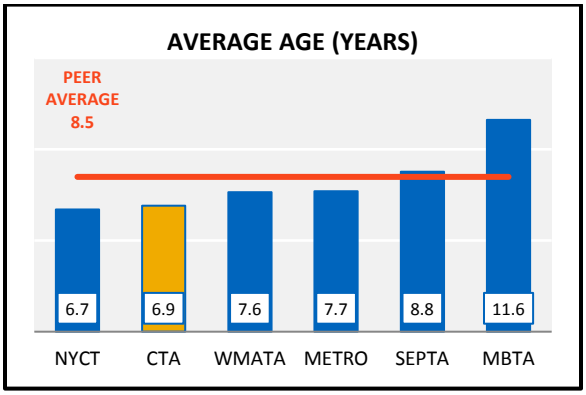


CTA bus expended 64.7% of its budget on vehicle operations, significantly more than the peer average of 58.8%, and proportionally less on general administration and vehicle maintenance compared to its peers.

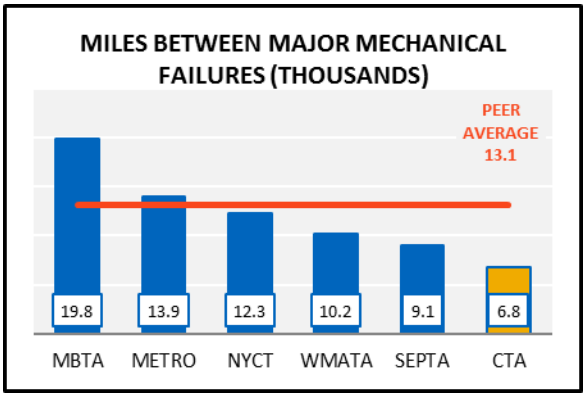
URBAN BUS

Service Maintenance and Capital Investment

CTA added 147 new buses into its active vehicle fleet in 2016 and maintained its second-rank position for average fleet age. A 48% increase in the number of reported major mechanical failures resulted in CTA dropping three rank positions to last place for the measure miles between major mechanical failures in 2016.



The average age of a CTA bus is 6.9 years. 103 of CTA's active fleet of 1,869, or 5.5%, have reached their expected minimum useful life of 12 years. CTA has ranked either first or second for this metric since peer reporting began in 2009.

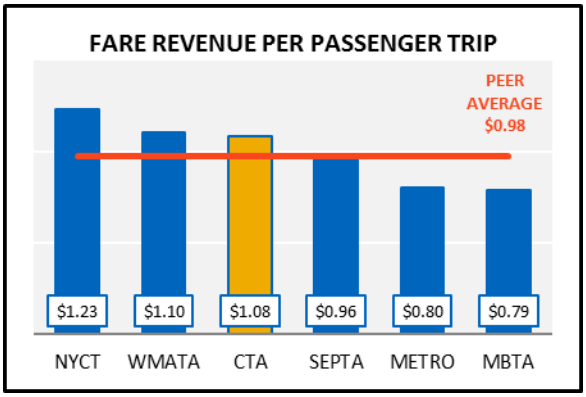


Each of CTA's peers experienced improvement for this measure in 2016, traveling an average 20% more miles between failures. CTA, however, saw a 32.6% decrease in miles between failures and subsequently dropped three rank positions to sixth for this metric.

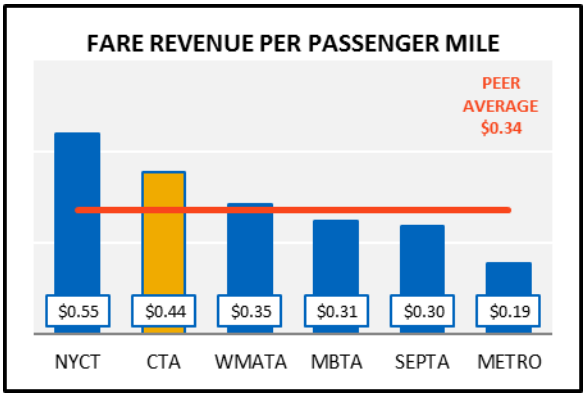
URBAN BUS

Service Level Solvency

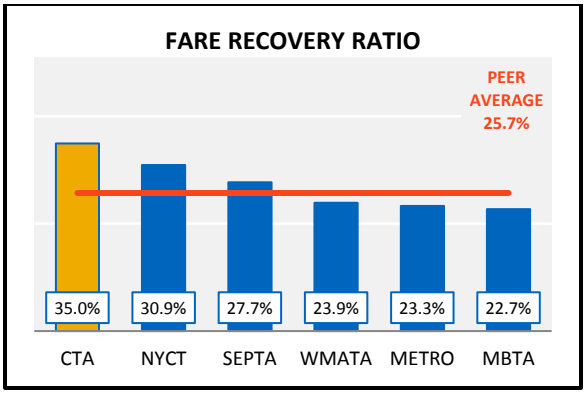
CTA has consistently performed well compared to its peers in the service level solvency area. CTA maintained its rank positions for the three fare revenue metrics but dropped one rank position for capital expenditures per passenger trip.



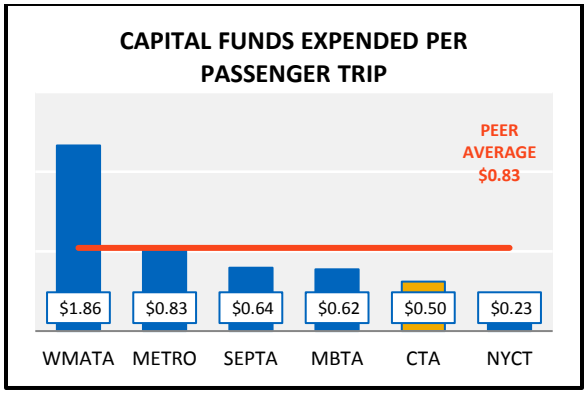
CTA maintained its third place position for this measure, also known as average fare, although its fare revenue decreased 4.1% in 2016. Four agencies, including CTA, saw improvement for this measure as ridership losses outpaced fare revenue losses.



CTA has held the second-rank position for this measure since peer reporting began in 2009. CTA saw a 1.3% gain for this measure in 2016 and received $0.10, or 30%, more than the peer average for this metric.



For the seventh consecutive year, CTA achieved first-place ranking for its fare recovery ratio, achieved by recovering 35% of its operating expenses through rider-paid fares and exceeding the peer average by 9.3 percentage points.



CTA bus ranked as high as second place for this measure, in 2014, resulting from an aggressive capital improvement plan. In 2016, five agencies, including CTA, expended less on capital projects compared to 2015, while MBTA spent the same. WMATA outspent peers for this measure for seven of the past eight years.

HEAVY RAIL

The peers selected for CTA heavy rail were chosen from the largest rapid transit systems in the country. The number of cities with urban rail systems is much smaller than those with bus systems, limiting the group of potential peers. NYCT, MBTA, and SEPTA are all natural peers as older rail systems serving the urban center of large metropolitan areas. MARTA and WMATA, although relatively newer heavy rail systems, were chosen as peers due to their large sizes and mostly urban settings.

CTA rail operated better than its peers for five of the eleven measures examined. As it has in the past, CTA performed most strongly in the service efficiency and effectiveness area, maintaining top rankings for operating cost per vehicle revenue hour for the eighth consecutive year and operating cost per passenger mile for the sixth consecutive year. The CTA rail fleet maintained its position for having the youngest fleet. For the sixth consecutive year, CTA achieved top ranking for miles between major mechanical failures. CTA rail performed below the peer average for each solvency measure, but had no rank position changes in 2016.

Peer Comparison

Service Area	Performance Measure	Performs better than peer average	
		2015	2016
Service Coverage	Passenger Trips per Vehicle Revenue Hour	**NO**	**NO**
	Passenger Trips per Vehicle Revenue Mile	**NO**	**NO**
Service Efficiency and Effectiveness	Operating Cost per Vehicle Revenue Hour	**YES**	**YES**
	Operating Cost per Passenger Trip	**YES**	**YES**
	Operating Cost per Passenger Mile	**YES**	**YES**
Service Maintenance and Capital Investment	Average Age	**YES**	**YES**
	Miles between Major Mechanical Failures	**YES**	**YES**
Service Level Solvency	Fare Revenue per Passenger Trip	**NO**	**NO**
	Fare Revenue per Passenger Mile	**NO**	**NO**
	Fare Recovery Ratio	**NO**	**NO**
	Capital Funds Expended per Passenger Trip	**NO**	**NO**

Peer Modal Characteristics

CTA operates heavy rail in the nation's second-most densely-populated area, after New York City. CTA ranks third among its peers for directional route miles, vehicle revenue miles, passenger trips, passenger miles, operating cost, fare revenue, and capital funds expended.

Heavy Rail Overview

Modal Characteristics	CTA	MARTA	MBTA	NYCT	SEPTA	WMATA
	Chicago	Atlanta	Boston	New York	Philadelphia	Washington, DC
Service Area Population	3,272,295	1,559,652	3,109,308	8,550,405	3,816,641	3,719,567
Service Area (square miles)	309	573	3,244	321	839	950
Population Density	10,590	2,722	958	26,637	4,549	3,915
Directional Route Miles	208	96	76	489	75	234
Vehicle Revenue Miles	71,811,535	22,267,826	23,247,288	347,091,534	17,265,382	77,967,423
Vehicle Revenue Hours	4,004,874	838,398	1,521,944	19,040,477	932,000	3,169,674
Passenger Trips	238,645,812	71,945,326	174,517,352	2,673,282,334	101,883,835	249,173,213
Passenger Miles	1,445,244,645	477,298,793	612,346,781	11,009,026,066	452,194,921	1,475,685,198
Operating Cost	$593,105,156	$226,438,652	$353,373,437	$5,558,943,117	$197,091,759	$1,002,200,678
Fare Revenue	$301,110,125	$75,717,593	$222,241,032	$3,351,083,122	$107,112,684	$574,350,853
Capital Funds Expended	$265,604,864	$99,710,966	$154,858,435	$2,559,016,569	$109,254,839	$710,189,938
Average Speed (miles per hour)	17.9	26.6	15.3	18.2	18.5	24.6
Average Trip Length (miles)	6.1	6.6	3.5	4.1	4.4	5.9
Average Vehicle Passenger Capacity	106	96	230	136	112	192
Average Vehicle Age (years)	15.8	26.8	28.0	22.5	23.7	22.5
Vehicles Operated in Maximum Service	1,140	208	336	5,324	284	954

Modal Characteristics Highlights

Directional Route Miles: WMATA saw the only change for this measure as it added 1.9 miles that is part of the Silver Line Phase 2 project, scheduled to be completed in late 2020.

Vehicle Revenue Miles: Each peer except WMATA saw increases ranging from 0.2% to 3.6% in 2016. WMATA's vehicle revenue miles dipped 8.8% for the year as the agency shut down operations on several occasions for safety and weather-related incidents.

Passenger Trips: Following record high ridership in 2015, CTA rail ridership decreased 1.3% in 2016. CTA's five-year ridership increase of 3.2% was surpassed by gains at MBTA, up 4.5%, and NYCT, up 4.0%. MARTA and SEPTA saw slight dips in their 5-year ridership (1.1% and 0.9%, respectively), while WMATA's dropped 12.7% compared to 2012 as safety incidents continued to impact ridership decisions.

Operating Cost: Each agencies reported higher operating costs in 2016, including CTA. CTA's increase of 4.2% was in line with the peer average increase of 4.1%. However, over the past five years, CTA's operating cost has grown by 15.2% versus the peer average of 23.1%.

Fare Revenue: Three agencies, including CTA, reported higher fare revenue for 2016, although none of the agencies implemented fare increases in the year.

Capital Funds Expended: With Red Line South reconstruction completed in 2013, CTA's capital fund expenditures dipped 36.3% in 2014, 5.7% in 2015, and 8.0% in 2016. SEPTA was the only agency to see an increase in capital fund expenditures for 2016, up nearly 50%, as it rebranded and reinvigorated its capital infrastructure initiative following implementation of a new state fuel tax to fund capital projects.

Average Speed: Each agency reported the same or slower speeds for 2016. At 17.9 miles per hour, CTA rail speed was 0.3% slower compared to 2015 and was the second-slowest speed among its peers, which averaged 20.6 miles per hour.

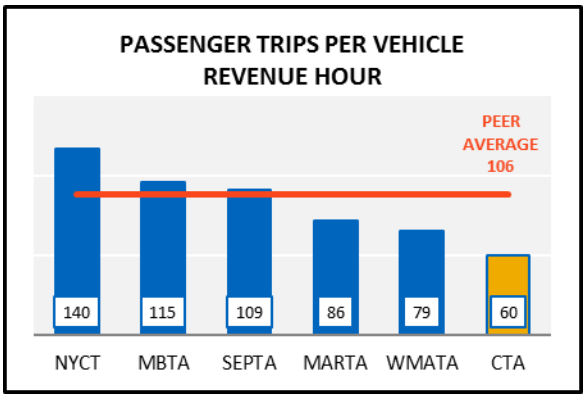
Average Trip Length: At 6.1 miles, CTA average trip lengths are 20% longer than the peer average of 4.9 miles. However, CTA rail trips in 2016 were 0.9% shorter compared to 2015, and 9.2% shorter compared to 2012. CTA's trending shorter average trip lengths is notable, as four peers reported increasing average trip lengths; SEPTA is the only other agency to see a shorter average trip length, with a dip of 0.1% over the five-year report period.

Average Vehicle Passenger Capacity: CTA cars are smaller in terms of the number of seats, length, and width compared to its peers due to its need to navigate tighter turns on its 'L' tracks. However, newer CTA rail cars have been able to accommodate more passengers, increasing this metric by 12.5% since 2012. The average vehicle passenger capacity of a CTA rail car is 106, about 31% smaller than the peer average of 153.2.

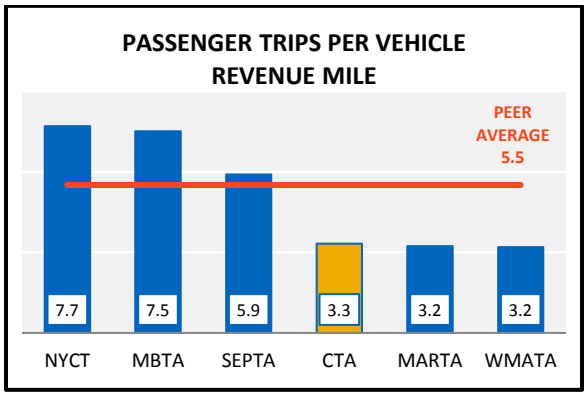
HEAVY RAIL

Service Coverage

CTA performance for the service coverage measures consistently falls below that of its peers. Newer CTA cars can carry more passengers (the average capacity in 2009 was 90; the average capacity in 2016 is 106 passengers), which helped CTA improve its rank position for one of the coverage measures in 2015. CTA's cars are still significantly smaller than the peer average of 153. Smaller cars account for most of the variance in performance, as CTA must run more cars to serve the same number of passengers. When passenger trips are examined in relation to overall capacity rather than per vehicle hour or mile, CTA performs above the peer average, indicating that although its cars are small, they are used effectively.



CTA saw a 1.0% increase in the number of vehicle revenue hours operated in 2016; more service combined with a ridership loss resulted in a 2.3% decrease in performance for this metric. Each agency reported worse performance for this metric, averaging 3.0% fewer trips per hour compared to 2015.

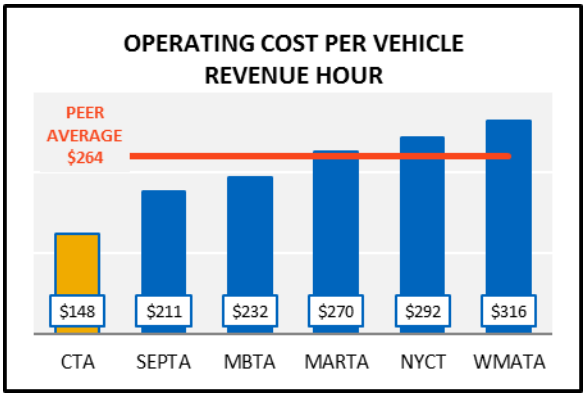


Along with the increase in vehicle revenue hours, CTA operated 0.8% more vehicle revenue miles in 2016. The 1.3% decrease in ridership produced a 2.0% decrease in performance for this measure, yet CTA maintained its rank position as three other agencies also reported decreases. Prior to 2015, CTA had ranked last for this metric for six consecutive years.

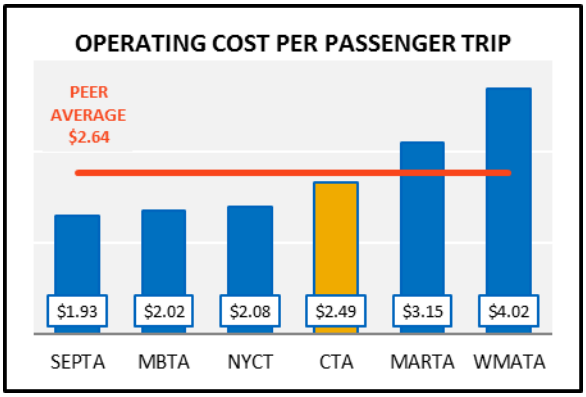
HEAVY RAIL

Service Efficiency and Effectiveness

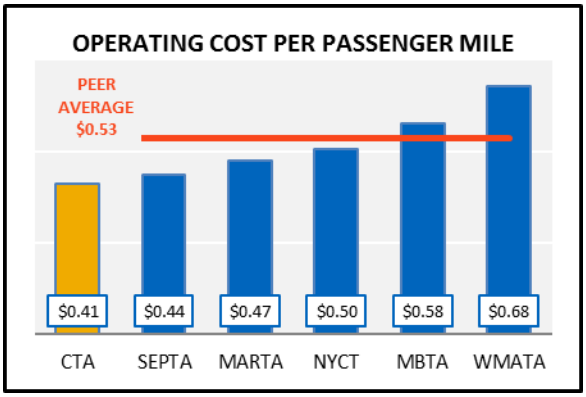
CTA performed well in service efficiency and effectiveness, maintaining its first place ranking for lowest operating cost per vehicle revenue hour and operating cost per passenger mile. Smaller vehicles and longer average trip lengths contribute to CTA's relative strong performance for these cost measures.



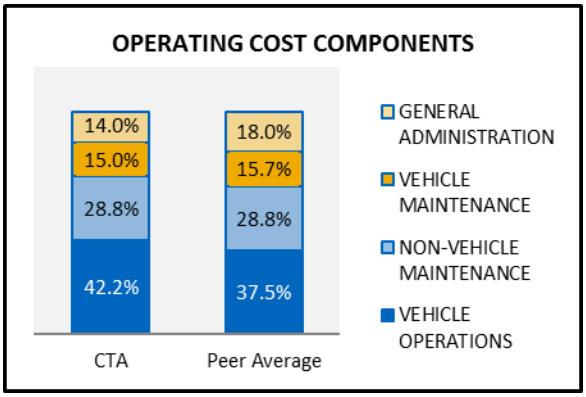
Higher operating cost paired with a 1.0% increase in vehicle revenue hours resulted in a 3.2% increase in operating cost per vehicle hour for 2016. CTA's performance for this metric was 44% favorable to the peer average. WMATA's 7.4% decrease in vehicle hours, the only peer to provide less service, led to its 10.0% increase for this measure.



CTA's operating cost per trip increased 5.5% in 2016 versus the peer average of 5.8%. 2016 was the sixth consecutive year that CTA ranked fourth for this measure, although since 2013 CTA has performed better than the peer average, which is skewed by MARTA and WMATA.



CTA has seen a significant decline in passenger miles traveled from 2012-2016, down 6.2% compared to a peer average increase of 1.4%. In 2016, CTA saw an increase of $0.02 for this measure, compared to a peer average increase of $0.01, yet maintained its first place ranking for the sixth consecutive year.

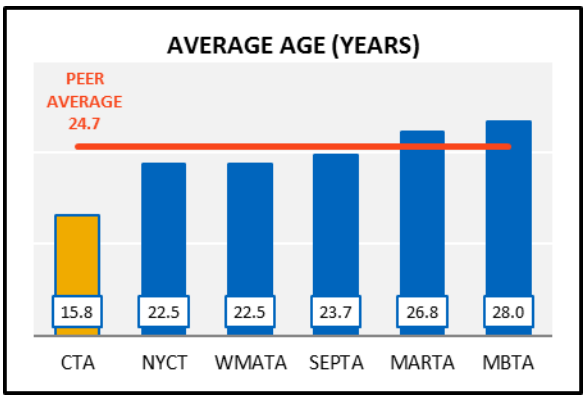


CTA spends a larger portion of its budget on vehicle operations than the peer average (42.2% vs. 37.5%) and less on general administration (14.0% vs. 18.0%). Vehicle and non-vehicle maintenance expenditures are on par with the peer averages, varying by one percent or less.

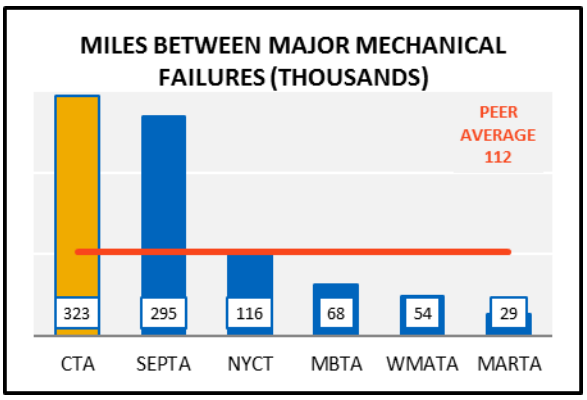
HEAVY RAIL

Service Maintenance and Capital Investment

Following four consecutive years of having the oldest average fleet age (2009-2012), CTA improved its rank position by four spots in 2013 and achieved the youngest fleet of its peer group in 2014, which it maintained in 2015 and 2016. CTA maintained its top-ranked position for miles between major mechanical failures, making 2016 the sixth consecutive year in this spot.



CTA did not put any new rail vehicles into service in 2016; only NYCT and WMATA added new rail cars (24 and 56, respectively). SEPTA announced plans to renew its rolling stock beginning in 2018, aided by funds from a recently-instituted gas tax. WMATA plans to add 224 new railcars in 2018, about one-fourth of its fleet.

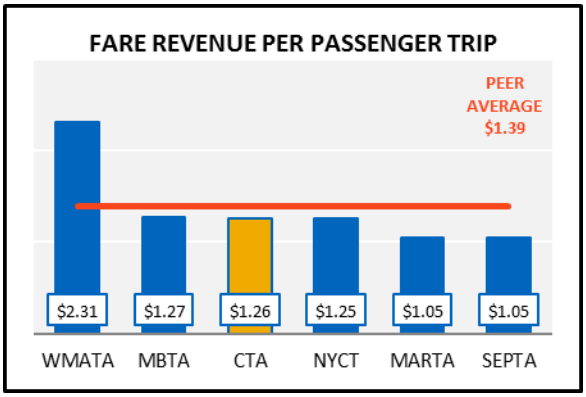


CTA has ranked either first or second for this measure each year since peer reporting began in 2009. In 2016, CTA saw a 10.6% increase for this measure, largely due to an 8.9% drop in the number of major mechanical failures. CTA maintained top ranking for this metric, with vehicles traveling an average of 323,000 miles between major mechanical failures versus its peer average of 112,500 miles.

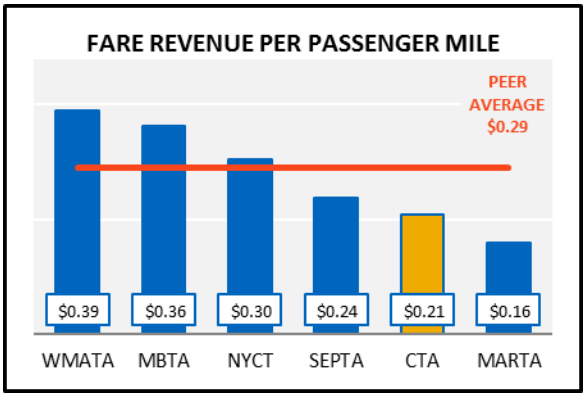
HEAVY RAIL

Service Level Solvency

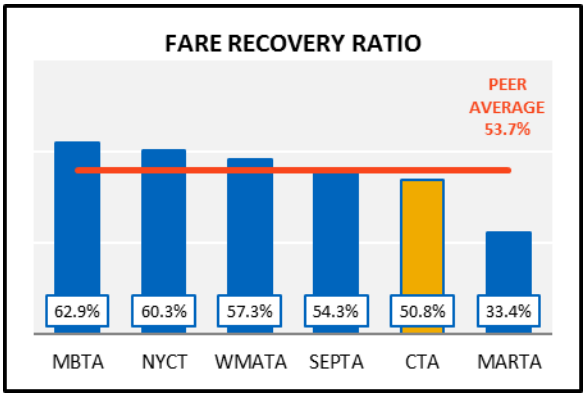
CTA's fare revenues are negatively impacted by a state mandate to provide free rides to qualifying passengers, which is not a factor for its peers. In 2016, CTA maintained its rank positions for each of the service level solvency measures.



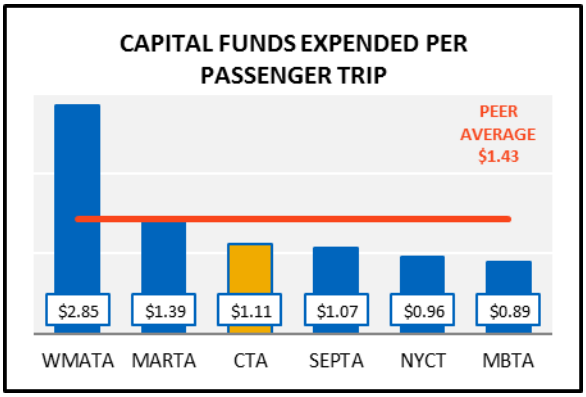
CTA realized a gain of $0.02 in fare revenue per passenger trip in 2016. WMATA, with a zone-based and peak/off-peak fare schedule, has the highest average fare and skews the peer average to $1.39.



CTA's fare revenue per passenger mile increased to $0.21 per passenger mile in 2016 but remained 28% below the peer average for this measure as fare revenues are spread over CTA's longer average trip length.



CTA maintained its fifth-place rank for this measure in 2016 for the third consecutive year. CTA's recovery ratio decreased by 1.8 percentage points, one of five agencies to decline in 2016. None of the agencies reviewed implemented a fare increase in 2016; as a result, the average decrease in fare recovery ratio for the year was -2.9 percentage points.



After ranking first for this metric in 2013, CTA dropped two rank positions in 2014 after completion of the Red Line South reconstruction and stayed at third place in 2015 and 2016. WMATA still leads the group for this measure as it continues work on Phase II of the Silver Line, scheduled for completion in 2020.

COMMUTER RAIL

The peers selected for commuter rail represent the largest commuter rail systems in the United States; all are traditional systems that can trace their roots to rail passenger services that have operated since the late 19th century. Three of the peers provide service to New York City from the states of New York, New Jersey, and Connecticut, with Boston and Philadelphia being the other major cities served. There are differences in the operating environment of each railroad affecting its service delivery and cost structure. Metra operates predominantly diesel services with one electric line and contends with more intermingling with freight operations than the other railroads. It benefits from the use of bi-level cars on all trains, enabling it to carry large passenger loads more cost-effectively. It also operates with a mix between directly-operated and contracted services. The New York peers have less interference with freight traffic, but confront greater capacity constraints and less operating flexibility due of the need to operate through tunnels or over bridges to New York City's center in Manhattan. SEPTA is unique in operating a fully electric service, which yields cost savings during times of high diesel prices.

Metra performed equal to or better than the peer average for each of the measures in the service coverage and service efficiency and effectiveness categories, ranking second for three measures and first for productivity (passenger trips per vehicle revenue hour) and cost effectiveness (cost per passenger mile). Metra's average fleet age decreased; however, reliability (as indicated by miles between major mechanical failures) worsened as the number of breakdowns increased. Although Metra saw increased fare revenue in 2016, Metra ranked below the peer average for each measures in the service level solvency category.

Peer Comparison

Service Area	Performance Measure	Performs better than peer average	
		2015	2016
Service Coverage	Passenger Trips per Vehicle Revenue Hour	YES	YES
	Passenger Trips per Vehicle Revenue Mile	YES	YES
Service Efficiency and Effectiveness	Operating Cost per Vehicle Revenue Hour	EQUAL	EQUAL
	Operating Cost per Passenger Trip	YES	YES
	Operating Cost per Passenger Mile	YES	YES
Service Maintenance and Capital Investment	Average Age	NO	NO
	Miles between Major Mechanical Failures	YES	NO
Service Level Solvency	Fare Revenue per Passenger Trip	NO	NO
	Fare Revenue per Passenger Mile	NO	NO
	Fare Recovery Ratio	NO	NO
	Capital Funds Expended per Passenger Trip	NO	NO

Peer Modal Characteristics

Metra operates the second-largest commuter rail system in the country, as measured by route miles. The three agencies that service the New York area (LIRR, MNCR, and NJT) each provide more vehicle revenue miles, passenger trips, and passenger miles than Metra. The New York systems also each spent the most operating dollars and collected more fare revenue.

Commuter Rail Overview

Modal Characteristics	Metra	MBTA	LIRR	MNCR	NJT	SEPTA
	Chicago	Boston	New York	New York	Newark	Philadelphia
Service Area Population	7,261,176	3,109,308	11,391,756	6,503,894	10,594,013	3,816,641
Service Area (square miles)	1,940	3,244	2,967	527	5,325	839
Population Density	3,743	958	3,839	12,341	1,989	4,549
Directional Route Miles	975	776	638	546	1,002	447
Vehicle Revenue Miles	43,521,315	23,532,668	66,763,465	69,580,238	61,393,168	19,334,288
Vehicle Revenue Hours	1,429,448	785,000	2,175,341	2,036,281	1,854,688	916,264
Passenger Trips	72,289,606	33,830,904	103,196,857	86,297,511	90,872,267	36,187,570
Passenger Miles	1,616,847,589	697,963,284	2,154,354,158	2,522,415,696	2,090,913,150	455,691,636
Operating Cost	$722,591,592	$403,654,786	$1,309,290,914	$1,158,814,834	$1,022,642,280	$267,844,193
Fare Revenue	$341,966,405	$198,331,440	$719,213,774	$694,640,173	$582,194,827	$151,908,278
Capital Funds Expended	$244,076,989	$254,899,000	$486,639,746	$360,116,887	$270,681,526	$285,600,893
Average Speed (miles per hour)	30.4	30.0	30.7	34.2	33.1	21.1
Average Trip Length (miles)	22.4	20.6	20.9	29.2	23.0	12.6
Average Vehicle Passenger Capacity	125	116	108	107	109	115
Average Vehicle Age (years)	24.0	23.0	14.7	14.7	17.6	28.3
Vehicles Operated in Maximum Service	1,061	421	1,020	1,164	1,267	339

Modal Characteristics Highlights

Directional Route Miles: There were no changes among any of the peers for this metric in 2016.

Vehicle Revenue Miles: Metra reported a 0.2% increase in vehicle revenue miles; two other agencies also reported increases (SEPTA +0.2% and MBTA +7.3%). A slight increase would be expected given that 2016 included an extra weekday due to the leap year; MBTA's significant increase follows a 6.0% dip in 2015 that resulted from extreme winter weather that forced service closures for several days.

Passenger Trips: Metra was one of two agencies to report a decrease in ridership for 2016, down 0.5% compared to 2015. SEPTA saw a 3.9% decrease for FY2016. LIRR, already the largest commuter rail service in terms of ridership, stands out with a 4.6% ridership increase for 2016, which it attributes to more frequent service, better on-time performance, newer electric fleet, and improved communications.

Operating Cost: Four agencies reported operating cost increases in 2016; Metra's 2.3% increase was in line with the average peer increase of 2.2%.

Fare Revenue: Two agencies implemented fare increases, Metra and New Jersey Transit. NJT had not implemented a fare increase since 2010, and accordingly instituted a significant 9% increase in 2016 compared to Metra's average 2% increase. Each agency reported increased fare revenue for 2016, ranging from 0.3% at SEPTA to NJT's increase of 7.6%. At 1.3%, Metra's year-over-year increase was lower than the peer average of 3.6%.

Capital Funds Expended: Metra saw a 4.9% increase in capital fund expenditures in 2016, the lowest rate of increase among five peers to see improvement in this indicator. SEPTA led the group with a 59.5% increase, subsequent to its Rebuilding for the Future infrastructure and vehicle rehabilitation program.

Average Speed: Metra experienced a 0.1% decrease in average speed compared to 2015, while LIRR and SEPTA experienced steeper declines of 3.2 and 5.0%, respectively.

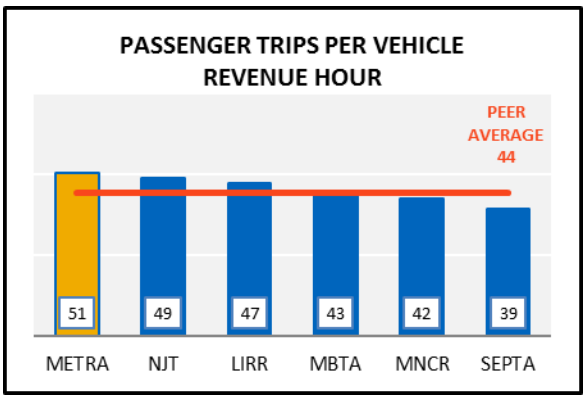
Average Trip Length: Metra's average trip length for 2016 was 22.4 miles, equal to 2015 and 5.2% longer than the peer average of 21.3 miles.

Average Vehicle Passenger Capacity: For the commuter rail mode, this comparison excludes standing passenger capacity to conform to industry standards and the expected provision of one seat per passenger. Metra, with its full fleet of double-decker cars, offers the highest average passenger seating capacity of its peers, with over 12.7% more capacity than the peer average.

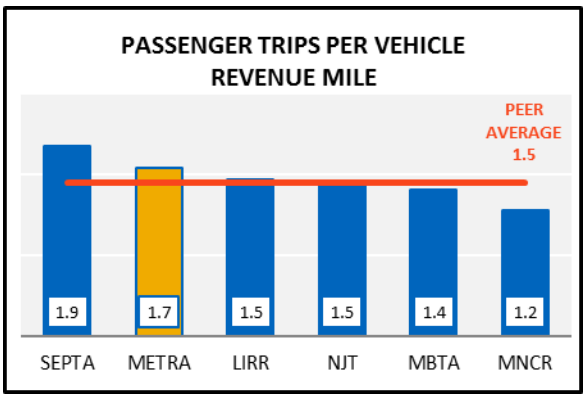
COMMUTER RAIL

Service Coverage

Metra has consistently performed better than the peer average for the two measures of service coverage shown below since peer reporting began in 2009. A ridership decrease of 0.5% in 2016, occurring in conjunction with 0.4% increase in vehicle revenue hours and a 0.2% increase in vehicle revenue miles, yielded the same rank positions as 2015.



For the third consecutive year, Metra achieved the top ranking for this measure of productivity, favorable to the peer average by over 14%. New Jersey Transit saw the largest increase at 5%, yet this was achieved through a 3.2% reduction in vehicle revenue hours, the only peer to do so. SEPTA, which had the largest increase in vehicle service hours at 5.5%, saw the most significant decrease for this metric, down 8.9%, as ridership fell 3.9% in the year.

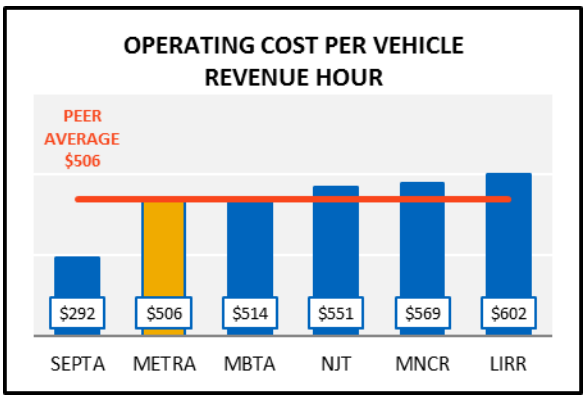


For the seventh consecutive year, Metra ranked second for passenger trips per vehicle revenue mile, matching last year's result of 1.7. Metra's performance was 9.6% favorable to the peer average of 1.5 passenger trips per vehicle revenue mile.

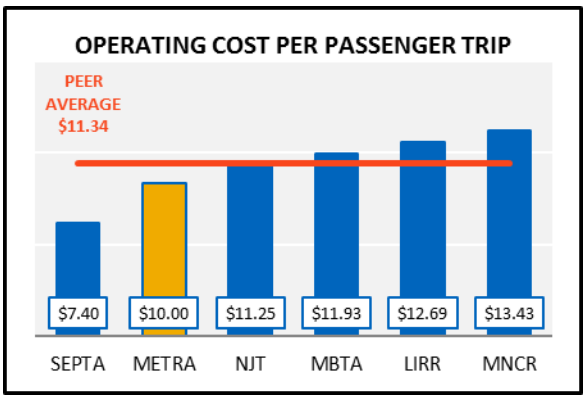
COMMUTER RAIL

Service Efficiency and Effectiveness

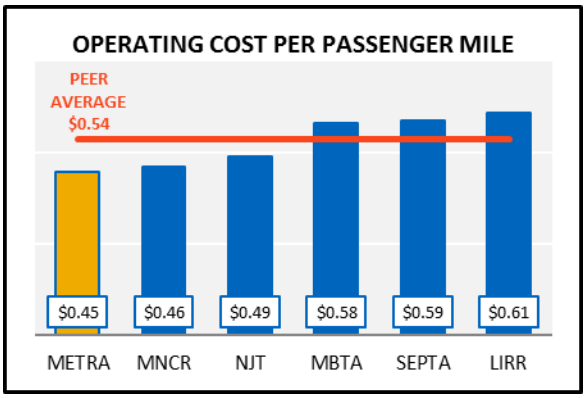
Metra performs very well compared to its peers for the service efficiency and effectiveness measures. With an operating cost increase of 2.3% in 2016, Metra gained one rank position for operating cost per vehicle revenue hour and operating cost per passenger mile, and maintained its second-place ranking for operating cost per passenger trip for the sixth consecutive year.



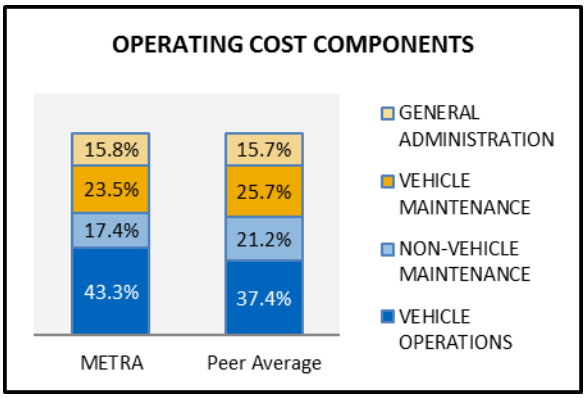
Three agencies reported increases in operating cost per vehicle revenue hour in 2016, including Metra, with a 2.3% increase. With an operating cost per vehicle revenue hour of $506, Metra matched the peer average but improved one rank position as NJT dropped two spots.



For the sixth consecutive year, Metra maintained its position for this measure with a 2.7% increase from 2015. Metra's operating cost per passenger trip was $1.34 favorable to the peer average and 26% less than MNCR, which has the highest cost per passenger trip.



Four agencies reported increased operating cost per passenger mile, including Metra. Metra's cost increased 2.7% versus the peer average increase of 3.2%; Metra moved up one rank position to first although MNCR reported a 5.3% decrease for this measure as its 2016 ridership was the highest of its history. Metra has ranked either first or second for this measure since peer reporting began in 2009.

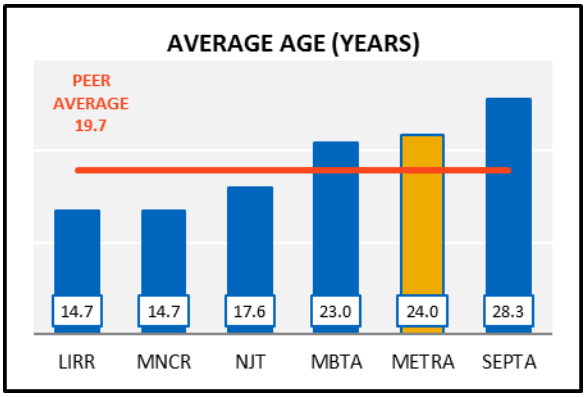


Vehicle operations make up the largest portion of each peer agency budget; this totaled 43.3% of Metra's 2016 budget compared to the peer average of 37.4%. Metra expends several percentage points less than the peer average for the two maintenance components, and equal proportions on general administration.

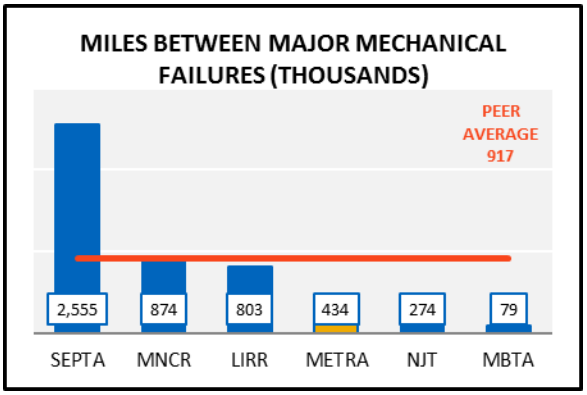
COMMUTER RAIL

Service Maintenance and Capital Investment

After two years in last position for having the oldest average fleet, Metra moved up one position in 2014 as it continued with its fleet modernization efforts and maintained that position in 2015 and 2016. Although roughly 39% of its vehicles have reached their minimum useful life, vehicle mid-life rehabilitation and end-of-life rebuild schedules have enabled Metra to maintain its older fleet in a relative state of good repair.



With an average fleet age of 24.0 years, Metra's revenue vehicles are more than four years older than the peer average but nearly six years younger compared to its average fleet age from 2012. In early 2016, Metra completed the replacement of its entire Electric District Line fleet, about 14% of its revenue vehicles.

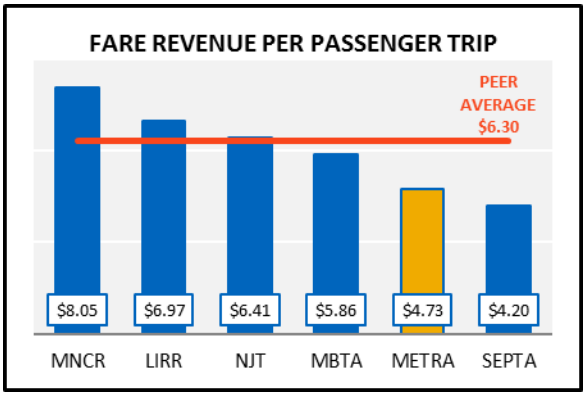


Metra maintained its rank position for this measure in 2016 but saw significantly more breakdowns compared to 2015. SEPTA, perennially the top performer for this metric, is the only peer to utilize all-electric propulsion; the middle four use a mix of diesel and hybrid diesel/electric propulsion, and MBTA is the only all-diesel fleet among the peers and has ranked last for this measure each year since peer reporting began.

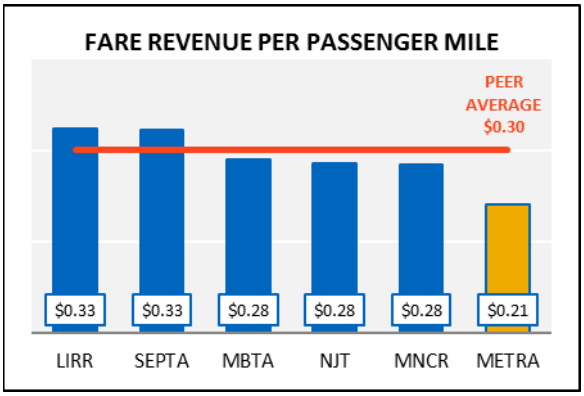
COMMUTER RAIL

Service Level Solvency

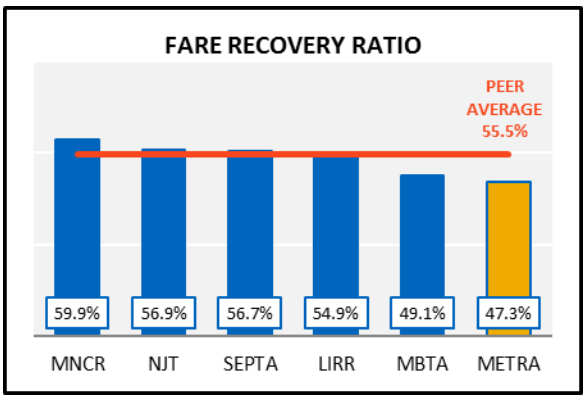
Although Metra showed improvement for two ridership-related solvency metrics, its rank positions remained unchanged from 2015. Metra moved down one rank position each for fare recovery ratio and capital fund expenditures per passenger trip.



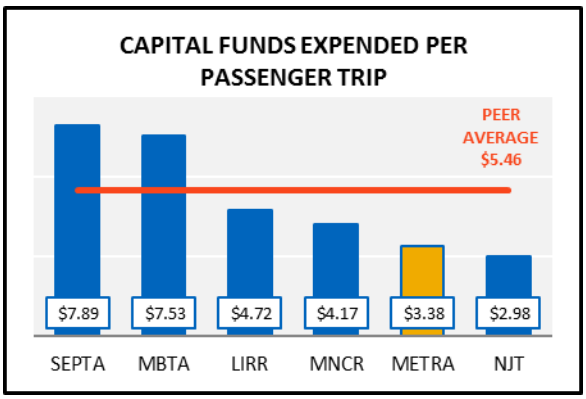
Metra maintained its rank position for this measure for the fourth consecutive year despite a 1.8% improvement following the 2016 fare increase that improved its average collected fare by $0.08. Metra's fare revenue per passenger trip remained 25%, or $1.57, below the peer average, $0.05 more than in 2015.



In 2016, fare increases were implemented at Metra and New Jersey Transit. Metra fare revenue per passenger mile remained at $0.21 despite increased fare revenue and a decline in passenger miles traveled. Metra's 2016 result was 30% below the peer average.



Metra's fare recovery ratio decreased 0.4 percentage points to 47.3% in 2016, and moved down one rank position to last place. It is 8.2 percentage points below the peer average, a wider gap compared to 2015 results. While the peer average has trended upward over the past five years (up 2.3 percentage points), Metra's ratio has remained fairly stable, down a net 0.2 percentage points.



Metra lost one rank position from 2015 although its capital fund expenditures per passenger trip increased 5.4%. With capital expenditures of $3.38 per passenger trip, Metra's performance was 38% below the peer average for this measure. Over the past five years, Metra's capital spending per passenger trip has decreased 7.9%, versus the peer average increase of 44%.

SUBURBAN BUS

The peers selected for Pace bus include relatively large bus systems that operate in predominantly suburban areas. They each operate adjacent to a major city with service area populations ranging from 737,000 in San Mateo to 5.6 million in Chicago. In addition to serving the largest population, Pace serves the largest geographic region, at more than triple the size of the next largest peer. The peers differ in the extent to which they may provide some urban service within their service mix. None is the primary service provider for the major metropolitan area to which they are adjacent, although some have smaller cities (populations 300,000 to 400,000) within their service regions such as Oakland, served by AC Transit, and Anaheim, served by OCTA. However, both AC Transit and OCTA have peak fleet sizes comparable to Pace (450-600 buses). SMART, NICE, and SamTrans match Pace more closely in the overall suburban character of their service areas, but operate smaller fleets (200-300 buses).

Pace experienced its third year of ridership declines, which unfavorably impacted each measure of coverage and efficiency and effectiveness by at least 8% compared to 2015. However, Pace maintained its top ranking for operating cost per vehicle revenue hour, second place rank for operating cost per passenger mile, and third place for cost per passenger trip. Pace improved its rank position for average fleet age and maintained its third-place rank for miles between major mechanical failures. Pace saw improved performance for two fare-related measures, and ranked second for capital fund expenditures per passenger trip for the third consecutive year.

Peer Comparison

Service Area	Performance Measure	Performs better than peer average	
		2015	2016
Service Coverage	Passenger Trips per Vehicle Revenue Hour	NO	NO
	Passenger Trips per Vehicle Revenue Mile	NO	NO
Service Efficiency and Effectiveness	Operating Cost per Vehicle Revenue Hour	YES	YES
	Operating Cost per Passenger Trip	YES	EQUAL
	Operating Cost per Passenger Mile	YES	YES
Service Maintenance and Capital Investment	Average Age	YES	YES
	Miles between Major Mechanical Failures	EQUAL	NO
Service Level Solvency	Fare Revenue per Passenger Trip	NO	NO
	Fare Revenue per Passenger Mile	NO	NO
	Fare Recovery Ratio	NO	NO
	Capital Funds Expended per Passenger Trip	YES	YES

Peer Modal Characteristics

Pace Suburban Bus provides service to a much larger population than its peers, spread over a far broader network, as evidenced by having the largest service area and the lowest population density of its peers. Pace operates the most vehicle revenue miles, yet reports the third-largest number of passenger trips.

Suburban Bus Overview

Modal Characteristics	Pace Chicago	SMART Detroit	OCTA Orange County	NICE New York	SAMTRANS San Mateo Co	AC Transit San Francisco
Service Area Population	5,630,238	3,424,477	3,077,903	1,339,532	737,100	1,425,275
Service Area (square miles)	3,519	1,074	463	285	97	364
Population Density	1,600	3,189	6,648	4,700	7,599	3,916
Vehicle Revenue Miles	22,310,280	8,788,406	19,848,469	9,232,412	6,688,654	19,756,310
Vehicle Revenue Hours	1,582,310	528,052	1,624,604	779,772	539,930	1,793,391
Passenger Trips	28,399,520	8,848,567	43,271,533	26,902,007	13,170,760	53,844,356
Passenger Miles	184,815,825	70,708,913	157,777,363	150,113,199	61,815,883	218,864,695
Operating Cost	$188,925,557	$82,960,901	$201,480,886	$113,485,564	$112,896,129	$379,021,242
Fare Revenue	$32,816,984	$11,698,327	$44,439,893	$44,831,859	$17,299,221	$71,487,371
Capital Funds Expended	$70,746,735	$27,309,550	$37,625,147	$22,003,884	$12,821,043	$51,652,101
Average Speed (miles per hour)	14.1	16.6	12.2	11.8	12.4	11.0
Average Trip Length (miles)	6.5	8.0	3.6	5.6	4.7	4.1
Average Vehicle Passenger Capacity	48	48	72	62	59	70
Average Vehicle Age (years)	7.8	10.5	10.2	5.4	8.3	7.0
Vehicles Operated in Maximum Service	637	203	471	255	270	499

Modal Characteristics Highlights

Vehicle Revenue Miles: Pace had its fifth consecutive year of increases in vehicle revenue miles in 2016, increasing 3.0% over 2015 and 10.4% over the five-year period. NICE was the only peer to scale back service in 2016, down 3.6%; increases in service among the other four peers ranged from 0.7% at SMART to 4.0% at SAMTRANS, which had implemented significant changes to 25% of its routes in January 2016 to respond to changing traffic conditions and patterns.

Passenger Trips: Following ridership decreases of 3.1% in 2014 and 4.9% in 2015, Pace bus ridership decreased another 5.7% in 2016. Each peer agency also saw a ridership decline in 2016, ranging from 1% at NICE to 8% at OCTA. Over the five-year time period, only two agencies have seen ridership growth, SAM and ACT, and those increases were held to 0.4%; five-year decreases for SMART and OCTA exceeded 17% while Pace ridership losses were just under 12%. Declining bus ridership rates have been attributed to the increased use of ridesharing services and the low cost of gasoline.

Operating Cost: Each agency reported increased operating cost for 2016, as high as 18.6% reported at ACT. Pace's cost rose 12.0% as service hours and miles were increased in the year. Since 2012, Pace bus operating cost grew 17.7% as hours and miles grew 10.7% and 10.4%, respectively.

Fare Revenue: Pace's fare revenue decreased 1.8% in 2016 as ridership continued its decline. Pace's fare revenues have benefitted from fare increases at CTA, favorable pass agreements with CTA, the elimination of cash transfers, and the tendency of cash riders to pay a full $2.00 fare although the base fare is $1.75. ACT was the only agency to see an increase in fare revenue for 2016, up 6.4%, although it lost ridership as did each of its peers.

Capital Funds Expended: Pace saw an increase of 32.0% for capital fund expenditures in 2016, and maintained its second place rank for the capital fund expenditure per passenger trip measure for the third consecutive year, spending more than double the peer average.

Average Speed: Pace's average speed of 14.1 miles per hour is unchanged from 2014 and is the second-fastest among its peers, which range from 11.0 to 16.6 miles per hour.

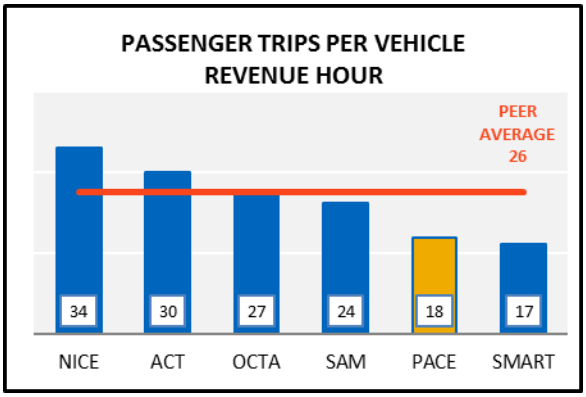
Average Trip Length: Pace's riders travel the second-longest trip lengths with an average of 6.5 miles versus its peer average of 5.2 miles.

Average Vehicle Passenger Capacity: Pace's peer agencies run vehicles that are up to 48% larger. With an average vehicle passenger capacity of 48.5, Pace runs the second-smallest capacity buses of its peer group.

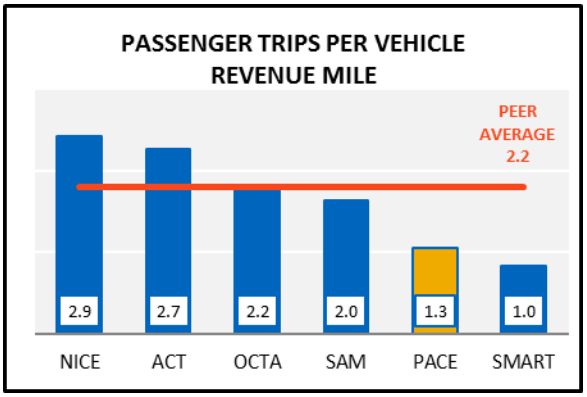
SUBURBAN BUS

Service Coverage

In 2016, Pace bus ridership decreased by 5.7%, its third year of declining ridership. Both measures of service coverage were negatively impacted by lower ridership, exacerbated by increases in vehicle revenue hours and vehicle revenue miles. Pace maintained its fifth-place rank position for both measures in 2016. Although Pace serves the largest population of its peer group, the geographic spread of that population produces the lowest population density. Lower population densities require Pace to operate approximately twice as much service to achieve similar ridership levels as the top performer for the coverage metrics below. Additionally, Pace has continued its efforts to streamline and restructure services to eliminate transfers, which results in fewer reported trips.



Although Pace's performance worsened by 8.6% for this measure in 2016, it maintained its rank position for the fourth consecutive year. At 18 passenger trips per vehicle revenue hour, Pace performance is 32.2% lower than the peer average.

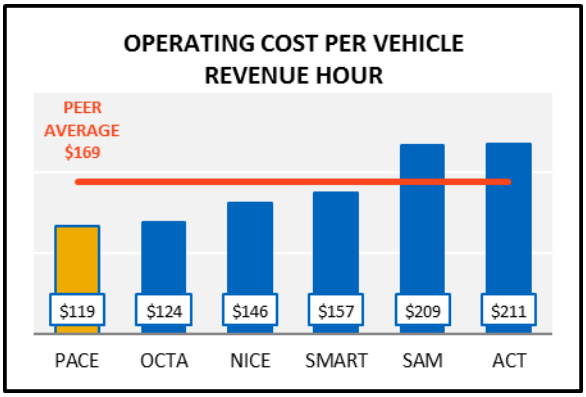


Pace averaged 1.3 passenger trips per vehicle revenue mile, 8.4% lower than 2015, and maintained its rank position. Pace's performance for this metric is 41% below the peer average and is reflective of Pace's much lower population density, less than one-third of the peer average.

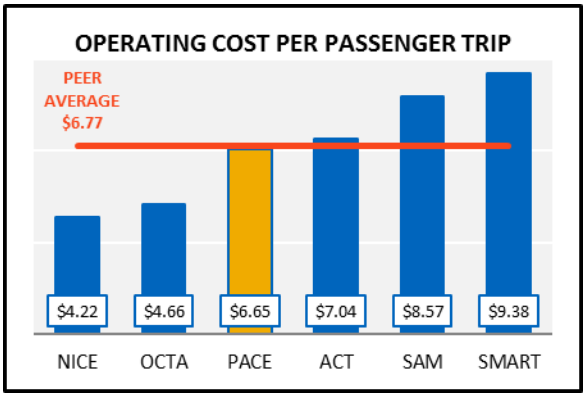
SUBURBAN BUS

Service Efficiency and Effectiveness

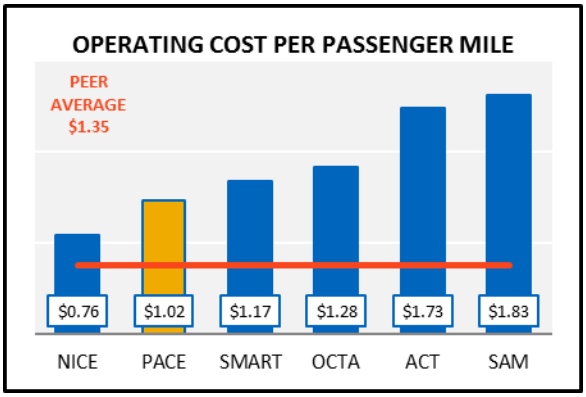
Pace performed better than or equal to the peer average for the three measures related to operating cost. Pace maintained its top rank position for operating cost per vehicle revenue hour, second rank position for operating cost per passenger mile, and third place rank for operating cost per passenger trip despite having the second-highest operating cost increase.



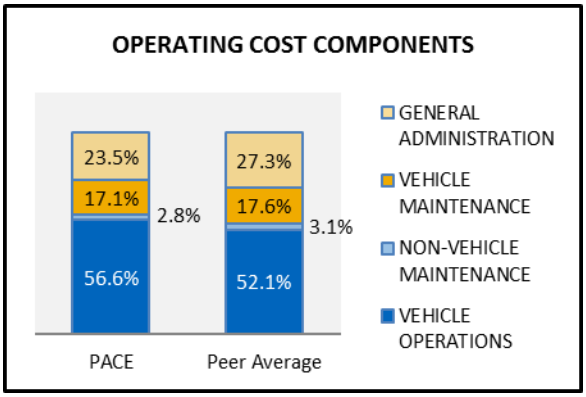
Pace maintained its top-ranked position for this measure for the eighth consecutive year. With an operating cost per vehicle revenue hour of $119, Pace was 29%, or $50, below the peer average.



Each agency experienced ridership losses in 2016, and each saw increases for this measure ranging from 2.9% at NICE to 21.8% at ACT. NICE has held the top spot for five consecutive years, since outsourcing service from MTA to a private operator in 2012.



Each of the six agencies saw increases in 2016 for this measure; Pace had the highest increase at 22.8% yet maintained second rank for the fifth consecutive year. Pace and OCTA had the steepest decreases in passenger miles traveled, at 8.8 and 8.9%, respectively.

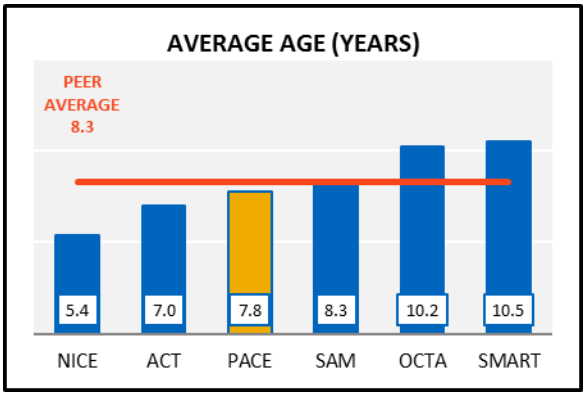


Pace spends a larger proportion of its operating budget to vehicle operations, 4.5 percentage points more than the peer average, a narrower gap compared to 2015. Pace spends significantly less on general administration, while maintenance expenditures are on par with the peer averages.

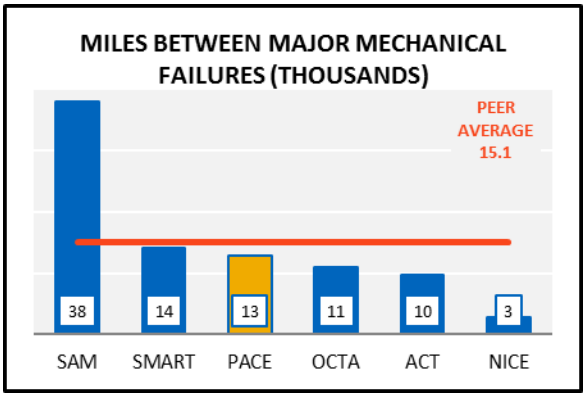
SUBURBAN BUS

Service Maintenance and Capital Investment

Pace's fleet added 59 new buses in 2016, keeping its average age equal to 2015 but improving its rank position. Pace maintained its ranking for the reliability performance indicator miles between major mechanical failures although its performance improved by over 2% in 2016.



Pace added 59 new buses into its active fleet in 2016, the most of its peer group for the third consecutive year. Pace's average fleet age of 7.8 years is below the peer average of 8.3 years.

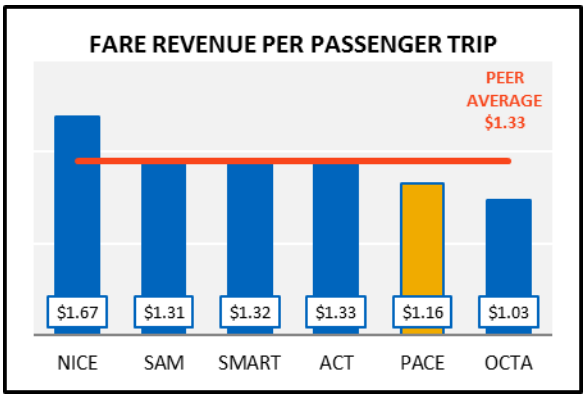


Pace was one of five agencies to see an improvement in miles between major mechanical failures in 2016, up 2.4% compared to 2015. Pace has held second or third place rankings for this metric for each of the past six years. The peer average is heavily skewed by SAM, which reports a similar average age as Pace but one-eighth the mechanical failures.

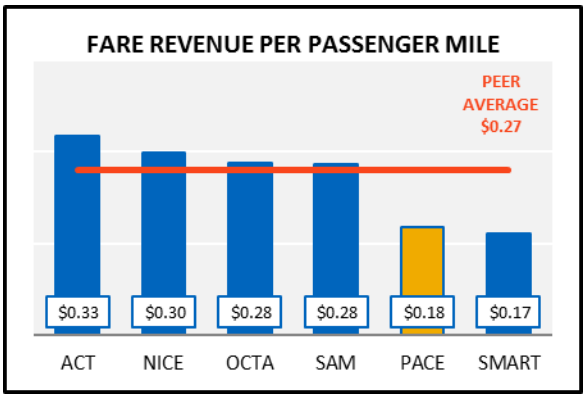
SUBURBAN BUS

Service Level Solvency

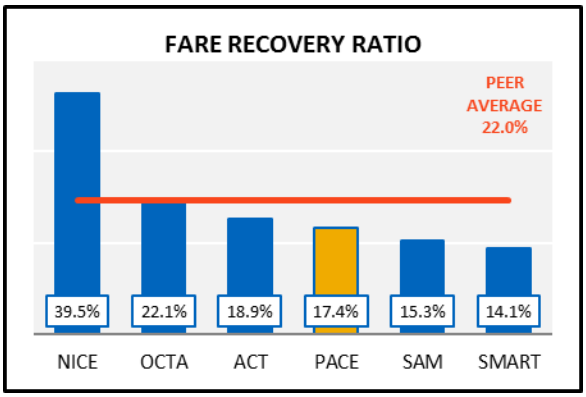
Pace's fare revenue decreased in 2016, however, losses were not as steep as losses in ridership and passenger miles traveled. Accordingly, the first two measures shown improved from 2015, and Pace rose one rank position for fare revenue per passenger mile. Pace maintained its rankings for fare recovery ratio and for capital funds expended per passenger trip.



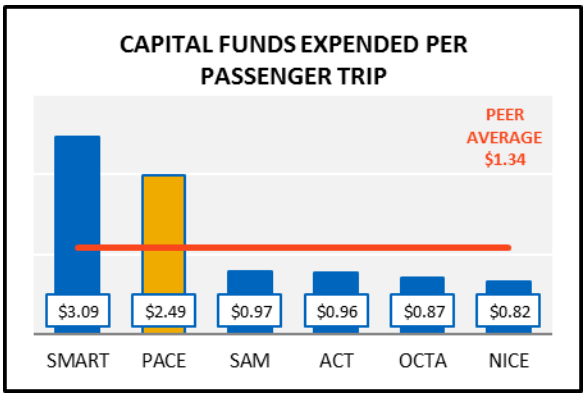
Following the 2016 base fare increase, Pace's fare revenue per passenger trip increased $0.05 to $1.16, but was 13% below the peer average of $1.33. Pace has had the lowest base fare of its peers, and has ranked 5th or 6th for this measure for each of the past five years.



Pace's fare revenue per passenger mile was $0.18, up 7.7% from 2015 but 34% below the peer average. Pace's passengers ride 25% longer average distances compared to its peers, which negatively impacts this result.



Pace's fare recovery ratio decreased by 2.5 percentage points in 2016 as fare revenue decreased by nearly 2% and operating cost increased by 12%. At 17.4%, Pace's fare recovery ratio falls 4.6 percentage points below the peer average, a wider margin than in 2015, yet Pace maintained its rank position.



Capital fund expenditures at Pace increased by 32% in 2016, keeping Pace in the second rank position for this metric. At $2.49, Pace's capital fund expenditure per passenger trip is 86% higher than the peer average. SMART's expenditures more than tripled in 2016 as the agency diverted federal funds to purchase buses in lieu of preventive maintenance.

VANPOOL

For the vanpool service mode, peers were chosen from the largest vanpool providers in the country since Pace operates one of the nation's largest programs. Agencies that provided fixed-route bus service along with their vanpool operations were considered and those that were operated by either the region's Metropolitan Planning Organization (MPO) or Department of Transportation (DOT) were excluded.

The Pace vanpool program decreased by 46 vanpools in 2016. Pace and four peer agencies saw ridership declines in 2016, while one had growth of 1.0%. Pace performed better than the peer average for two measures of service efficiency and effectiveness; however, it lost one rank position for operating cost per vehicle revenue hour and two positions for operating cost per passenger trip. The 2016 Pace vanpool fleet remained the oldest among its peers for the third consecutive year. The Pace vanpool program, which has not implemented a fare increase since 2009, saw worse performance for each of the three solvency measures, and dropped one rank position for fare revenue per passenger trip while maintaining rank positions for the other two solvency measures. The provision of reduced fares for ADA-eligible riders results in lower fare revenue for the Pace vanpool program, but plays an important role in contributing to overall agency efficiency.

Peer Comparison

Service Area	Performance Measure	Performs better than peer average	
		2015	2016
Service Coverage	Passenger Trips per Vehicle Revenue Hour	NO	NO
	Passenger Trips per Vehicle Revenue Mile	NO	EQUAL
Service Efficiency and Effectiveness	Operating Cost per Vehicle Revenue Hour	YES	YES
	Operating Cost per Passenger Trip	YES	YES
	Operating Cost per Passenger Mile	NO	NO
Service Maintenance and Capital Investment	Average Age	NO	NO
	Miles between Major Mechanical Failures	NO	NO
Service Level Solvency	Fare Revenue per Passenger Trip	NO	NO
	Fare Revenue per Passenger Mile	YES	EQUAL
	Fare Recovery Ratio	NO	NO

Peer Modal Characteristics

Pace vanpool covers the largest service area and serves the second-largest population of its peers but remains the fourth-largest program as determined by fleet size and ridership. Pace vanpools travel the second-shortest average trip lengths at below-average speeds.

Vanpool Overview

Modal Characteristics	Pace	DART	STAR	METRO	METRO	OCTA
	Chicago	Dallas	Houston	Los Angeles	King County	Orange County
Service Area Population	5,630,238	2,380,530	4,298,000	8,626,817	2,117,125	3,077,903
Service Area (square miles)	3,519	698	1,306	1,513	2,134	463
Population Density	1,600	3,411	3,291	5,702	992	6,648
Vehicle Revenue Miles	8,873,999	3,061,242	9,349,083	32,197,552	14,879,324	8,842,342
Vehicle Revenue Hours	305,710	80,758	258,720	763,949	542,569	227,024
Passenger Trips	1,664,461	515,880	2,217,577	4,025,577	3,540,538	1,299,948
Passenger Miles	35,556,507	19,023,638	65,458,980	182,841,314	68,191,343	44,944,588
Operating Cost	$6,301,569	$1,747,418	$10,866,969	$14,628,264	$9,042,386	$8,909,318
Fare Revenue	$3,267,864	$748,921	$7,109,467	$15,682,409	$7,293,271	$5,985,767
Capital Funds Expended	$3,180,425	$0	$0	$0	$1,122,010	$0
Average Speed (miles per hour)	29.0	37.9	36.1	42.1	27.4	38.9
Average Trip Length (miles)	21.4	36.9	29.5	45.4	19.3	34.6
Average Vehicle Passenger Capacity	9.4	11.9	10.9	8.0	8.3	7.7
Average Vehicle Age (years)	4.5	0.9	2.6	1.4	3.7	1.3
Vehicles Operated in Maximum Service	664	186	686	1,378	1,469	510

Modal Characteristics Highlights

Vehicle Revenue Miles: Four agencies experienced service increases, as shown by vehicle revenue miles, while Pace reported an 11% decrease. DART saw significant expansions to its vanpool program, reporting a 13.6% increase to vehicle revenue miles in 2016.

Passenger Trips: Pace saw a ridership decrease of 10% in 2016, one of five agencies to see a decline for the year. OCTA was the only agency to report increased ridership for the year, up 1.0%.

Operating Cost: Four agencies reported a decrease in operating cost in 2016, including Pace, down 3.6% compared to 2015 as the size of its fleet shrank.

Fare Revenue: Four agencies reported decreased fare revenues in 2016; Pace had a 19% decrease, and Houston also had a double-digit decrease of 10%. With over half of its vanpool program operating as reduced-fare ADA service, Pace is unique among its peers and accordingly receives less in fare revenues than a similarly-sized traditional vanpool service would generate.

Average Speed: Pace vanpool average speeds decreased 1.2% in 2016, one of four agencies to see a reduction in average speed for the year. At 29.0 miles per hour, its vanpools travel 20% slower than the peer average. Pace is the only agency of its peer group to operate in a geography devoid of high-occupancy vehicle (HOV) lanes.

Average Trip Length: The average trip length for Pace vanpools was 21.4 miles, 4.4% shorter than in 2015. With peer trip lengths ranging from 19.3 miles to 45.4 miles, Pace's average trip length was the second-shortest among its peers and 35% below the peer average.

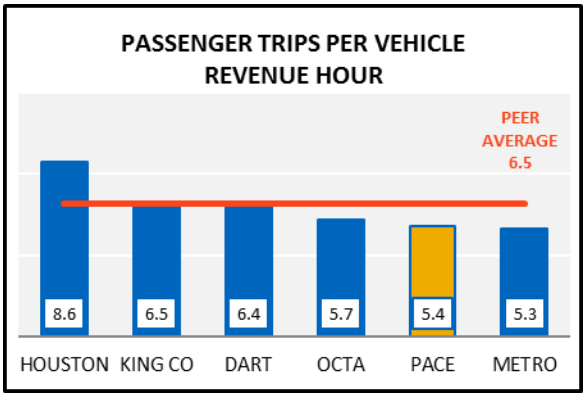
Average Vehicle Passenger Capacity: Pace vanpools operate a mix of vehicle types, from minivans to 14-passenger maxivans, with an overall average passenger capacity of 9.4 passengers, equal to the peer average.

Vehicles Operated in Maximum Service: Two vanpool programs expanded operations in 2016: DART and OCTA, which added 22 and 20 vanpools, respectively. Pace's total dropped by 46 vanpools. The King County METRO vanpool program continues to be the largest one among the peer group, aided by state mandates to reduce minimum vehicle occupancies during peak hours of the day.

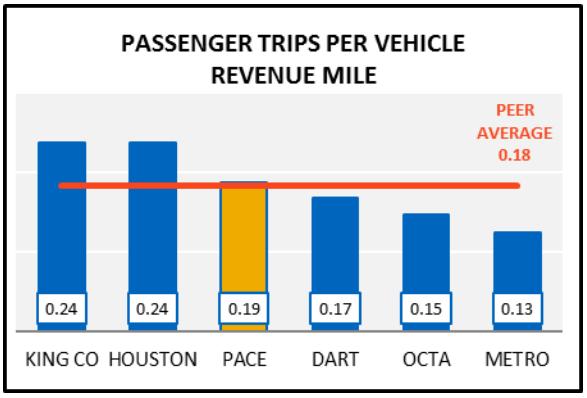
VANPOOL

Service Coverage

Pace experienced a 10.1% ridership loss in 2016; four other peer agencies also saw declines as the price of gasoline continued to be low throughout the year. OCTA was the only agency to see an increase, by 1%, over 2015. Pace gained one rank position for each coverage measure by having commensurate decreases in vehicle revenue hours and vehicle revenue miles as ridership declined.



Pace moved up one position to fifth place in 2016, as LA METRO increased hours but had a ridership decrease of 1.7%. Pace was the only agency to see improvement in this measure in 2016, as vehicle hours decreased by 10.3% and ridership decreased by 10.1%.

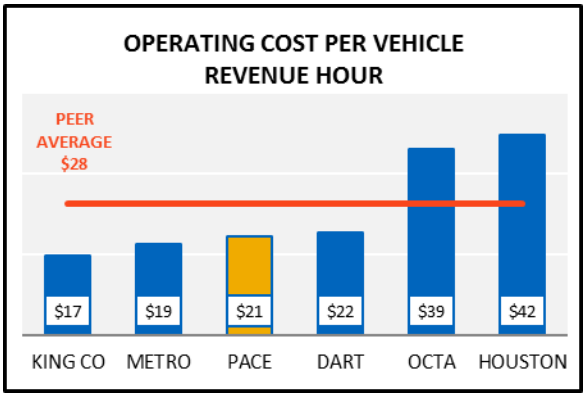


Pace's rank position improved by one spot after ranking 4th for this measure for seven consecutive years. Performance for this measure improved 1.4% in 2016 as the decrease in vehicle revenue miles (11.4%) was greater than the decrease in ridership (10.1%). The performance of each peer agency was unfavorable compared to 2015.

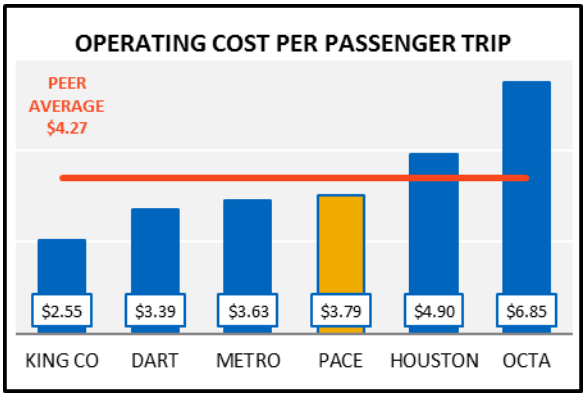
VANPOOL

Service Efficiency and Effectiveness

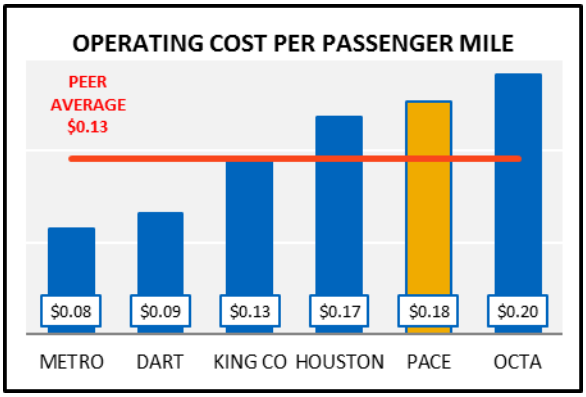
Pace saw a significant decrease in each indicator of service: vehicle revenue hours, vehicle revenue miles, passenger trips, and passenger miles traveled. Pace moved down one rank position for operating cost per vehicle revenue hour and down two positions for operating cost per passenger trip, and maintained its position for operating cost per passenger mile.



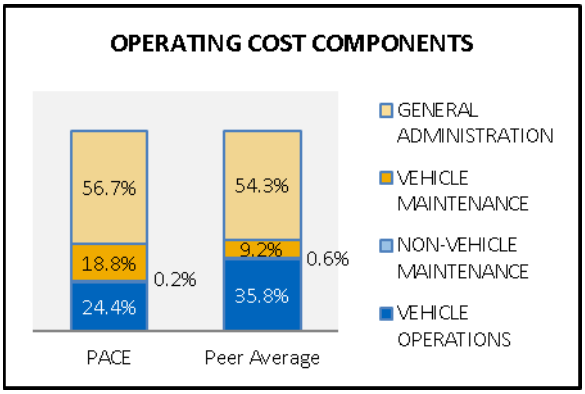
Pace vanpool's cost per vehicle revenue hour increased by 7.4% in 2016, one of three agencies to see an increase. At $20.61, Pace's operating cost was 26% below the peer average.



The average Pace vanpool trip cost $3.79 in 2016, up $0.26 from 2015. Pace moved down two rank positions while DART and LA METRO saw double-digit reductions in their operating costs.



Pace maintained its rank position for this measure although its operating cost per passenger mile rose $0.02 to $0.18. Pace's cost per passenger mile is 32.5% higher than the peer average.

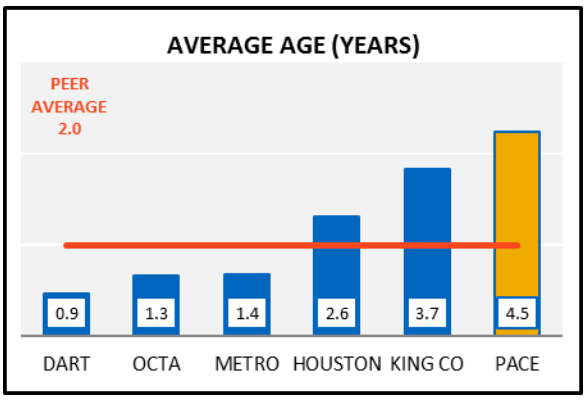


Pace's operating cost components are on par with King County, another directly-operated vanpool program. The Houston, Los Angeles, and Orange County programs are not directly-operated, making cost component breakdowns more difficult to examine as costs tend to be lumped into the administration category.

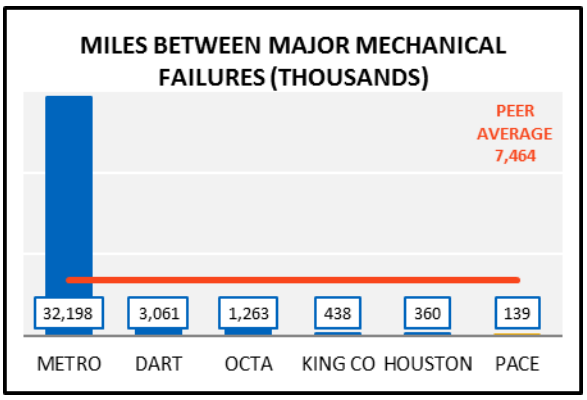
VANPOOL

Service Maintenance and Capital Investment

Pace added 21 new vehicles into its active fleet in 2016 and held the sixth-place rank position for the third consecutive year. Pace reported seven fewer major mechanical failures in 2016, but reported the most of its peers for the year; Pace's rank position for this measure of reliability remained unchanged from 2013.



Pace replaced the fewest vehicles in 2016, 21 versus the peer average of 158. With an average age of 4.5 years, Pace has the oldest average fleet age of its peers; 36% of Pace's vanpools are beyond their minimum useful life of four years versus the peer average of 11%.

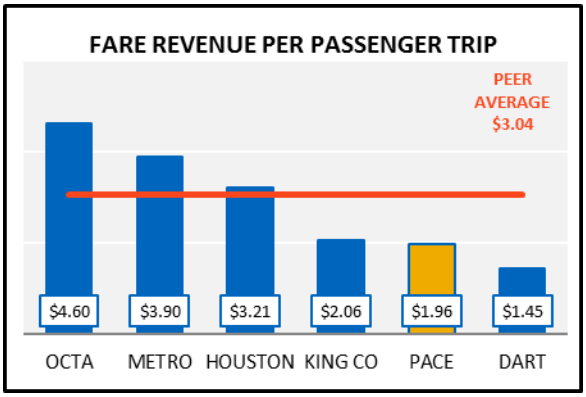


LA Metro, which reported only one major mechanical failure in 2016, skewed the average dramatically, as did DART, which reported none. Pace vanpool experienced 64 major mechanical failures versus the peer average of 14, ranking sixth for this measure for the fourth consecutive year.

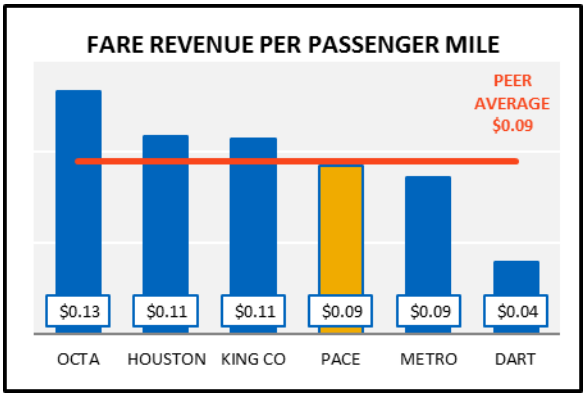
VANPOOL

Service Level Solvency

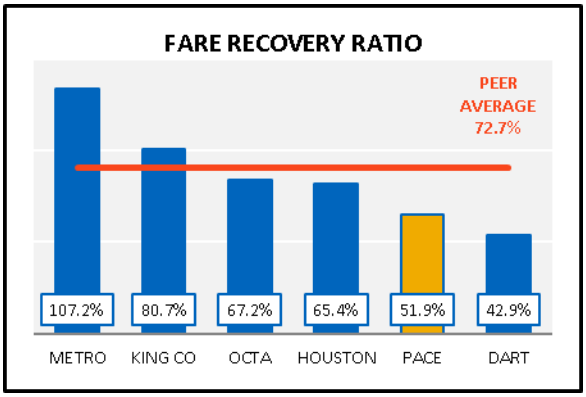
Pace reported a 19% drop in fare revenue in 2016, which negatively impacted each measure of solvency and caused a drop of one rank position for fare revenue per passenger trip. Over half of Pace vanpools provide reduced fare service for ADA-eligible riders, resulting in significantly lower fare revenue than traditional vanpool operators.



Four agencies reported lower fare revenue in 2016, including Pace. Pace's average fare was 35% below the peer average, 10 percentage points worse compared to 2015 and resulting in a downward rank change of one position.



Pace passenger miles decreased 14% in 2016, the most of the peer group, but Pace's fare revenue dropped by 19%, resulting in a decrease of $0.01 fare revenue per passenger mile. There were no position changes among the peers for the year.



Pace saw a significant improvement for this metric in 2013, 2014, and 2015, but had a 9.8 percentage point decrease in 2016 as fare revenue losses exceeded the decrease in operating cost. Houston also saw a lower fare recovery ratio compared to 2015, as it experienced declining ridership and program participation. King County and LA METRO are able to sustain very high recovery ratios through the extensive use of subsidies to offset participant fares.

ADA PARATRANSIT

The peers selected for Pace ADA paratransit and demand-response service were chosen from systems that provide region-wide complementary ADA paratransit service for a fixed-route system of similar size and complexity as the combination of Pace and CTA services that exists in the Chicago area. Fixed-route systems that provided both bus and heavy rail service were examined and as a result, the peers for ADA paratransit service closely mirror the CTA peers. The MTA in Baltimore was included because it is a region-wide provider of ADA paratransit service for a multi-modal fixed-route system.

The NTD category "demand-response" includes services that are initiated through a passenger request. These services encompass ADA paratransit programs, which are operated on smaller vehicles and use a reservation system, as well as programs such as Pace's dial-a-ride program, which is a pre-arranged trip service not restricted to ADA-certified passengers, but supporting similar community goals of providing fuller transportation access. Pace reports its ADA paratransit service as a separate entity from its demand-response service; therefore, two types of comparison were conducted for Pace's demand-response services: one reporting ADA service by itself and one reporting combined ADA paratransit and dial-a-ride (DAR) services. This report will focus mainly on Pace's ADA paratransit program, which continued to compare favorably to its peers, performing at or above the peer average for nine of ten measures.

Peer Comparison

Service Area	Performance Measure	Performs better than peer average			
		ADA		ADA/DAR	
		2015	2016	2015	2016
Coverage	Passenger Trips per Vehicle Revenue Hour	YES	YES	YES	YES
	Passenger Trips per Vehicle Revenue Mile	EQUAL	EQUAL	YES	YES
Efficiency and Effectiveness	Operating Cost per Vehicle Revenue Hour	YES	YES	YES	YES
	Operating Cost per Passenger Trip	YES	YES	YES	YES
	Operating Cost per Passenger Mile	YES	YES	YES	YES
Maintenance & Capital Investment	Average Age	YES	YES	YES	YES
	Miles between Major Mechanical Failures	NO	NO	NO	NO
Solvency	Fare Revenue per Passenger Trip	YES	YES	EQUAL	EQUAL
	Fare Revenue per Passenger Mile	EQUAL	EQUAL	EQUAL	EQUAL
	Fare Recovery Ratio	YES	YES	YES	YES

Peer Modal Characteristics

The following chart separates Pace ADA paratransit and dial-a-ride services as separate entities. Pace dial-a-ride service has varying eligibility criteria as determined by the community sponsoring the service; it may be open to the general public or limited to senior and disabled riders. Each of the peers represented restricts service to ADA-certified passengers only. After ranking second in 2015, Pace returned to third-largest ADA paratransit service operator in terms of passenger trips in 2016, displaced by Access Services in Los Angeles.

ADA Paratransit Overview

Modal Characteristics	Pace ADA Chicago	Pace DAR Chicago	MTA Baltimore	MBTA Boston	NYCT New York	Access LA	WMATA Washington, DC
Service Area Population	6,632,399	5,630,238	7,811,145	3,109,308	8,550,405	11,638,106	3,719,567
Service Area (square miles)	1,333	3,519	2,560	3,244	321	1,621	950
Population Density	4,976	1,600	3,051	958	26,637	7,180	3,915
Vehicle Revenue Miles	34,257,730	5,102,414	19,532,816	17,828,666	48,814,480	38,024,174	20,734,467
Vehicle Revenue Hours	2,385,939	333,363	1,385,936	1,273,984	4,866,273	2,284,107	1,989,000
Passenger Trips	4,116,466	1,105,654	2,565,314	2,187,785	6,316,903	4,293,380	2,281,044
Passenger Miles	39,122,216	6,911,793	23,469,100	17,047,364	56,308,809	55,743,630	18,903,138
Operating Cost	$150,930,181	$24,063,770	$91,106,555	$102,005,012	$467,083,460	$141,264,735	$116,176,803
Fare Revenue	$10,784,537	$1,945,283	$3,583,403	$6,004,661	$12,854,659	$9,640,950	$9,156,404
Capital Funds Expended	$0	$0	$7,074,598	$0	$356,165	$3,619,472	$1,733,419
Average Speed (miles per hour)	14.4	15.3	14.1	14.0	10.0	7.8	10.4
Average Trip Length (miles)	9.5	6.3	9.1	7.8	8.9	13.0	8.3
Average Vehicle Passenger Capacity	9.6	13.8	7.4	6.7	4.5	1.7	3.5
Average Vehicle Age (years)	2.6	5.5	4.2	4.0	4.4	3.5	3.6
Vehicles Operated in Maximum Service	940	318	493	612	1,794	1,955	917

Modal Characteristics Highlights

Vehicle Revenue Miles: In 2016, Pace ADA Paratransit had its first year-over-year decreased vehicle revenue miles since 2010, down 1.0%. MBTA and NYCT saw steeper declines of 6.9% and 9.7%, respectively.

Passenger Trips: Pace ADA Paratransit ridership was down 1.3%, and NYCT saw a ridership decrease of 4.9%. Other peers saw ridership increases ranging from 1.8% at MBTA to 6.0% at Access Services.

Operating Cost: Pace's operating cost decreased by 1.6% in 2016, commensurate to the ridership decrease; Pace was the only agency to see an operating cost decrease although NYCT had also had a ridership decrease from 2015.

Fare Revenue: Pace ADA Paratransit fare revenue rose by 1.5% in 2016 while Pace Dial-a-ride services experienced a 0.7% decrease in fare revenue. MBTA was the only agency to implement a fare increase, by $0.15, in 2016.

Capital Funds Expended: Pace ADA incorporates its capital costs for vehicles in the purchased transportation contracts with the vendors who provide both service and the vehicles. As a result, there is no separate reporting of capital costs for the ADA paratransit program. Among its peers, capital fund expenditures ranged from $0 at MBTA to over $7 million at MTA (Baltimore).

Average Speed: Pace ADA paratransit service offered the second-highest average speed at 14.4 miles per hour versus the peer average of 13.0 miles per hour.

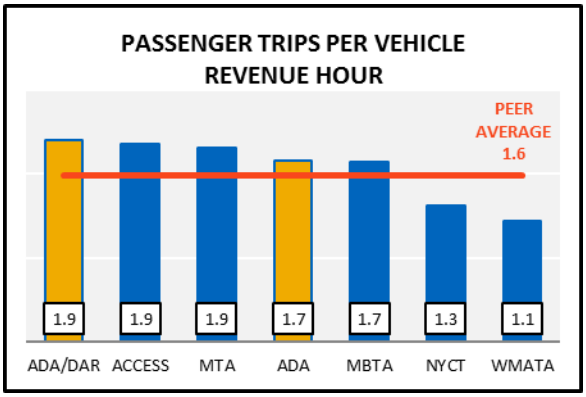
Average Trip Length: Pace ADA passengers rode an average trip length of 9.5 miles, roughly equal to the peer average.

Average Vehicle Passenger Capacity: Pace uses vehicles with an average passenger capacity of 9.6, compared to a peer average of 4.8.

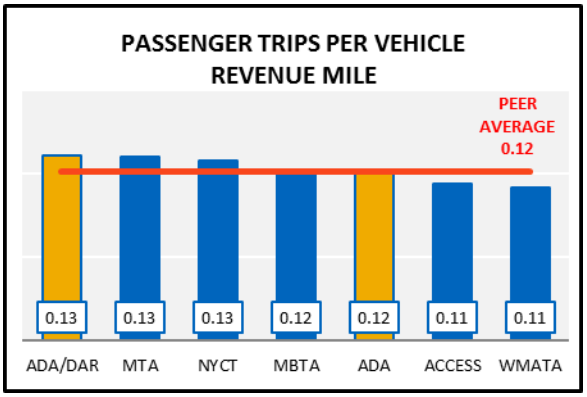
ADA PARATRANSIT

Service Coverage

In terms of passenger trips, the Pace ADA paratransit program is the third-largest among its peers, with New York having the largest program in the country. By itself, the ADA paratransit program provided 4.1 million passenger trips in 2016; combined with dial-a-ride service, the Pace demand-response service provided 5.2 million passenger trips. Rank position for passenger trips per vehicle revenue hour remained unchanged from 2015 although ADA Paratransit performance for this measure decreased 1.1%. ADA Paratransit and Dial-a-Ride service each saw a 0.3% decrease for passenger trips per vehicle revenue mile, but ADA Paratransit lost one rank position for this measure which has limited variation among peer performance.



Pace ADA paratransit ridership was down 1.3% in 2016, and service hours were down 0.2%. This produced an unfavorable service efficiency result but kept Pace at the same rank position as 2015. The combination of ADA/DAR service was the most effective at 1.9 passenger trips per vehicle revenue hour.

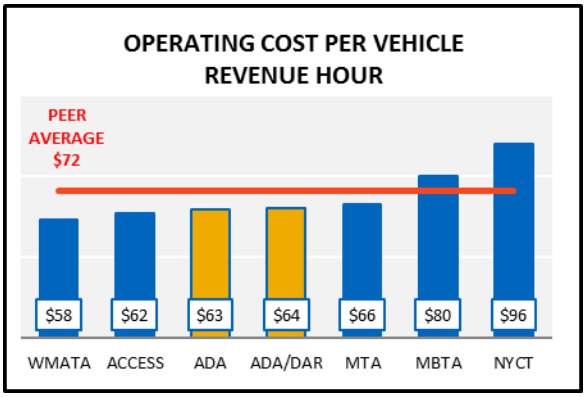


Pace maintained identical results to 2015, but ADA lost one rank position to MBTA. The range of results for this measure varies by slightly more than two-hundredths of one passenger trip, illustrating that Pace and its peers are about equally effective at scheduling these notably expensive passenger trips.

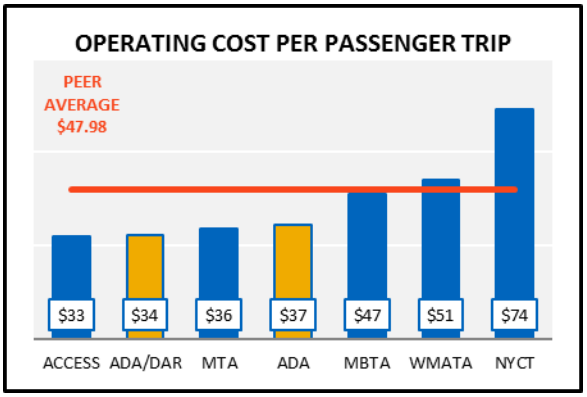
ADA PARATRANSIT

Service Efficiency and Effectiveness

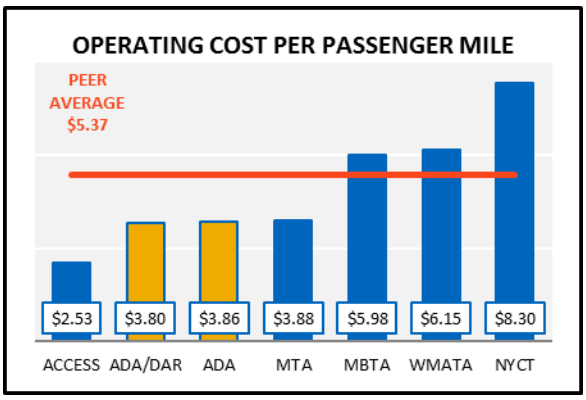
The Pace ADA paratransit program saw a decrease in several elements of service coverage in 2016: vehicle revenue hours (-0.2%), vehicle revenue miles (-1.0%), and ridership (-1.3%), but passenger miles traveled increased (+0.3%). Dial-a-ride service saw decreases for each element: vehicle revenue hours (-4.8%), vehicle revenue miles (-3.4%), passenger trips (-3.7%), and passenger miles traveled (-3.2%).



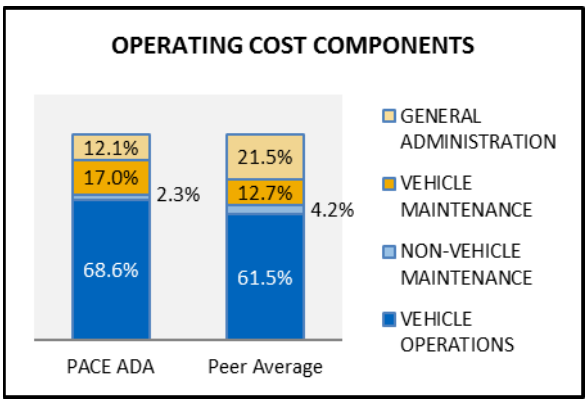
Pace was the only agency to have lower operating cost in 2016; ADA cost per vehicle revenue hour was 1.4% lower in 2016, displacing MTA for third place ranking. At $63.26, Pace ADA cost per hour was 12.6% favorable to the peer average of $72.41.



Pace ADA Paratransit maintained its position among peers by reducing its operating cost per passenger trip by $0.10 to $36.66, 23.6% below the peer average. NYCT paratransit skews the peer average for this measure with annual operating expenses exceeding $460 million.



Pace gained one rank position for this measure as MTA experienced a 2016 ridership loss of 4.9% and moved down one position. Pace ADA Paratransit's operating cost of $3.86 per passenger mile is 28.1% below the peer average.

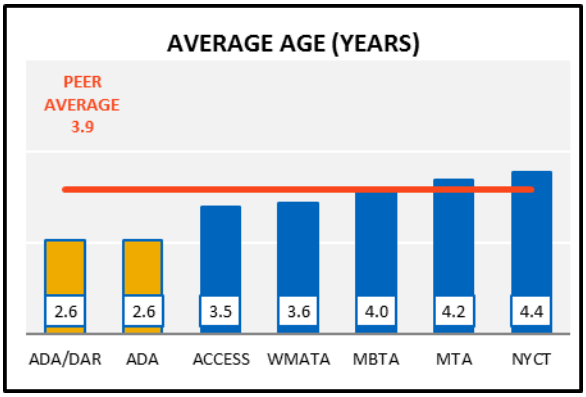


Pace ADA Paratransit service expends a larger proportion of its budget on vehicle operations and maintenance compared to the peer average, and has less than average on non-vehicle maintenance and administration.

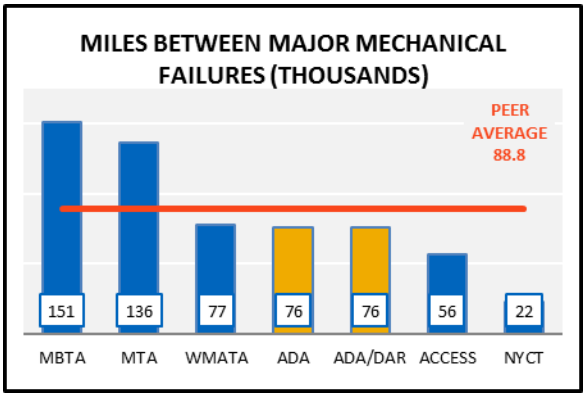
ADA PARATRANSIT

Service Maintenance and Capital Investment

Pace fleet vehicles ranked as the youngest of its peers, for the third consecutive year. Pace experienced a significant improvement in the number of miles between major mechanical failures and improved one rank position for this metric.



The average age of Pace vehicles increased by 0.2 years in 2016. With the exception of twelve buses dedicated to dial-a-ride service, Pace ADA Paratransit and dial-a-ride programs share vehicles, so the combined average age of the vehicles is the same.

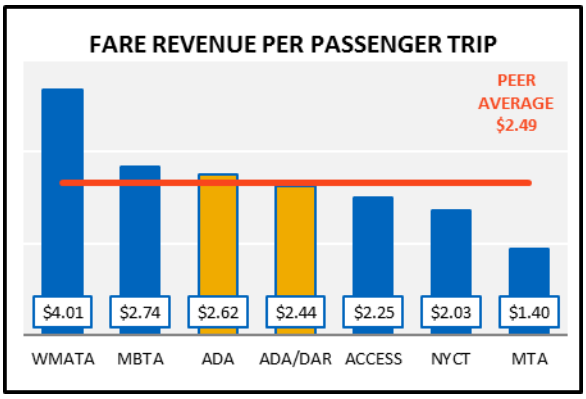


Pace ADA Paratransit service experienced a favorable 40.5% gain in miles between major mechanical failures in 2016, with fewer failures spread over roughly equal vehicle miles traveled. At 14% below the peer average, Pace ADA Paratransit improved by one rank position to fourth, Pace's highest ever rank for this measure.

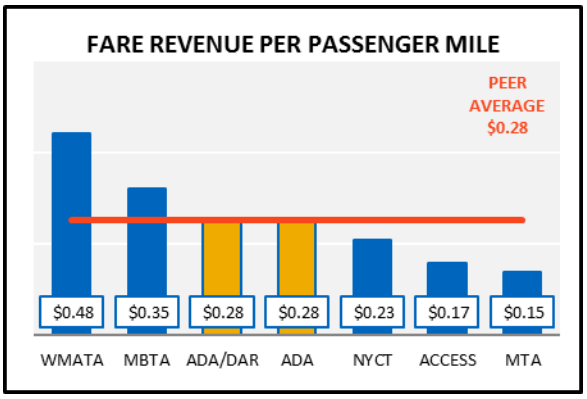
ADA PARATRANSIT

Service Level Solvency

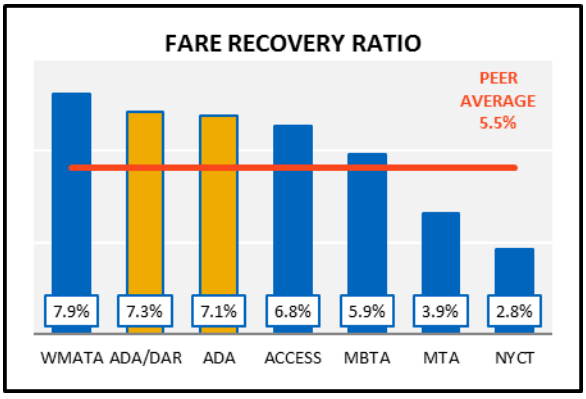
In the absence of a fare increase, Pace experienced gains in fare revenue as ridership decreased and operating cost was reduced. Thus, an improvement was noted for fare revenue per passenger trip, fare revenue per passenger mile, and the fare recovery ratio. Pace ADA's rank position remained unchanged for all three solvency measures.



There were no ranking changes for any of the agencies in 2016. The average fare paid for Pace ADA Paratransit services increased by $0.07, exceeding the peer average of $2.49. The Pace average fare is below its official $3.00 fare because approved ADA companions ride free of charge, a practice also followed by peers.



Pace ADA Paratransit fare revenue increased $0.02 per passenger mile, yet maintained its rank position as it equaled the peer average. The peer average is skewed by the higher fares charged by WMATA, which can be as high as $6.50 per trip.



The ADA paratransit fare recovery increased by 0.2 percentage points and remained higher than the peer average of 5.5%, while the combined ADA/DAR recovery ratio also improved by 0.4 percentage points. ADA and ADA/DAR each maintained rank positions held in 2014 and 2015. WMATA has maintained top ranking for this measure, as fares are variable and based on zones and time of day.

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