FY01 – FY04 Performance Audit
Final Report

to

METROPOLITAN TRANSIT AUTHORITY OF HARRIS COUNTY

on

PERFORMANCE INDICATOR RESULTS

Prepared by

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in association with

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I. INTRODUCTION

BOOZ ALLEN HAMILTON, WORKING CLOSELY WITH HOUSTON METRO STAFF, CONDUCTED THE FY01-FY04 PERFORMANCE AUDIT OF HOUSTON METRO

- Quadrennial performance audits are mandated by Section 451.454 of the Texas Transportation Code

- The purpose of the performance audit is to provide:
  - Evaluative information necessary for state and local officers to perform oversight functions
  - Information useful to METRO for improving the efficiency and effectiveness of their operations

- The performance audit is required to assess METRO's:
  - Collection and compilation of the base statistics and measurement of specified performance indicators
  - Compliance with applicable state law
  - Performance in one of three areas (i.e., administration and management, transit operations, or system maintenance)

- This report summarizes the results of the performance indicator assessment for Fiscal Years 2001, 2002, 2003 and 2004, the period from October 1, 2000 through September 30, 2004. The results of the compliance review and the functional review of transit operations that has been conducted for this performance audit are presented in separate reports

THE AUDIT SCOPE INCLUDES DATA VERIFICATION AND REVIEW OF PERFORMANCE INDICATORS

- Data verification assesses the degree to which data reporting methods conform to State definitions for the statistics used to calculate performance measures

- Performance indicator validation determines whether each of the following indicators is correctly calculated and reported:
  - Operating cost per passenger
  - Operating cost per revenue hour
  - Operating cost per revenue mile
  - Sales and use tax receipts per passenger
  - Fare recovery ratio
  - Average vehicle occupancy
  - On-time performance
  - Accidents per 100,000 total miles
  - Number of miles between mechanical road calls

- In addition, performance indicator trends have been reviewed and discussed with staff and are highlighted in this report

THE PERFORMANCE AUDIT TEAM CONDUCTED INTERVIEWS WITH KEY STAFF, TOURED MAJOR FACILITIES, AND REVIEWED DOCUMENTS AND DATA

- Interviews were conducted with METRO's President and with personnel who are knowledgeable of data collection and reporting and performance trends:

  - Director of Maintenance Support
  - Director, Operations Management Support
  - Director of Transportation Programs
  - Director, Treasury Services
  - Manager, Operations Management Analysis
  - Manager, Quality Assurance
  - Manager, Safety & Training
  - Manager of Scheduling
  - Manager, Service Evaluation
  - Quality Assurance Inspector
  - Staff, Office of Management & Budget
  - Transportation Programs Administrator

THE PERFORMANCE AUDIT TEAM COMPLETED AN EXTENSIVE REVIEW OF DOCUMENTS AND DATA

- Documents reviewed for the performance indicator assessment include:
  - Annual budgets
  - Database of operating and financial statistics maintained by the Office of Management and Budget
  - Monthly and year-end financial and operating reports to Board of Directors
  - Data collection and reporting documents provided by METRO staff

- The audit team responsible for the performance indicator assessment also visited Metro facilities: METRO offices at the Louisiana Street building and the Kashmere bus operating facility

METRO PROVIDES BUS, LIGHT RAIL, AND DEMAND RESPONSE SERVICE IN THE HOUSTON METROPOLITAN AREA

- METRO provides transit service within a 1,285 square mile service area that includes the City of Houston and fourteen other cities, primarily within Harris County but also extending to portions of adjacent counties. METRO has a nine-member Board of Directors and close to 3,800 salaried and hourly employees
- METRO's bus services carry over 87 million passenger trips annually throughout greater Houston with a fleet of over 1,500 vehicles:
  - METRO has 130 local and commuter bus routes, 17 transit centers, and 27 park-and-ride lots. METRO also runs special event services in partnership with event sponsors, such as RodeoHouston, the Houston Livestock Show, and the Shell Open
  - Bus services are partially directly operated and partially operated under contract. METRO has nine Operations & Support facilities for its directly operated services. The service contractor operates from a separate operations facility that is also owned by METRO
- METRO's light rail service began operations in January 2004, and carried over 5 million passenger trips during the first nine months of service, with an 18-vehicle fleet. The line runs 7.5 miles and serves 16 stations, linking Downtown, Midtown, the Museum District, Hermann Park, the Texas Medical Center (TMC), and Reliant Park
- METRO's demand response service provides pre-scheduled, curb-to-curb shared-ride transportation for persons with disabilities. About 1.5 million passenger trips were carried in FY04 with a fleet of 118 vans, augmented by additional taxi service

METRO HAD SEVERAL MAJOR ACCOMPLISHMENTS DURING THE AUDIT PERIOD

- A major accomplishment for METRO during the audit period was implementation of its light rail system in January 2004. The system began service almost ten months ahead of the original schedule and in time to provide service for the Super Bowl. Bus routes were restructured to feed the rail system and to enhance system efficiency

- METRO reduced its bus accidents and service interruptions significantly during the audit period. METRO also received the Model Program Award for its Bus Operator Recertification Program from the National Transit Institute

- METRO worked on a number of technology initiatives during the audit period:
  - METRO began using Automatic Passenger Counters (APCs) on its light rail services in FY04
  - METRO is planning to complete its Integrated Vehicle Operations Management System (IVOMS) in 2005. IVOMS' Intelligent Transportation Systems (ITS) components (automatic vehicle location, vehicle tracking, bus stop annunciation, and transit signal priority) are expected to enhance METRO's bus service efficiency and safety

- METRO completed its METRO Solutions Transit System Plan, which was brought to a vote in November 2003 and was approved by nearly 52 percent of voters, authorizing METRO to implement new light rail extensions and expand its local and express bus services over the next twenty years. The two-year planning process involved extensive public input

METRO ALSO ENCOUNTERED CHALLENGES DURING THE AUDIT PERIOD

- METRO's operating costs grew faster than the rate of inflation in the Houston area during the audit period:
  - Transit operators, including METRO, are impacted by many cost escalation factors that are outside their direct control (e.g., fuel, liability coverage, mandated employee benefits, and air quality regulations). Therefore, keeping the cost of doing business in line with the overall inflation rate may not be a realistic outcome, but a worthy objective
  - This audit recognizes that METRO has taken aggressive actions to control operating cost growth by limiting wage increases with its August 2002 labor agreement, gaining efficiencies in its pay-to-platform hours, and focusing on reducing accidents, service interruptions and employee on-the-job injuries

- METRO ridership declined during the audit period. Staff report that this is a result of:
  - Route realignments and detours made to accommodate street construction in the downtown, midtown and TMC areas. METRO is working in cooperation with other agencies on the Downtown/Midtown Transit Streets Project, which will modernize the street network in central Houston. The project is scheduled for completion in 2005
  - Bus service changes made following the introduction of light rail. Bus ridership fell during the adjustment period, but rail ridership more than offset the drop in bus boardings
  - A general decline in economic conditions in the Houston region. The decline was accelerated in Houston by the impact of the events of September 11, 2001 on major businesses in the area (e.g., Continental Airlines) and Enron's collapse on employment and the energy business in Houston

THE REMAINING SECTIONS OF THIS REPORT PROVIDE THE RESULTS OF THE PERFORMANCE INDICATOR REVIEW

- **Section II: Compliance with State-Required Data Items** – includes the verification of METRO's compliance with State-mandated data collection and reporting definitions for eleven data items

- **Section III: State-Required Performance Indicators** – provides an assessment of METRO's performance over the audit period as measured by State-mandated performance indicators

- **Section IV: Findings and Recommendations** – identifies opportunities to improve compliance with State requirements with respect to reporting performance indicators and improving performance trends

- **Appendix A** – provides the annual data used in calculating the performance indicators as well as the annual performance measures

- **Appendix B** – provides the performance indicators by mode, including two additional service effectiveness indicators (passengers per revenue hour; passengers per revenue mile) that are frequently reported as a basis for evaluating performance in the transit industry

II. COMPLIANCE WITH STATE-REQUIRED DATA ITEMS

DATA USED TO DEVELOP STATE-MANDATED PERFORMANCE MEASURES WERE REVIEWED TO ENSURE COMPLIANCE WITH DEFINITIONS AND TO VALIDATE COLLECTION PROCEDURES

- The data items used to calculate the required performance indicators include the following:
  - Operating cost
  - Passenger fare revenues
  - Sales and use tax receipts
  - Passenger trips
  - Revenue vehicle hours
  - Revenue vehicle miles
  - Total vehicle miles
  - Passenger miles
  - Accidents
  - Road calls
  - On-time performance

- Data were provided by and discussed with METRO staff. The audit team confirmed that collection and reporting procedures provide data that comply with State definitions

- METRO complies with State reporting requirements for the data items used in the State-required performance measures

- The definitions and methodologies used by METRO for each data item are described on the following pages

OPERATING COST

- **Definition** – Operating cost includes an authority's cost of providing public transit service, including the cost of purchased transit service not performed by an authority, but excluding depreciation, amortization and capitalized charges, charter bus operations cost, and costs associated with coordination of carpool and vanpool activities

- **Methodology** – METRO maintains a computerized chart of accounts suitable to capture expenses and revenues by object class. Direct expenses are entered directly into appropriate expense accounts for each responsibility center

  A cost allocation model is used to allocate METRO's operating costs by account between METRO's service modes (bus, light rail, demand response). The allocation is based on service quantities that include ridership, vehicle hours, and vehicle miles

- **Assessment** – METRO is in full compliance with the data collection and reporting of operating cost as defined by the State of Texas

PASSENGER FARE REVENUE

- **Definition** – Passenger fare revenue is defined as revenues provided by passengers of revenue vehicles of an authority or the sponsors of those passengers, and includes revenue received from cash fares, passes, tokens, tickets and route guarantees. Passenger fare revenues exclude charter revenues and non-farebox revenue such as advertising income, interest income and other non-farebox operating sources

- **Methodology** – METRO collects, counts and reports fare revenue on a daily basis. On motorbuses, registering fareboxes provide the data to reconcile ridership and revenue. Demand response fares are accounted for by the contractor and submitted to METRO on a monthly basis. Pre-paid sales and fare revenue from ticket vending machines located in rail stations are tracked separately

  Revenue received from special event bus services, as negotiated upfront with other organizations, are recorded separately in sponsored revenue accounts, and treated as an offset to the costs of operating special event services

- **Assessment** – METRO is in full compliance with the data collection and reporting of passenger fare revenue as defined by the State of Texas

SALES AND USE TAX RECEIPTS

- **Definition** – Sales and use tax receipts of an authority

- **Methodology** – Harris County, the City of Houston, and 14 cities that comprise the METRO service area collect a one cent sales tax that is used to fund public transportation and associated improvements. The sales tax applies to certain consumer items and is collected by the State and allocated to METRO on a monthly basis

- **Assessment** – METRO is in full compliance with the data collection and reporting of sales and use tax receipts as defined by the State of Texas

PASSENGER TRIPS

- **Definition** – Passenger trips are the total of all passenger boardings, including transfers between buses, but excluding charter passengers, and carpool and vanpool passengers whose trips are only coordinated by an authority

- **Methodology** – METRO uses different methodologies to collect ridership data for each mode:
  - Bus: Passenger trips are counted via electronic registering fareboxes, which record all customer boardings. Traffic checkers are also employed to sample passenger volumes and to verify counts derived from registering fareboxes. Validation checks are performed on registering farebox data, and errors and missing data are corrected. Reports are prepared on ridership by line, service type, day and month
  - Light Rail: Automated passenger counters (APCs) count passengers as they board and alight from each car
  - Demand Response: Passenger trips are derived from a 100 percent count, obtained from the scheduling system, adjusted for cancellations and no-shows
  - Special Events: Special event bus ridership is derived from a 100 percent count

- **Assessment** – METRO is in full compliance with the data collection and reporting of passenger trips as defined by the State of Texas

REVENUE VEHICLE HOURS AND MILES

- **Definition** – The total scheduled hours and miles that a revenue vehicle is in revenue service. A revenue vehicle is one that carries paying passengers in scheduled service and is operated by an authority or as a purchased service. Revenue service means the time that a revenue vehicle is in operation to carry passengers, other than charter passengers

- **Methodology** – METRO uses different methodologies to collect revenue hours and miles for each mode:
  - Bus: Revenue vehicle hours and miles are developed from scheduled revenue hours and miles from scheduling/fueling systems (i.e., Trapeze and MMS within SEMA). Dispatchers record adjustments for missed service or detours on a daily basis. Quality Assurance staff verifies data on a monthly basis
  - Light Rail: Revenue vehicle hours and miles are based on scheduled daily revenue trips with adjustments made for variations to the schedule. This information is recorded in the M4 system
  - Demand Response: Drivers track the time that passengers are on a vehicle, and this is reported as revenue vehicle hours. Revenue vehicle miles are recorded from odometers, and adjusted to exclude deadhead
  - Special Events: METRO records the revenue vehicle hours/miles for each special event service on an actual basis

- **Assessment** – METRO is in full compliance with the data collection and reporting of revenue vehicle hours and miles as defined by the State of Texas

TOTAL VEHICLE MILES

- **Definition** -- Total vehicle miles are the annual total number of miles for all service directly operated by an authority, including charter service and non-revenue service

- **Methodology** – METRO uses different methodologies to collect total miles for each mode:
  - Bus: Total vehicle miles are taken via FleetWatch from hubometer readings on revenue vehicles, and then entered into SEMA. This number is compared with a figure calculated by taking the daily fuel load and multiplying it by the average miles per gallon for that vehicle
  - Light Rail: Total vehicle miles are tracked via the M4 system, based on scheduled daily total mileage with adjustments made for variations to the schedule
  - Demand Response: Total vehicle miles are tracked by the contractor and reported to METRO on a monthly basis, based on odometer readings
  - Special Events: METRO records the total vehicle miles for each special event service on an actual basis

- **Assessment** – METRO is in full compliance with the data collection and reporting of total vehicle miles as defined by the State of Texas

PASSENGER MILES

- **Definition** – Passenger miles are derived by multiplying annual unlinked passenger trips by the average distance ridden by passengers during the same time period

- **Methodology** – METRO reports passenger mile information through procedures specified by the Federal Transit Administration's (FTA) National Transit Database (NTD) requirements
  - Bus: Passenger miles are calculated by multiplying the number of passenger boardings by the average trip length for each type of service. Average trip distance is derived from a random sampling of trips within each service category. These calculations are verified through route checks that meet FTA requirements for sampling accuracy
  - Light Rail: Passengers are counted using APCs and passenger miles are calculated by multiplying the number of passengers by the average trip length (also derived from APC data). Passenger miles are regularly compared to historical data
  - Demand Response: Passenger miles are calculated by multiplying the actual number of passengers (100 percent count) by the average trip length (which is determined from the scheduling database)
  - Special Events: Special event passenger miles are derived from a 100 percent count

- **Assessment** – METRO is full compliance with the data collection and reporting of passenger miles as defined by the State of Texas

ACCIDENTS

- **Definition** – Accidents include: (1) All collisions that involve an authority's revenue vehicle, other than a lawfully parked revenue vehicle, and that results in property damage, injury, or death; and (2) incidents that result in the injury or death of a person on board or boarding or alighting from an authority's revenue vehicle. The State definition requires agencies to report accidents for directly operated vehicles only

- **Methodology** – Initial accident data and information are based on reports filed by operators of revenue vehicles and supervisors. These reports are supplemented by reports received from witnesses and claimants. Accidents are divided into collision and non-collision categories with details by accident location, types of collision accidents, and results in terms of personal injuries/deaths and property damage. Final report information is based on the investigations and assessments of METRO's claims representatives

  METRO maintains records on accidents for directly operated services according to the State definition (includes all accidents, regardless of the amount of damage), the old FTA standard in place prior to 2002 (incidents resulting in a fatality, injury, a non-arson fire, or transit property damage valued at greater than $1,000), and the new NTD definition established in 2002 (similar to the old FTA standard, with the property damage threshold adjusted to $7,500 or more)

  Accident data are reported to the METRO Board on a monthly basis, using both the old FTA standard and the new NTD definition of an accident, not the State definition

- **Assessment** – Although METRO does not report accidents by the State definition, the Authority tracks and maintains the data. METRO is therefore in full compliance with the data collection and reporting of accidents as defined by the State of Texas

MECHANICAL ROAD CALLS

- **Definition** – Mechanical road calls are defined as an interruption in revenue service caused by equipment failure of a revenue vehicle that requires assistance from someone other than the vehicle operator before the vehicle can be operated normally. The state definition requires agencies to report road calls for directly operated vehicles only

- **Methodology** – METRO's road call information is comprehensive and categorized by type, including road calls for mechanical problems, fleet defects and warranty issues. The categorization of road calls assists METRO management. For example, the data are used to compare individual garage performance using road calls for mechanical problems, but excluding road calls that involve fleet defects and warranty issues that are not necessarily under the control of each garage and do not provide a good basis to compare garage performance

  For the METRO Board, staff reports service interruptions, which METRO defines to include any incident that interrupted revenue service for one minute or longer. This broader definition better reflects actual service impacts on customers

- **Assessment** – Although METRO does not typically report mechanical road calls independently of other causes of service interruptions, the Authority tracks and maintains the State-required data. METRO is therefore in full compliance with the data collection and reporting of mechanical road calls as defined by the State of Texas

ON-TIME PERFORMANCE

- **Definition** – On-time performance means the percentage of revenue vehicle trips that depart from selected locations at a time not earlier than the published departure times and not later than five minutes after the published departure time

- **Methodology** – METRO has continued to follow its on-time performance measurement system that was initiated in FY97 and designed by a statistician to more accurately sample and report all time points systemwide for both directly operated and contracted fixed route bus service. Different methodologies are used for each mode:
  - Bus: Based on a sampling of 485 time points drawn randomly from all time points for the month, including weekdays, Saturdays, and Sundays, for both directly operated and contracted services. This methodology yields results with 95 percent confidence and +/- 5 percent accuracy. Supervisors check assigned time points for on-time performance and submit results to a central point for analysis and reporting. On-time performance is reported monthly for both directly operated service and contracted services
  - Light rail: Scheduled departure times are not published for the light rail system. On-time performance is calculated based on actual vs. scheduled departure times from either end of the line
  - Demand response: Internally, on-time performance is reported monthly according to METRO's definition, but is not required according to the state definition, since there are no published departure times

- **Assessment** – METRO is in full compliance with the data collection and reporting of on-time performance as defined by the State of Texas

III. STATE-REQUIRED PERFORMANCE INDICATORS

SYSTEMWIDE AND MODAL PERFORMANCE INDICATORS HAVE BEEN VALIDATED AS A BASIS FOR DETERMING PERFORMANCE TRENDS

- Section 451.454 of the Texas Transportation Code requires that the performance audit include an examination of the following indicators over the audit period:
  - Operating Cost per Passenger: measure of cost effectiveness
  - Operating Cost per Revenue Hour: cost efficiency
  - Operating Cost per Revenue Mile: cost efficiency
  - Sales and Use Tax Receipts per Passenger: regional subsidization
  - Fare Recovery Ratio: share of costs from riders
  - Average Vehicle Occupancy: service productivity
  - On-Time Performance: service quality
  - Accidents per 100,000 Total Miles: service safety
  - Miles between Service Interruptions: service quality

- Each of these indicators is discussed in this section. Cost-based indicators have been calculated for METRO services systemwide as well as separately for bus, light rail, and paratransit services

- Performance indicators were calculated based on verified data and in compliance with State definitions. The raw performance statistics used to calculate the performance indicators are provided in the appendices to this report

SYSTEMWIDE AND MODAL PERFORMANCE TRENDS HAVE ALSO BEEN REVIEWED TO ASSESS THE EFFECTIVENESS AND EFFICIENCY OF METRO'S TRANSIT OPERATIONS

- Performance trends are also discussed in this section. The performance trends cover the period from FY01 through FY04, with FY00 used as a base year to provide a point of reference for the analysis. Cost-based indicators are compared to the change in the CPI-All Urban Consumers for the Houston-Galveston-Brazoria metropolitan area. The growth rates shown correspond to METRO's October 1-September 30 fiscal year

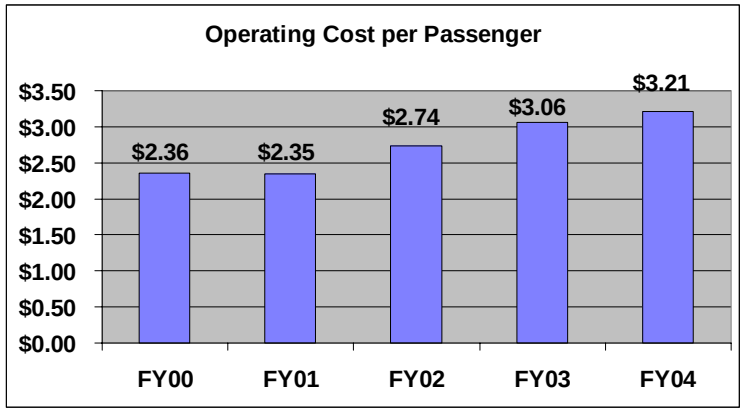
- Because the light rail service was introduced in January 2004 and has operated for less than a year, it is excluded from the trend analyses

- The performance trends discussed here provide a high level overview, and have been used as a starting point for the functional review of transit operations. Operating efficiency, effectiveness, and productivity trends are discussed at a more detailed level in that report

- Appendix A provides the raw data that was used to calculate each of the state-mandated performance indicators

OPERATING COST PER PASSENGER GREW MORE RAPIDLY THAN THE INFLATION RATE

- Operating cost per passenger is a measure of cost effectiveness:
  - Systemwide operating cost per passenger grew from **$2.36 in FY00** to **$3.21 in FY04**, an increase of 36.1 percent. The change in CPI was 10.0 percent from FY00 to FY04
  - For bus services, including directly operated and contracted services, operating cost per passenger grew from $2.20 in FY00 to $2.99 in FY04 (increase of 35.5 percent)



  - For demand response services, operating cost per passenger grew from $15.39 in FY00 to $19.42 in FY04 (increase of 26.2 percent)
  - Operating cost per passenger for the light rail mode was $2.31 for the nine months of service operated in FY04

THE SIGNIFICANT GROWTH IN OPERATING COST PER PASSENGER WAS A RESULT OF SEVERAL FACTORS

- Systemwide transit operating costs increased 29.1 percent, from **$235.7 million in FY00** to **$304.3 million in FY04**. Operating costs held fairly steady from FY00 to FY01, but increased steadily from FY01 through FY04

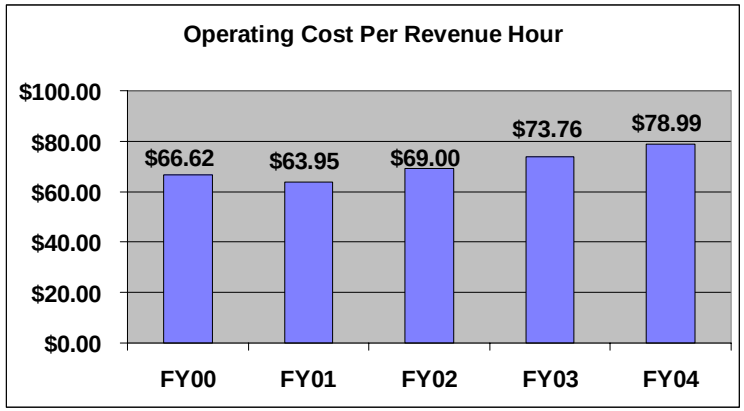
- As noted previously, some of METRO's costs over the audit period were impacted by factors that are outside of their direct control, including fuel, liability coverage, mandated employee benefits, and air quality regulations

- Systemwide transit passenger trips fell from **100.0 million in FY00** to **94.8 million in FY04**, a decline of 5.2 percent. Ridership grew slightly from FY00 to FY01, followed by two years of decline from FY01 to FY03. Ridership grew again from FY03 to FY04 as ridership on the new light rail system more than offset a loss in motorbus ridership

- Staff have attributed the declines in METRO ridership to factors such as route realignments and detours to accommodate street construction, route restructuring with the introduction of light rail, and the general decline in economic conditions in the region

OPERATING COST PER REVENUE HOUR ALSO GREW FASTER THAN THE INFLATION RATE

- Operating cost per revenue hour is a measure of cost efficiency:
  - Systemwide operating cost per revenue hour grew from **$66.62 in FY00** to **$78.99 in FY04**, an increase of 18.6 percent that also exceeded the 10.0 percent change in the CPI
  - For directly operated and contracted bus services, operating cost per revenue hour grew from $72.08 in FY00 to $84.17 in FY04 (increase of 16.8 percent)

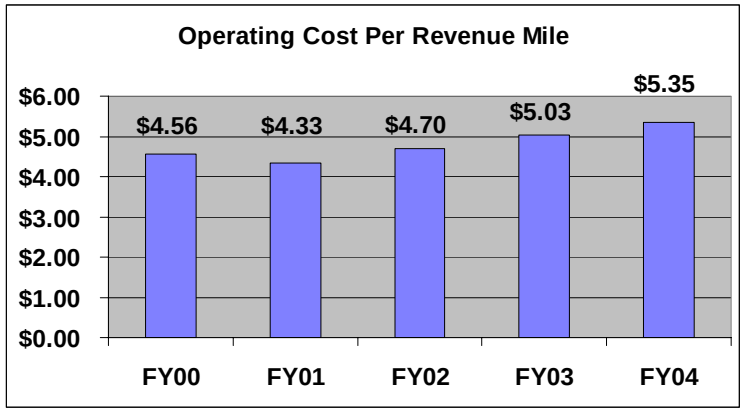


  - For demand response services, operating cost per revenue hour grew from $34.59 in FY00 to $42.29 in FY04 (increase of 22.3 percent)
  - Operating cost per revenue hour for the light rail mode was $304.68 in FY04

- The growth in operating cost per revenue hour was a result of these factors:
  - As indicated previously, systemwide operating costs increased from **$235.7 million in FY00** to **$304.3 million in FY04**, an increase of 29.1 percent
  - Systemwide revenue hours increased from **3.5 million in FY00** to **3.9 million in FY04**, but at a slower rate (8.9 percent) than the growth in operating costs. Bus revenue hours grew modestly from FY00 to FY02, and then dropped by about 48,000 hours through FY04. The new light rail service added about 40,500 revenue hours in FY04. Demand response revenue hours have grown by 175,000 (almost 34 percent)

OPERATING COST PER REVENUE MILE IS ANOTHER MEASURE OF COST EFFICIENCY

- Operating cost per revenue mile is another measure of cost efficiency:
  - Systemwide operating cost per revenue mile grew 17.4 percent, from **$4.56 in FY00** to **$5.35 in FY04**, and exceeded the 10.0 percent growth in the CPI
  - For directly operated and contracted bus services, operating cost per revenue mile grew from $5.23 in FY00 to $6.05 in FY04 (increase of 15.7 percent)

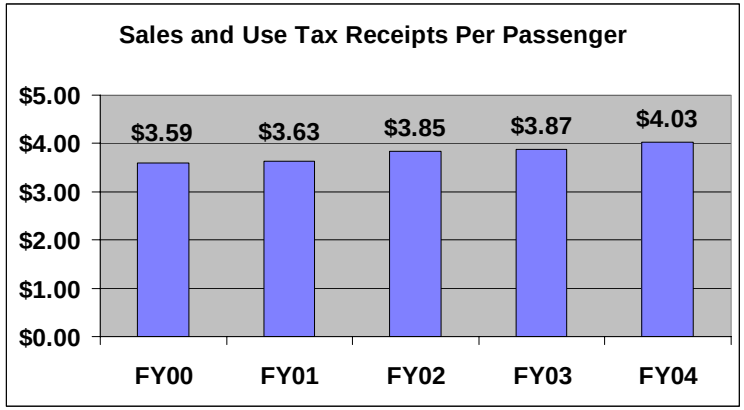


  - For demand response services, operating cost per revenue mile grew from $1.78 in FY00 to $2.26 in FY04 (increase of 26.8 percent)
  - Operating cost per revenue mile for the light rail mode was $25.81 in FY04

- The growth in operating cost per revenue mile was a result of these factors:
  - As indicated previously, systemwide operating costs increased 29.1 percent, from **$235.7 million in FY00** to **$304.3 million in FY04**
  - Systemwide revenue miles increased 10.0 percent from **51.7 million in FY00** to **56.9 million in FY04**, a growth rate that was greater than the growth in revenue hours, but still less than the growth in operating costs. Bus revenue miles grew from FY00 to FY01, and have held fairly steady since that time. The light rail service added about 478,000 revenue miles in FY04. Demand response revenue miles have grown each year during the audit period and by 2.9 million miles over the four years

SALES AND USE TAX RECEIPTS PER PASSENGER BOARDING IMPROVED AS THE LOCAL ECONOMY STRENGTHENED

- Sales and use tax receipts per passenger carried is a measure of METRO's regional subsidization. This measure grew from **$3.59 in FY00** to **$4.03 in FY04**, an increase of 12.1 percent, compared to the 10.0 percent increase in the CPI during the same period

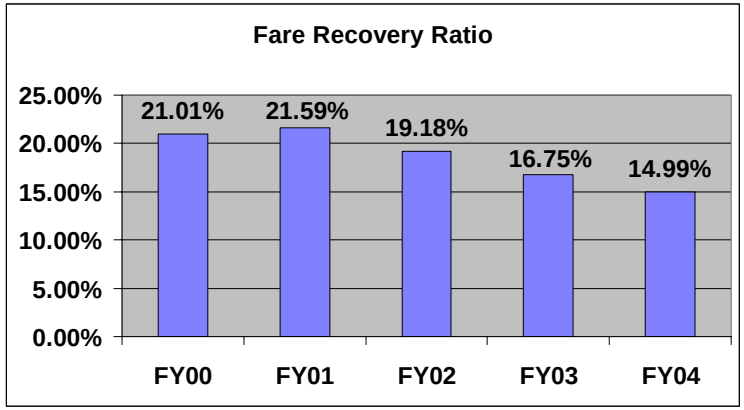


- On an inflation-adjusted basis, this measure demonstrated little growth over the audit period

- The trends in sales and use tax receipts per passenger reflect:
  - The growth in sales and use tax receipts, which increased 6.3 percent from **$359.3 million in FY00** to **$381.8 million in FY04**. Sales receipt growth was small from FY00 to FY02, and actually fell from FY02 to FY03 as a result of economic conditions in the Houston region. Sales tax receipts grew from FY03 to FY04 as the economy improved
  - The 5.2 percent decline in passenger boardings, from **100.0 million in FY00** to **94.8 million in FY04**. As a result, the regional subsidization per passenger trip has increased at a rate that is greater than the actual growth rate in sales and use tax receipts

THE FARE RECOVERY RATE DECLINED SIGNIFICANTLY AS TRENDS IN OPERATING COSTS AND PASSENGER REVENUE MOVED IN OPPOSITE DIRECTIONS

- The fare recovery rate is the percentage of METRO's operating costs that are derived from passenger revenues:
  - Systemwide, fare recovery fell from **21.0 percent in FY00** to **15.0 percent in FY04**, a decline of 28.6 percent
  - For directly operated and contracted bus services, fare recovery fell 28.9 percent, from 22.5 percent in FY00 to 16.0 in FY04

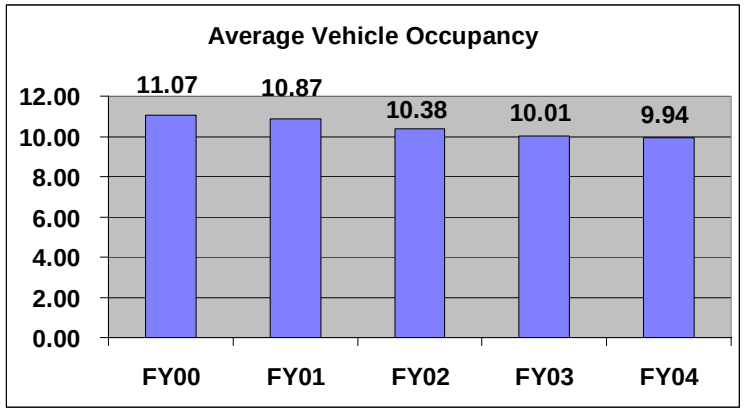


  - For demand response services, fare recovery increased, from 2.8 percent in FY00 to 3.5 percent in FY04. While demand response operating costs grew significantly, passenger revenue for this mode more than doubled from FY00 to FY04, offsetting the increase in operating costs
  - Fare recovery on the light rail line was 20.7 percent in FY04

- The sharp decline in fare recovery reflects the increase in operating costs and the decline in fare revenue:
  - Systemwide operating costs increased 29.1 percent, from **$235.7 million in FY00** to **$304.3 million in FY04**
  - Systemwide passenger trips fell from 100.0 million in FY00 to 94.8 million in FY04. Without a fare change, fare revenue fell 7.9 percent, from **$49.5 million in FY00** to **$45.6 million in FY04**

THE DECLINE IN AVERAGE VEHICLE OCCUPANCY REFLECTS THE RIDERSHIP TREND

- Average vehicle occupancy is a measure of vehicle utilization and productivity. It is measured by dividing total passenger miles by total revenue vehicle miles:
  - Systemwide average vehicle occupancy fell from **11.1 in FY00** to **9.9 in FY04**, a decline of 10.2 percent
  - For bus services, average vehicle occupancy fell 9.2 percent, from 13.4 in FY00 to 12.2 in FY04



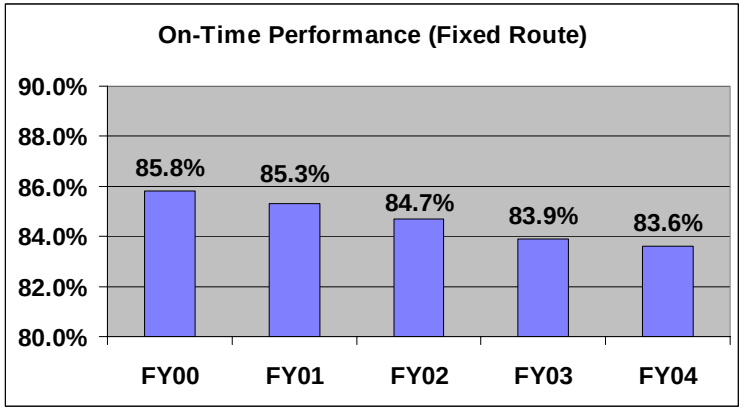
  - For demand response services, average vehicle occupancy increased 17.0 percent, from 1.2 in FY00 to 1.4 in FY04
  - Average light rail vehicle occupancy was 34.9 in FY04

- The drop in average vehicle occupancy was a result of previously described factors:
  - As systemwide boardings dropped 5.2 percent over the audit period, passenger miles declined 1.2 percent, from **572.3 million in FY00** to **565.3 million** in FY04. As a result, the average passenger trip length increased from 5.7 miles to 6.0 miles
  - While ridership and passenger miles dropped, systemwide revenue miles increased 10.0 percent, from **51.7 million in FY00** to **56.9 million in FY04**, depressing average vehicle occupancy

ON-TIME PERFORMANCE DECLINED DURING THE AUDIT PERIOD

- METRO reports on-time performance for its fixed route services as a whole (bus and rail). The state definition of on-time performance does not apply to METRO's demand response service

- Fixed route on-time performance fell from **85.8 percent in FY00** to **83.6 percent in FY04**, a 2.6 percent decline. The decline has been fairly steady from year to year



- The downward trend in on-time performance was due in large part to increasing challenges associated with the downtown street reconstruction project, which negatively impacted schedule adherence for a number of downtown Metro routes

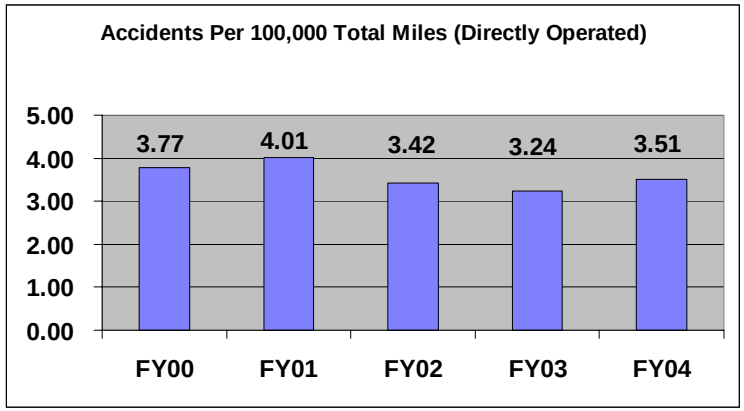
- Metro's on-time performance is likely to remain around 83 percent in FY05, as downtown street work will continue to impact transit operations. After FY05, when the reconstruction project is completed, Metro expects on-time performance to improve

- Introduction of the IVOMs system in 2005 will provide Automatic Vehicle Location (AVL) and signal prioritization, which will give Metro more direct control over on-time performance

- The introduction of light rail should also benefit schedule adherence, as many longer bus routes have been truncated and now feed the rail service. Longer routes tend to have greater running time variability and worse on-time performance

METRO'S ACCIDENT RATE (ACCIDENTS PER 100,000 MILES) IMPROVED AFTER FY01

- For directly operated service, accidents per 100,000 miles dropped from **3.8 in FY00** to **3.5 in FY04**, a 6.9 percent improvement:
  - Using the State's definition of accidents, the total number of bus accidents on directly operated service declined 13.6 percent, from **1,763 in FY00** to **1,523 in FY04**
  - There were 63 rail accidents that occurred in FY04



- Reducing the accident rate was one of METRO's major focuses during the audit period. METRO combined its safety and training functions into a single division, assigned a new division Director to lead safety and training activities, and introduced several new training programs

- The improvement in the accident rate is particularly noteworthy given that METRO hired a large number of new bus operators in 2001

THE STATE DEFINITION OF AN ACCIDENT IS BROADER THAN THE FTA DEFINITION

- FTA defines an accident as one or more of the following conditions:
  - A fatality, a non-arson fire, or a safety-related evacuation
  - One or more injuries requiring immediate medical attention away from the scene
  - A collision at a grade crossing or a mainline derailment
  - At least $7,500 in property damage (revised from the $1,000 threshold in 2002)

- The state defines an accident as:
  - Any collision that involves an authority's revenue vehicle, other than a lawfully parked revenue vehicle, and that results in property damage, injury, or death
  - Incidents that result in the injury or death of a person on board or boarding or alighting from an authority's revenue vehicle

- Both definitions include both preventable and non-preventable accidents. Since the state definition is more comprehensive than the FTA definitions, the number of bus accidents reported for this audit is considerably higher than the number METRO reported internally:

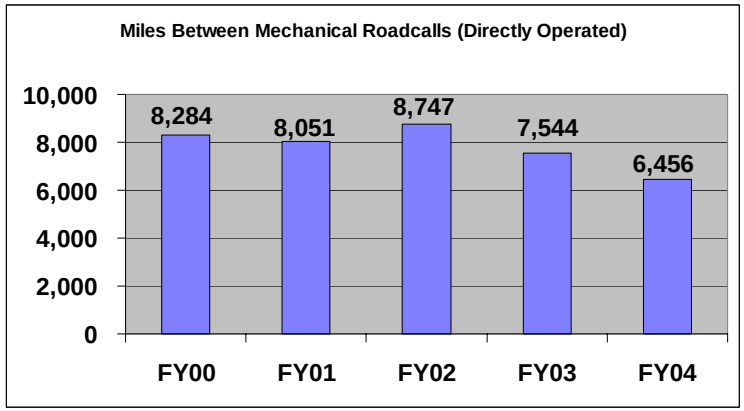
Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Motorbus Accidents (Directly Operated; Old FTA Def.)	558	594	471	412	371	-187
Percent Change		6.45%	-20.71%	-12.53%	-9.95%	-33.51%
Motorbus Accidents (Directly Operated; State Def.)	1,763	1,926	1,623	1,503	1,523	-240
Percent Change		9.25%	-15.73%	-7.39%	1.33%	-13.61%
% Difference (State Def. to Old FTA Def.)	**215.95%**	**224.24%**	**244.59%**	**264.81%**	**310.51%**	

Source: OMB Database for old FTA Definition numbers. Risk Management Division for State Definition numbers.

- For the nine months of light rail operations in FY04, there were 43 accidents according to the old FTA definition and 63 according to the state definition (a difference of 46.5 percent)

MILES BETWEEN MECHANICAL ROAD CALLS HAVE DECLINED SINCE FY02

- Miles between mechanical road calls for directly operated services fell from **8,284 in FY00** to **6,456 in FY04**, a 22.1 percent decline:
  - The total number of mechanical road calls on directly operated bus services increased by 23.4 percent, from **5,641 in FY00** to **6,959 in FY04**
  - The total number of reported light rail mechanical road calls was 35 in FY04



- METRO replaced many of its buses in 2001, which lowered the average fleet age, improved fleet performance, and reduced mechanical road calls by 8.9 percent in FY02. The number of road calls has increased since that time

INTERNALLY, METRO REPORTS SERVICE INTERRUPTIONS, WHICH PROVIDES A MORE MEANINGFUL INDICATION OF CUSTOMER PERCEPTIONS OF THE SERVICE

- METRO reports service interruptions in its Board Reports. A service interruption is defined as any incident that interrupted revenue service for one minute or longer
- The state definition of a mechanical road call is any interruption in revenue service caused by equipment failure of a revenue vehicle that requires assistance from someone other than the vehicle operator before the vehicle can be operated normally
- Service interruptions could be caused by factors such as warranty road calls, fleet defect road calls, and equipment failures that the vehicle operator is able to resolve – which would not be included as mechanical road calls. Mechanical road calls that were resolved in under one minute are not included as service interruptions
- Since the state definition of a mechanical road call differs from the METRO definition of a service interruption, the mechanical road calls reported for this audit are different from the service interruptions reported internally. While bus service interruptions have been trending down, bus mechanical road calls have been trending up:

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Motorbus Service Interruptions (Directly Operated)	9,207	9,210	7,288	7,364	7,264	-1,943
Percent Change		0.03%	-20.87%	1.04%	-1.36%	-21.10%
Motorbus Mechanical Road Calls (Directly Operated)	5,641	5,960	5,428	6,155	6,959	1,318
Percent Change		5.66%	-8.93%	13.39%	13.06%	23.36%
% Difference (Road Calls to Interruptions)	**-38.73%**	**-35.29%**	**-25.52%**	**-16.42%**	**-4.20%**	

Source: OMB Database for service interruptions. OMS Department for mechanical road calls.

- For the light rail service in FY04, there were 12 service interruptions and 35 mechanical road calls as defined by the state (difference of 191.7 percent)

IV. CONCLUSIONS AND RECOMMENDATIONS

METRO IS IN COMPLIANCE WITH DATA VERIFICATION AND PERFORMANCE INDICATOR REPORTING

- The audit team reviewed METRO's data definitions and data collection methodologies to verify that the base data used to develop the state-mandated performance indicators conform to State definitions

- METRO was found to be in compliance with all data collection and verification requirements. In two instances, METRO uses different definitions for internal reporting, but maintains the data needed to comply with State requirements:
  - Internally, METRO reports accidents using the old FTA standard and the current NTD definition rather that the State's definition of accidents. While the State requirement is to report all accidents with any property damage, the old FTA requirement limits reporting to those accidents where the property damage is greater than $1,000 (the current NTD definition uses a property damage threshold of $7,500). METRO does track and maintain the State-required accident data
  - METRO regularly reports service interruptions of a minute or longer, rather than using the State definition of mechanical road calls. METRO's service interruptions are broader in concept, including incidents that are not equipment related and equipment failures that are corrected by the operator. METRO does track and record the State-required mechanical road call data

METRO'S ACCIDENT RATE IMPROVED, BUT MOST OTHER INDICATORS EXHIBITED DECLINING PERFORMANCE

- METRO's accidents on its directly operated services declined during the audit period, which is indicative of improved service safety
- Most other METRO performance indicators showed declining performance:
  - Bus: Operating cost per passenger increased by 35.5 percent during the audit period, compared to 10.0 percent growth in the CPI. Operating cost per revenue hour and per revenue mile increased by 16.8 percent and 15.7 percent respectively

    Average vehicle occupancy, a measure of service productivity, declined by 9.2 percent as a result of ridership losses and increased service levels over the audit period. On-time performance and miles between mechanical road calls also fell
  - Demand Response: Operating cost per passenger, per revenue hour, and per revenue mile all increased between 22.3 percent and 26.8 percent during the audit period

    Average vehicle occupancy improved by 17.1 percent as scheduling and ridership improved
  - Light Rail: The service began operations in FY04; no trend data are available
  - Revenue: Systemwide farebox recovery fell from 21.0 percent in FY00 to 15.0 percent in FY04, as operating costs grew while ridership and fare revenue declined. Sales and use tax receipts per passenger trip increased at a slightly higher rate than the CPI

FOUR RECOMMENDATIONS ARE OFFERED FOR CONSIDERATION BY METRO

- Findings from this report indicate both positive performance and opportunities to improve transit service efficiency and productivity

- This section includes four general recommendations that are intended to help METRO capitalize on improvement opportunities. More specific recommendations are made as part of the review of transit operations, which is the subject of a separate audit task and report

- The following recommendations are provided for consideration by METRO:
  - Recommendation #1: Leverage upcoming data management capabilities to improve data collection efficiency and quality by ensuring that systems work together to provide data needed for METRO's comprehensive reporting needs
  - Recommendation #2: Develop and use a centralized database for the preparation of internal and external performance reports
  - Recommendation #3: Continue to identify and implement opportunities to reduce operating costs and improve ridership
  - Recommendation #4: Review the fare structure with the intent of improving the farebox recovery ratio

- Recommendations are not intended to be viewed negatively, but rather as opportunities for improvement. Recommendations need to be balanced with consideration of the positive performance results from the performance audit review period

RECOMMENDATION #1: LEVERAGE UPCOMING DATA MANAGEMENT CAPABILITIES TO IMPROVE DATA COLLECTION EFFICIENCY AND QUALITY

- **Issues and Opportunities:** METRO devoted significant resources over the audit period to the procurement and installation of new technology systems, including APCs, IVOMS, and smart cards. APCs are currently in use; IVOMS is expected to be implemented during the next audit period

  These new technology initiatives will provide opportunities for METRO to enhance the efficiency of data collection and the quality of the data collected and available for analysis, while minimizing redundant data entry

- **Recommended Actions:** METRO staff should consider opportunities to leverage emerging data management capabilities to improve data collection processes. Ways that the new systems will be beneficial for the development of state-mandated performance indicators and analysis of performance trends include:

  – Passenger Trips and Miles: replacement of manual counts with APC counts, supplemented eventually with data from the fare system

  – Total and Vehicle Service Hours/Miles: will be tracked in real-time with IVOMS

  – Fare Revenue: the fare system should facilitate the recording and reconciliation of fare revenue

  Once changes to data collection procedures have been implemented, it should be possible for METRO to adjust the staff hours devoted to data collection

- **Expected Results:** METRO's data collection, reporting and analysis capabilities should improve significantly during the next audit period

RECOMMENDATION #2: DEVELOP AND USE A CENTRALIZED DATABASE FOR THE PREPARATION OF INTERNAL AND EXTERNAL PERFORMANCE REPORTS

- **Issues and Opportunities** – METRO's Office of Management and Budget (OMB) maintains a database of METRO service and financial data, which is updated monthly based on data received from other departments. The OMB database is used as a centralized source for the development of the monthly Board Reports that report METRO's performance against eleven key performance indicators

  The OMB database does not contain all of the data necessary for National Transit Database (NTD) report preparation and multiple METRO departments are involved in the preparation of METRO's NTD reports. Some data items tracked in the OMB database are not consistent with NTD (or State) definitions, such as mechanical road calls. In addition, the OMB database was found to be incomplete with respect to the reporting of rail accidents and demand response total and revenue miles

- **Recommended Actions** – METRO should develop and use a centralized database for the preparation of its primary internal (e.g., Board Reports) and external (e.g., NTD) performance-related reports

- **Expected Results** – The content and users of METRO's internal and external reports differ. Nevertheless, it will be valuable for METRO to use the same central data source for its primary performance reports so that reports are more consistent and the differences between reports with respect to data definitions are better understood. In addition, relying on a central database will reduce the need for manual data transfer, redundant data entry, the likelihood of making mistakes in the process, and the resources required for data-related activities

RECOMMENDATION #3: CONTINUE TO IDENTIFY AND IMPLEMENT OPPORTUNITIES TO REDUCE OPERATING COSTS AND IMPROVE RIDERSHIP

- **Issues and Opportunities** – Some of METRO's state-mandated indicators showed declining performance during the audit period. Most notably:
  - Operating Cost Per Passenger: Increased from $2.36 in FY00 to $3.21 in FY04 (36.1 percent increase), compared to a 10.0 percent increase in the CPI
  - Average Vehicle Occupancy: Fell from 11.1 in FY00 to 9.9 in FY04 (10.2 percent drop)
  - Fare Recovery: Fell from 21.0 percent in FY00 to 15.0 percent in FY04

  These performance trends are largely the result of increasing operating costs (up 29.1 percent) in combination with declining ridership (down 5.2 percent) over the audit period

- **Recommended Actions** – METRO staff should seek ways to improve cost effectiveness by:
  - Carefully tracking cost effectiveness performance (i.e., cost per passenger trip, cost per passenger mile) by type of service, time of day, and day of week
  - Reducing resources for unproductive bus routes (through such measures as route realignments and service hour reductions) and reallocating them to more productive services

  METRO is currently taking steps to improve cost effectiveness, including service adjustments in October 2004 and January 2005. As the METRO Solutions Transit System Plan is implemented, it will be increasingly important for METRO to evaluate its performance regularly and to be proactive in improving cost effectiveness

- **Expected Results** – METRO should see operating cost growth stabilize and ridership improve over the next audit period

RECOMMENDATION #4: REVIEW THE FARE STRUCTURE WITH THE INTENT OF IMPROVING THE FAREBOX RECOVERY RATIO

- **Issues/Opportunity** – Since FY00, the systemwide farebox recovery ratio has declined from approximately 21 percent to 15 percent. METRO has established a fare recovery target of 16 percent for FY05, but even that level is low compared to other large city transit systems, where fare recovery targets of 25 percent are common. METRO's last fare increase was implemented in 1994, when the base fare was increased to $1.00. METRO's $0.48 systemwide average fare and its $1.00 base fare are also low compared to peer systems

  Currently, fares are distinguished by service type and rider category, and a variety of fare products are available. Discounts are available for children, middle and high school students, persons with disabilities and senior citizens. Passes, tokens and transfers make discounts from the already-low base fare available to all other riders

  Over the last two audit periods (since FY96), METRO has introduced new services and new fare collection equipment, and the fare structure has become increasingly complex. In addition, the fare structure has recently been complicated by the need to accommodate riders transferring between the bus system, where fares are collected on board, and the proof of payment light rail system

  While these aspects of the fare system create a market-based fare structure, it is likely that there are opportunities to rationalize the fare structure and make it less complex, more effective, and easier for METRO to administer and riders to understand

RECOMMENDATION #4: REVIEW THE FARE STRUCTURE WITH THE INTENT OF IMPROVING THE FAREBOX RECOVERY RATIO

- **Recommended Action:** In light of METRO's low and declining fare recovery rate and average fare, and considering its deeply discounted fares and that there has not been a fare increase for ten years, METRO should examine its fare structure and fare policies, with the intent of increasing fare recovery and average fare. As part of that review, fare system objectives should be clearly defined, and should include quantifiable objectives such as fare recovery, average fare targets, and ridership, as well as other more qualitative factors that impact ridership and fare revenue. Resulting fare policies should also rationalize the fare structure while maintaining its market-based approach

- **Expected Results:** Recommendations from the fare study will define a fare structure and fare policies that achieve METRO's objectives for its fare system, and should be designed to help METRO to recover a larger share of operating costs from fare revenues

APPENDIX A: OPERATING DATA BY PERFORMANCE INDICATOR

INFORMATION IN THIS APPENDIX INCLUDES BOTH OPERATING STATISTICS AND THE PERFORMANCE MEASURES THEY HAVE BEEN USED TO CALCULATE

- This appendix provides the performance data that were verified and the performance measures that were validated for the nine state-mandated performance indicators

- Each performance indicator has been calculated at the mode level for each of the three services that METRO operates (i.e., bus, light rail, paratransit), as well as at the systemwide level

OPERATING COST PER PASSENGER

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Total State Operating Cost	$235,745,751	$236,813,769	$264,308,106	$282,227,227	$304,283,156	$68,537,405
Percent Change		0.45%	11.61%	6.78%	7.81%	29.07%
Motorbus Operating Cost	$217,923,182	$215,218,820	$238,997,995	$254,013,039	$262,759,071	$44,835,889
Percent Change		-1.24%	11.05%	6.28%	3.44%	20.57%
Light Rail Operating Cost	n/a	n/a	n/a	n/a	$12,347,658	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Operating Cost	$17,822,569	$21,594,949	$25,310,111	$28,214,188	$29,176,427	$11,353,858
Percent Change		21.17%	17.20%	11.47%	3.41%	63.70%
Total State Transit Passenger Trips	100,017,978	100,750,738	96,437,919	92,370,003	94,836,786	-5,181,192
Percent Change		0.73%	-4.28%	-4.22%	2.67%	-5.18%
Motorbus Passenger Trips	98,859,779	99,526,984	95,086,367	90,926,744	87,984,335	-10,875,444
Percent Change		0.67%	-4.46%	-4.37%	-3.24%	-11.00%
Light Rail Passenger Trips	n/a	n/a	n/a	n/a	5,349,727	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Passenger Trips	1,158,199	1,223,754	1,351,552	1,443,259	1,502,724	344,525
Percent Change		5.66%	10.44%	6.79%	4.12%	29.75%
Total Operating Cost per Passenger	**$2.36**	**$2.35**	**$2.74**	**$3.06**	**$3.21**	**$0.85**
Percent Change		**-0.28%**	**16.60%**	**11.48%**	**5.01%**	**36.12%**
Motorbus Operating Cost per Passenger	$2.20	$2.16	$2.51	$2.79	$2.99	$0.78
Percent Change		-1.90%	16.23%	11.14%	6.90%	35.48%
Light Rail Operating Cost per Passenger	n/a	n/a	n/a	n/a	$2.31	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Operating Cost per Passenger	$15.39	$17.65	$18.73	$19.55	$19.42	$4.03
Percent Change		14.68%	6.12%	4.39%	-0.68%	26.17%
Change in Consumer Price Index		**3.79%**	**0.07%**	**2.65%**	**3.21%**	**10.04%**

Source: OMB Database. Excludes charter service and METROVan rideshare data.

OPERATING COST PER REVENUE HOUR

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Total State Operating Cost	$235,745,751	$236,813,769	$264,308,106	$282,227,227	$304,283,156	$68,537,405
Percent Change		0.45%	11.61%	6.78%	7.81%	29.07%
Motorbus Operating Cost	$217,923,182	$215,218,820	$238,997,995	$254,013,039	$262,759,071	$44,835,889
Percent Change		-1.24%	11.05%	6.28%	3.44%	20.57%
Light Rail Operating Cost	n/a	n/a	n/a	n/a	$12,347,658	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Operating Cost	$17,822,569	$21,594,949	$25,310,111	$28,214,188	$29,176,427	$11,353,858
Percent Change		21.17%	17.20%	11.47%	3.41%	63.70%
Total State Transit Revenue Hours	3,538,886	3,703,156	3,830,522	3,826,242	3,852,313	313,427
Percent Change		4.64%	3.44%	-0.11%	0.68%	8.86%
Motorbus Revenue Hours	3,023,561	3,115,757	3,170,048	3,135,409	3,121,943	98,382
Percent Change		3.05%	1.74%	-1.09%	-0.43%	3.25%
Light Rail Revenue Hours	n/a	n/a	n/a	n/a	40,527	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Revenue Hours	515,325	587,399	660,474	690,833	689,843	174,518
Percent Change		13.99%	12.44%	4.60%	-0.14%	33.87%
Total Operating Cost per Revenue Hour	**$66.62**	**$63.95**	**$69.00**	**$73.76**	**$78.99**	**$12.37**
Percent Change		**-4.00%**	**7.90%**	**6.90%**	**7.09%**	**18.57%**
Motorbus Operating Cost per Revenue Hour	$72.08	$69.07	$75.39	$81.01	$84.17	$12.09
Percent Change		-4.16%	9.15%	7.46%	3.89%	16.77%
Light Rail Operating Cost per Revenue Hour	n/a	n/a	n/a	n/a	$304.68	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Operating Cost per Revenue Hour	$34.59	$36.76	$38.32	$40.84	$42.29	$7.71
Percent Change		6.30%	4.24%	6.58%	3.56%	22.29%
Change in Consumer Price Index		**3.79%**	**0.07%**	**2.65%**	**3.21%**	**10.04%**

Source: OMB Database. Excludes charter service and METROVan rideshare data.

Demand response revenue hours were provided by the Transportation Programs Administrator.

OPERATING COST PER REVENUE MILE

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Total State Operating Cost	$235,745,751	$236,813,769	$264,308,106	$282,227,227	$304,283,156	$68,537,405
Percent Change		0.45%	11.61%	6.78%	7.81%	29.07%
Motorbus Operating Cost	$217,923,182	$215,218,820	$238,997,995	$254,013,039	$262,759,071	$44,835,889
Percent Change		-1.24%	11.05%	6.28%	3.44%	20.57%
Light Rail Operating Cost	n/a	n/a	n/a	n/a	$12,347,658	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Operating Cost	$17,822,569	$21,594,949	$25,310,111	$28,214,188	$29,176,427	$11,353,858
Percent Change		21.17%	17.20%	11.47%	3.41%	63.70%
Total State Transit Revenue Miles	51,706,958	54,659,812	56,237,736	56,128,152	56,857,022	5,150,064
Percent Change		5.71%	2.89%	-0.19%	1.30%	9.96%
Motorbus Revenue Miles	41,700,901	43,472,153	44,149,018	43,481,318	43,464,472	1,763,571
Percent Change		4.25%	1.56%	-1.51%	-0.04%	4.23%
Light Rail Revenue Miles	n/a	n/a	n/a	n/a	478,398	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Revenue Miles	10,006,057	11,187,659	12,088,718	12,646,834	12,914,152	2,908,095
Percent Change		11.81%	8.05%	4.62%	2.11%	29.06%
Total Operating Cost per Revenue Mile	**$4.56**	**$4.33**	**$4.70**	**$5.03**	**$5.35**	**$0.79**
Percent Change		**-4.97%**	**8.48%**	**6.99%**	**6.43%**	**17.38%**
Motorbus Operating Cost per Revenue Mile	$5.23	$4.95	$5.41	$5.84	$6.05	$0.82
Percent Change		-5.26%	9.35%	7.91%	3.48%	15.68%
Light Rail Operating Cost per Revenue Mile	n/a	n/a	n/a	n/a	$25.81	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Operating Cost per Revenue Mile	$1.78	$1.93	$2.09	$2.23	$2.26	$0.48
Percent Change		8.37%	8.47%	6.55%	1.27%	26.84%
Change in Consumer Price Index		**3.79%**	**0.07%**	**2.65%**	**3.21%**	**10.04%**

Source: OMB Database. Excludes charter service and METROVan rideshare data.

Demand response revenue miles were provided by the Transportation Programs Administrator.

SALES AND USE TAX RECEIPTS PER PASSENGER TRIP

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Sales and Use Tax Receipts	$359,254,669	$365,919,523	$370,857,631	$357,498,093	$381,778,026	$22,523,357
Percent Change		1.86%	1.35%	-3.60%	6.79%	6.27%
Total State Transit Passenger Trips	100,017,978	100,750,738	96,437,919	92,370,003	94,836,786	-5,181,192
Percent Change		0.73%	-4.28%	-4.22%	2.67%	-5.18%
Sales and Use Tax Receipts per Passenger Trip	**$3.59**	**$3.63**	**$3.85**	**$3.87**	**$4.03**	**$0.43**
Percent Change		**1.11%**	**5.88%**	**0.64%**	**4.01%**	**12.08%**
Change in Consumer Price Index		**3.79%**	**0.07%**	**2.65%**	**3.21%**	**10.04%**

Source: OMB Database (for passenger trips) and Director of Treasury Services (for sales and use tax receipts).
Passenger trips exclude charter service and METROVan rideshare data.

FARE RECOVERY RATE

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Total State Operating Cost	$235,745,751	$236,813,769	$264,308,106	$282,227,227	$304,283,156	$68,537,405
Percent Change		0.45%	11.61%	6.78%	7.81%	29.07%
Motorbus Operating Cost	$217,923,182	$215,218,820	$238,997,995	$254,013,039	$262,759,071	$44,835,889
Percent Change		-1.24%	11.05%	6.28%	3.44%	20.57%
Light Rail Operating Cost	n/a	n/a	n/a	n/a	$12,347,658	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Operating Cost	$17,822,569	$21,594,949	$25,310,111	$28,214,188	$29,176,427	$11,353,858
Percent Change		21.17%	17.20%	11.47%	3.41%	63.70%
Total State Transit Fare Revenue	$49,533,253	$51,131,299	$50,703,706	$47,272,688	$45,620,718	-$3,912,535
Percent Change		3.23%	-0.84%	-6.77%	-3.49%	-7.90%
Motorbus Fare Revenue	$49,029,742	$50,471,633	$49,839,525	$46,333,816	$42,040,084	-$6,989,658
Percent Change		2.94%	-1.25%	-7.03%	-9.27%	-14.26%
Light Rail Fare Revenue	n/a	n/a	n/a	n/a	$2,556,171	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Fare Revenue	$503,511	$659,666	$864,181	$938,872	$1,024,463	$520,952
Percent Change		31.01%	31.00%	8.64%	9.12%	103.46%
Total Fare Recovery Rate	**21.01%**	**21.59%**	**19.18%**	**16.75%**	**14.99%**	**-6.02%**
Percent Change		**2.76%**	**-11.15%**	**-12.69%**	**-10.49%**	**-28.64%**
Motorbus Fare Recovery Rate	22.50%	23.45%	20.85%	18.24%	16.00%	-6.50%
Percent Change		4.23%	-11.08%	-12.53%	-12.29%	-28.89%
Light Rail Fare Recovery Rate	n/a	n/a	n/a	n/a	20.70%	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Fare Recovery Rate	2.83%	3.05%	3.41%	3.33%	3.51%	0.69%
Percent Change		8.13%	11.77%	-2.54%	5.52%	24.29%

Source: OMB Database. Excludes charter service and METROVan rideshare data.

Fixed route fare revenue in FY04 is allocated between the motorbus and light rail modes based on the respective shares of passenger trips.

AVERAGE VEHICLE OCCUPANCY

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Total State Passenger Miles	572,319,734	594,121,445	583,751,825	562,080,777	565,295,712	-7,024,022
Percent Change		3.81%	-1.75%	-3.71%	0.57%	-1.23%
Motorbus Passenger Miles	559,984,915	581,088,465	569,140,816	544,184,365	529,970,786	-30,014,129
Percent Change		3.77%	-2.06%	-4.38%	-2.61%	-5.36%
Light Rail Passenger Miles	n/a	n/a	n/a	n/a	16,691,148	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Passenger Miles	12,334,819	13,032,980	14,611,009	17,896,412	18,633,778	6,298,959
Percent Change		5.66%	12.11%	22.49%	4.12%	51.07%
Total State Transit Revenue Miles	51,706,958	54,659,812	56,237,736	56,128,152	56,857,022	5,150,064
Percent Change		5.71%	2.89%	-0.19%	1.30%	9.96%
Motorbus Revenue Miles	41,700,901	43,472,153	44,149,018	43,481,318	43,464,472	1,763,571
Percent Change		4.25%	1.56%	-1.51%	-0.04%	4.23%
Light Rail Revenue Miles	n/a	n/a	n/a	n/a	478,398	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Revenue Miles	10,006,057	11,187,659	12,088,718	12,646,834	12,914,152	2,908,095
Percent Change		11.81%	8.05%	4.62%	2.11%	29.06%
Total Average Vehicle Occupancy	**11.07**	**10.87**	**10.38**	**10.01**	**9.94**	**-1.13**
Percent Change		**-1.80%**	**-4.50%**	**-3.52%**	**-0.72%**	**-10.17%**
Motorbus Average Vehicle Occupancy	13.43	13.37	12.89	12.52	12.19	-1.24
Percent Change		-0.46%	-3.56%	-2.92%	-2.57%	-9.20%
Light Rail Average Vehicle Occupancy	n/a	n/a	n/a	n/a	34.89	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Paratransit Average Vehicle Occupancy	1.23	1.16	1.21	1.42	1.44	0.21
Percent Change		-5.50%	3.75%	17.08%	1.96%	17.05%

Source: OMB Database. Excludes charter service and METROVan rideshare data.

Demand response revenue miles were provided by the Transportation Programs Administrator.

ON-TIME PERFORMANCE

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Fixed Route On-Time Performance	**85.8%**	**85.3%**	**84.7%**	**83.9%**	**83.6%**	**-2.2%**
Percent Change		**-0.58%**	**-0.70%**	**-0.94%**	**-0.36%**	**-2.56%**

Source: OMB Database. Excludes charter service and METROVan rideshare data.

On-time performance in FY04 includes both motorbus and light rail services.

ACCIDENTS PER 100,000 TOTAL MILES (DIRECTLY OPERATED)

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Total Vehicle Miles (Directly Operated)	46,732,282	47,982,554	47,477,902	46,435,955	45,152,993	-1,579,289
Percent Change		2.68%	-1.05%	-2.19%	-2.76%	-3.38%
Motorbus Total Vehicle Miles (Directly Operated)	46,732,282	47,982,554	47,477,902	46,435,955	44,674,089	-2,058,193
Percent Change		2.68%	-1.05%	-2.19%	-3.79%	-4.40%
Light Rail Total Vehicle Miles	n/a	n/a	n/a	n/a	478,904	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Total Transit Accidents (Directly Operated)	1,763	1,926	1,623	1,503	1,586	-177
Percent Change		9.25%	-15.73%	-7.39%	5.52%	-10.04%
Motorbus Accidents (Directly Operated)	1,763	1,926	1,623	1,503	1,523	-240
Percent Change		9.25%	-15.73%	-7.39%	1.33%	-13.61%
Light Rail Accidents	n/a	n/a	n/a	n/a	63	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Total Accidents per 100,000 Total Miles	**3.77**	**4.01**	**3.42**	**3.24**	**3.51**	**-0.26**
Percent Change		**6.40%**	**-14.84%**	**-5.32%**	**8.52%**	**-6.89%**
Motorbus Accidents per 100,000 Total Miles	3.77	4.01	3.42	3.24	3.41	-0.36
Percent Change		6.40%	-14.84%	-5.32%	5.33%	-9.63%
Light Rail Accidents per 100,000 Total Miles	n/a	n/a	n/a	n/a	13.16	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a

Source: Risk Management Division (for motorbus accidents), Safety & Training Department (for rail accidents), and OMB Database (for total vehicle miles). Motorbus data includes directly operated motorbus services only. Excludes charter service and METROVan rideshare data.

MILES BETWEEN MECHANICAL ROADCALLS (DIRECTLY OPERATED)

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	Total Change FY00-FY04
Total Vehicle Miles (Directly Operated)	46,732,282	47,982,554	47,477,902	46,435,955	45,152,993	-1,579,289
Percent Change		2.68%	-1.05%	-2.19%	-2.76%	-3.38%
Motorbus Total Vehicle Miles (Directly Operated)	46,732,282	47,982,554	47,477,902	46,435,955	44,674,089	-2,058,193
Percent Change		2.68%	-1.05%	-2.19%	-3.79%	-4.40%
Light Rail Total Vehicle Miles	n/a	n/a	n/a	n/a	478,904	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Total Mechanical Roadcalls (Directly Operated)	5,641	5,960	5,428	6,155	6,994	1,353
Percent Change		5.66%	-8.93%	13.39%	13.63%	23.99%
Motorbus Mechanical Roadcalls (Directly Operated)	5,641	5,960	5,428	6,155	6,959	1,318
Percent Change		5.66%	-8.93%	13.39%	13.06%	23.36%
Light Rail Mechanical Roadcalls	n/a	n/a	n/a	n/a	35	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a
Total Miles Between Mechanical Roadcalls	**8,284**	**8,051**	**8,747**	**7,544**	**6,456**	**-1,828**
Percent Change		**-2.82%**	**8.65%**	**-13.75%**	**-14.43%**	**-22.07%**
Motorbus Miles Between Mechanical Roadcalls	8,284	8,051	8,747	7,544	6,420	-1,865
Percent Change		-2.82%	8.65%	-13.75%	-14.91%	-22.51%
Light Rail Miles Between Mechanical Roadcalls	n/a	n/a	n/a	n/a	13,683	n/a
Percent Change		n/a	n/a	n/a	n/a	n/a

Source: OMS Department (for roadcalls) and OMB Database (for total vehicle miles).

Motorbus data includes directly operated motorbus services only. Excludes charter service and METROVan rideshare data.

APPENDIX B: PERFORMANCE DATA BY MODE

THE PERFORMANCE INDICATORS INCLUDED IN THIS SECTION ARE REPORTED BY MODE

- The performance indicators included in this appendix report performance by each of the three modes that METRO operates (i.e., bus, light rail, paratransit)

- In addition to the nine state-mandated performance indicators, two additional performance indicators are included that are often reported as a basis for evaluating performance: passengers per revenue hour and passengers per revenue mile

PERFORMANCE INDICATORS – MOTORBUS

Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	% Change FY00-FY04
Operating Cost	$217,923,182	$215,218,820	$238,997,995	$254,013,039	$262,759,071	20.57%
Passenger Fare Revenues	$49,029,742	$50,471,633	$49,839,525	$46,333,816	$42,040,084	-14.26%
Unlinked Passenger Trips	98,859,779	99,526,984	95,086,367	90,926,744	87,984,335	-11.00%
Revenue Vehicle Hours	3,023,561	3,115,757	3,170,048	3,135,409	3,121,943	3.25%
Revenue Vehicle Miles	41,700,901	43,472,153	44,149,018	43,481,318	43,464,472	4.23%
Total Vehicle Miles	54,522,026	55,995,405	57,563,912	57,421,250	55,927,384	2.58%
Passenger Miles	559,984,915	581,088,465	569,140,816	544,184,365	529,970,786	-5.36%
Accidents	1,763	1,926	1,623	1,503	1,523	-13.61%
Mechanical Roadcalls	5,641	5,960	5,428	6,155	6,959	23.36%
Operating Cost Per Passenger	$2.20	$2.16	$2.51	$2.79	$2.99	35.48%
Operating Cost Per Revenue Hour	$72.08	$69.07	$75.39	$81.01	$84.17	16.77%
Operating Cost Per Revenue Mile	$5.23	$4.95	$5.41	$5.84	$6.05	15.68%
Fare Recovery Ratio	22.50%	23.45%	20.85%	18.24%	16.00%	-28.89%
Average Vehicle Occupancy	13.43	13.37	12.89	12.52	12.19	-9.20%
On-Time Performance	85.8%	85.3%	84.7%	83.9%	83.6%	-2.56%
Accidents Per 100,000 Total Miles	3.77	4.01	3.42	3.24	3.41	-9.63%
Miles Between Mechanical Roadcalls	8,284	8,051	8,747	7,544	6,420	-22.51%
Passengers Per Revenue Hour	32.70	31.94	30.00	29.00	28.18	-13.81%
Passengers Per Revenue Mile	2.37	2.29	2.15	2.09	2.02	-14.61%
Percentage Change						
Consumer Price Index (CPI-U)		3.79%	0.07%	2.65%	3.21%	10.04%

Source: OMB Database. Includes contracted motorbus and special event data. Excludes charter service and METROVan rideshare data.
On-time performance in FY04 includes both motorbus and light rail services.
Fixed route fare revenue in FY04 is allocated between the motorbus and light rail modes based on the respective shares of passenger trips.
Accident and mechanical roadcall numbers and performance statistics are for directly operated motorbus services only.
Accidents were provided by the Risk Management Division. Roadcalls were provided by the OMS Department.

PERFORMANCE INDICATORS – LIGHT RAIL

Performance Indicators	FY04
Operating Cost	$12,347,658
Passenger Fare Revenues	$2,556,171
Unlinked Passenger Trips	5,349,727
Revenue Vehicle Hours	40,527
Revenue Vehicle Miles	478,398
Total Vehicle Miles	478,904
Passenger Miles	16,691,148
Accidents	63
Mechanical Roadcalls	35
Operating Cost Per Passenger	$2.31
Operating Cost Per Revenue Hour	$304.68
Operating Cost Per Revenue Mile	$25.81
Fare Recovery Ratio	20.70%
Average Vehicle Occupancy	34.89
Accidents Per 100,000 Total Miles	13.16
Miles Between Mechanical Roadcalls	13,683
Passengers Per Revenue Hour	132.00
Passengers Per Revenue Mile	11.18

Source: OMB Database. Accidents were provided by the Safety & Training Department. Roadcalls were provided by the OMS Department. Fixed route fare revenue in FY04 is allocated between the motorbus and light rail modes based on the respective shares of passenger trips.

PERFORMANCE INDICATORS – DEMAND RESPONSE

Base Data and Performance Indicators	Base Year FY00	Audit Review Period FY01	FY02	FY03	FY04	% Change FY00-FY04
Operating Cost	$17,822,569	$21,594,949	$25,310,111	$28,214,188	$29,176,427	63.70%
Passenger Fare Revenues	$503,511	$659,666	$864,181	$938,872	$1,024,463	103.46%
Unlinked Passenger Trips	1,158,199	1,223,754	1,351,552	1,443,259	1,502,724	29.75%
Revenue Vehicle Hours	515,325	587,399	660,474	690,833	689,843	33.87%
Revenue Vehicle Miles	10,006,057	11,187,659	12,088,718	12,646,834	12,914,152	29.06%
Total Vehicle Miles	10,865,224	12,384,614	13,572,059	14,350,339	14,648,441	34.82%
Passenger Miles	12,334,819	13,032,980	14,611,009	17,896,412	18,633,778	51.07%
Operating Cost Per Passenger	$15.39	$17.65	$18.73	$19.55	$19.42	26.17%
Operating Cost Per Revenue Hour	$34.59	$36.76	$38.32	$40.84	$42.29	22.29%
Operating Cost Per Revenue Mile	$1.78	$1.93	$2.09	$2.23	$2.26	26.84%
Fare Recovery Ratio	2.83%	3.05%	3.41%	3.33%	3.51%	24.29%
Average Vehicle Occupancy	1.23	1.16	1.21	1.42	1.44	17.05%
Passengers Per Revenue Hour	2.25	2.08	2.05	2.09	2.18	-3.08%
Passengers Per Revenue Mile	0.12	0.11	0.11	0.11	0.12	0.53%
Percentage Change						
Consumer Price Index (CPI-U)		3.79%	0.07%	2.65%	3.21%	10.04%

Source: OMB Database.

Revenue hours, revenue miles, and total miles were provided by the Transportation Programs Administrator.