



**Capital Metropolitan Transportation Authority**

**Quadrennial Performance Audit  
Regarding Fiscal Years 2001 - 2004**

**Final Report**

KPMG LLP  
January 4, 2005

**A. Table of Contents**

**Executive Summary**

Scope and Methodology ..... Exec-1  
 Key Observations..... Exec-3  
 Key Recommendations ..... Exec-6  
 Conclusions..... Exec-6

**1. Overview and Introduction**

Background ..... 1-1  
 Scope and Methodology ..... 1-3

**2. Performance Indicators**

Scope and Methodology ..... 2-1  
 Performance Indicators – Financial ..... 2-2  
 Performance Indicators – Operational ..... 2-10

**3. Compliance Review**

Methodology ..... 3-1  
 Regulatory Compliance Evaluation ..... 3-2  
 Compliance Results ..... 3-3

**4. Vehicle Maintenance**

Background ..... 4-1  
 Scope and Methodology ..... 4-3  
 Vehicle Maintenance ..... 4-3  
 Vehicle Fleet ..... 4-7  
 Facilities ..... 4-11  
 Parts/Inventory Management ..... 4-12  
 Personnel/Staffing ..... 4-15  
 Vehicle Maintenance Management Reports/Systems ..... 4-17  
 Safety ..... 4-20

**5. Implementation Plan**

Implementation Timeframes ..... 5-1  
 Summary of Recommendations ..... 5-1

**6. Glossary ..... 6-1**

## Executive Summary

In accordance with the State of Texas Transportation Code, Chapter 451, Subchapter J, Section 451.453-457, the Capital Metropolitan Transportation Authority (CMTA or the Authority) contracted with KPMG LLP (KPMG) to conduct a Quadrennial Performance Audit. The Texas Transportation Code specifies the purpose and scope of the audit examination. The audit is designed to provide evaluative information necessary for the performance of oversight functions by state and local officers; and information to assist in making changes for the improvement of the efficiency and effectiveness of CMTA's operations.

### A. Scope and Methodology

Section 451.454 of the State of Texas Transportation Code requires that the performance audit assess the CMTA's collection and compilation of the base statistics and measurement of specified performance indicators; compliance with applicable state law; and performance in one of three areas (administration and management, transit operations, or system maintenance). For this performance audit, system maintenance was the focus area selected for study. This report summarizes the results of the performance audit for fiscal years 2001, 2002, 2003, and 2004, which cover the period from October 1, 2000 through September 30, 2004.

*Note that due to the statutorily required timing of the quadrennial performance audit, the financial and operational data collected for fiscal year 2004 (October 1, 2003 through September 30, 2004) was not yet audited. As a result, observations regarding performance trends that are dependent on audited data are limited to comparisons of annual figures from the three audited years. CMTA has indicated that it will include audited data for fiscal year 2004 as part of the next regularly scheduled Quadrennial Performance Audit, and will include four years of audited data in each quadrennial cycle thereafter.*

KPMG examined all of the performance indicators statutorily cited by applicable code sections. The following performance ratios are mandated and have been provided in this Quadrennial Performance Audit:

- Sales and use tax receipts per passenger
- Operating cost per passenger
- Fare recovery rate
- Operating cost per revenue mile and per revenue hour
- Average vehicle occupancy
- On-time performance and Missed Trips
- Number of accidents per 100,000 miles
- Miles between mechanical road calls

The project team also selected additional data elements related to those mandated in order to provide a more complete contextual analysis of CMTA's performance. The following indicators have been included in this report:

- Operating Costs per Passenger, by Service Type
- Passenger Trips and Operating Costs by Transit Mode
- Passenger Revenue by Service Type
- Share of Total Vehicle Miles in Revenue Service

KPMG evaluated CMTA’s overall regulatory compliance using a risk-based methodology to identify the sections of applicable statutes judged to pose the highest degree of exposure to the Authority’s current operations. By assessing each regulatory section for its potential impact to the Authority across a range of criteria, the project team scored each section as “low”, “medium”, or “high” risk. Regulations with “high” risk ratings were included in the compliance review. Additionally, regulations that scored in the “medium” range were considered individually and included in the compliance review if the items had a close relevance to a regulatory section rated as a “high” risk. Through this process, 45 items from the original list of approximately 201 regulatory sections were selected for inclusion in the compliance study.

In order to determine CMTA’s compliance with the selected regulations, KPMG examined official documents provided by CMTA, interviewed Authority personnel, and observed procedures in use. We have provided a summary of our conclusions regarding CMTA’s compliance with each regulation in Section 3 of this report. Based upon the agreed-upon scope of KPMG’s review and on the information examined, CMTA is compliant with all of the applicable regulatory sections identified for inspection for which compliance could be determined.

To perform the evaluation of the efficiency and effectiveness of the CMTA’s system maintenance, the project team developed a methodology that combined an analysis of quantitative performance measures with qualitative assessment. This methodology included:

- Examination of documentation on vehicle maintenance organization and operations
- Inspection of key automated and manual systems that support vehicle maintenance
- Interviews with selected management and staff in CMTA and the Vehicle Maintenance Department
- Walk-throughs and observation of Vehicle Maintenance facilities and major functions
- Analysis of key vehicle maintenance performance metrics

The evaluation relied upon extensive data used and developed by CMTA to manage its vehicle maintenance activities. Such data was reviewed by the project team for reasonableness, but was not separately verified by the project team.

KPMG conducted this audit in accordance with the “Government Auditing Standards” 2003 Revision published by the Comptroller General of the United States (GAO-03-673G), commonly referred to as the “Yellow Book.”

## B. Key Observations

CMTA has maintained passenger fares at a consistently affordable level throughout the period examined for this Quadrennial Performance Audit. During much of that time, operating costs rose steadily while tax revenues available for transit operations declined. Despite these challenges, CMTA has maintained its operational efficiency in terms of vehicle occupancy and the share of time that vehicles are in revenue service.

The increasing costs of personnel and operations were not accompanied by corresponding increases in tax revenues. These dynamics manifest in negative trends in several of the performance indicators examined for this audit. For example, CMTA’s aggregated Operating Costs for Fixed Route and Demand Response service rose 27.1% during the period of study. In contrast, the net sales and use tax receipts available for transit operations have dropped from \$90.7 million in fiscal year 2001 to \$79.7 million in 2003, a difference of -12.1%.

Following are selected excerpts from the Observations included in the body of the Quadrennial Performance Audit report. We encourage the reader to refer to the full text of the Observation in order to understand the context of the noted information.

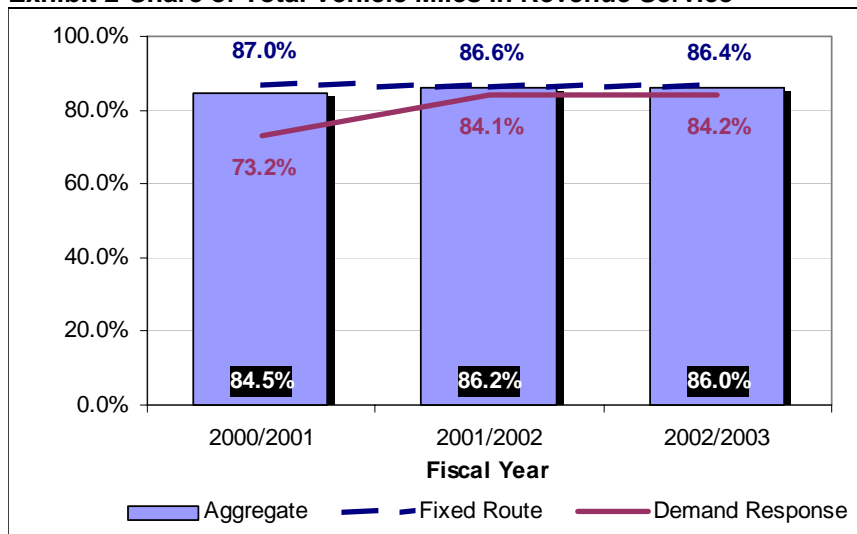
- Rising Operating Costs** – The Operating Cost per Passenger for Fixed Route service grew moderately, rising only \$0.29, or 14.1%, over three years. However, the cost per passenger for Demand Response service rose 22.2% in the same period, from \$30.25 to \$36.96. [Observation 2.2]
- Purchased Transportation Costs Were Lower Than Directly Operated** – As the number of Demand Response Purchased Transportation passenger trips grew, the respective operating cost also increased by 29.3%, from \$10.85 to \$14.03 per passenger. During the same period, CMTA’s Directly Operated service remained more than three times that of the contract cost. [Observation 2.4] Exhibit 1 illustrates the respective costs.

**Exhibit 1 Operating Cost per Passenger – Demand Response**



- Fare Recovery Rate Declined** – CMTA’s total Operating Cost rose 27.1% from fiscal year 2001 to 2003, though Passenger Revenue rose only 3% in the same period. The fare recovery rate has dropped from 11.1% to 9.0% in three years as passenger revenue growth lagged behind operating cost increases. Passenger Revenue has not grown at the same rate as the raw numbers of Passenger Trips. [Observation 2.5]
- Revenue Service Efficiency Improved** – The share of Demand Response vehicle miles spent in revenue service steadily increased during the first three years of the study, from 73.2% in fiscal year 2001 to 84.2% in fiscal year 2003. In comparison, Fixed Route service efficiency has remained nearly flat, slipping only slightly from 87.0% to 86.4% in the same period. [Observation 2.7] Exhibit 2 illustrates the overall change, as well as the respective performance of each service type.

**Exhibit 2 Share of Total Vehicle Miles in Revenue Service**



- Operating Cost per Hour Rose Sharply** – The Operating Cost per Revenue Hour for Fixed Route service rose 14.7% but the cost per Revenue Hour for Demand Response service jumped 33.1%. [Observation 2.9]
- On-Time Service Improved** – The On-Time Performance of Directly Operated Fixed Route service rose sharply in fiscal year 2002 to reach 89.0% on-time from a level of 82.9% during fiscal year 2001. On-time performance remained relatively steady in the following fiscal year. [Observation 2.11]
- Missed Trips Fell** – The ratio of CMTA trips missed compared to the total number of trips operated remained very low, hovering near 0.2%. The share of trips missed dropped in 2002 from 0.239% to 0.193%, but rose again in the following year. [Observation 2.12]

- **Accident Rates Improved** – The Accident Rate per 100,000 Miles for CMTA’s Directly Operated modes has fallen over the four years<sup>1</sup> of the performance audit, reflecting the Authority’s commitment to improving safety. [Observation 2.13]
- **Preventive Maintenance Timeliness** – Overall, the results for November 2004 show that 151 of the 180 PMIs performed, or 84%, were done on-time. This is a significant improvement over the 67% of PMIs noted to be on-time during the sample performed on October 3, 2003 for the Federal Transit Administration (FTA) Triennial Review. [Observation 4.2]
- **Preventive Maintenance Quality** – The Vehicle Maintenance Department has developed goals and a plan to improve the quality and effectiveness of its preventive maintenance inspections and repairs. [Observation 4.3]
- **Fleet/Subfleet Spare Ratios**– CMTA presently has 286 vehicles in its fixed route fleet that it operates<sup>2</sup>. Using the Federal Transit Administration’s (FTA’s) guideline of a 20% spare vehicle ratio, CMTA’s fleet of 286 fixed route vehicles is sufficient to meet the 20% spare ratio for the current peak bus requirement of 234 buses. However, within the subfleet requirements, the spare ratios are inconsistent. [Observation 4.5]
- **Peak Demand Vehicle Pull-Out** – CMTA has had a continuing struggle to meet the daily peak demand each afternoon due to the subfleet spare ratio problem noted, and because of problems CMTA is experiencing related to warranty defects with Series 40 and Series 50 engines. [Observation 4.6]
- **Inventory Control System** – The CMTA’s inventory control system could be improved. Enhancements have been made to commercial off-the-shelf inventory and materials management systems in recent years. CMTA may want to consider researching new systems that could meet its needs better by offering more robust functionality, requiring less manual intervention, and providing more flexibility and scalability in operation. [Observation 4.10]
- **Inventory Control Manager** – CMTA needs to continue to improve its inventory control activities. Considering that the Vehicle Maintenance Department currently has 12 active blanket purchase orders, four warranty agreements with vendors, and \$7.7 million in active contracts alone, the establishment of an Inventory Control Manager may be needed and warranted. [Observation 4.11]
- **Supervisor Span of Control** – The Vehicle Maintenance Department had 200 authorized positions in fiscal year 2004, including 13 supervisors. This represents a

<sup>1</sup> Accident statistics were available for fiscal year 2004 collected in the same manner as prior years. Because such figures are not typically examined in conjunction with CMTA’s financial audit, and are not subject to NTD reporting procedures, the numbers collected for all four years were considered “final” and comparable.

<sup>2</sup> Based on CMTA’s reported vehicle inventory as of November 2004. This figure can vary widely month-to-month depending on the overlapping cycles of vehicle purchase/in-service, retirement, or transfer.

supervisor-to-staff ratio of 1:14. In the recently approved fiscal year 2005 budget, the Vehicle Maintenance Department expanded to 214 total positions. Based on the increased staffing, the number of supervisors in relation to staff in the Vehicle Maintenance Department is now 13 supervisors for 201 staff, or a 1:15 supervisor-to-staff ratio. Considering the multiple shifts that the Vehicle Maintenance Department operates and the numerous individual units with specific responsibilities within the Department, it is operating with a relatively low supervisor-to-staff ratio. [Observation 4.12]

### C. Key Recommendations

Following are selected excerpts from the Recommendations included in the body of the Quadrennial Performance Audit report. We encourage the reader to refer to the full text of the Recommendation in order to understand the context of the noted information.

- The Vehicle Maintenance Department needs to fully implement changes in its vehicle maintenance practices to enhance the timeliness of preventive maintenance inspections. [Recommendation 4.2]
- The Vehicle Maintenance Department needs to finalize and fully implement its plan to improve preventive maintenance. [Recommendation 4.3]
- CMTA needs to monitor and address its spare vehicle shortages at the sub-fleet level. [Recommendation 4.6]
- The Vehicle Maintenance Department should consider upgrading its inventory control system. [Recommendation 4.10]
- CMTA should consider adding an Inventory Control Manager position. [Recommendation 4.11]
- The Vehicle Maintenance Department should consider increasing the number of supervisors in its work force. [Recommendation 4.12]
- The Vehicle Maintenance Department needs to fill the 14 additional mechanics positions authorized in its fiscal year 2005 budget. [Recommendation 4.13a]

### D. Conclusions

In general, CMTA has maintained or improved its performance during the period included in this Quadrennial Performance Audit in the areas where the Authority's actions can affect outcomes. Though faced with a sagging economy and declining tax revenues from fiscal year 2001 to 2003, the Authority increased its Passenger Trip count, and improved efficiency in terms of the share of vehicle mileage spent in revenue service. In the same period, CMTA also underscored its customer-service and safety focus by improving on-time performance and reducing its accident rate.

CMTA has also demonstrated improvement in its Vehicle Maintenance functions during the latter portion of the period of study. Additional vehicle maintenance refinements have been planned and are largely underway in efforts to continue building CMTA's maintenance quality and effectiveness. Several of the recommendations included in this report support and complement the Vehicle Maintenance Department's existing plans.

The Authority should continue its current efforts to refine and enhance its ability to provide quality services at reasonable prices throughout the metropolitan Austin area.

## **1. Overview and Introduction**

In accordance with the State of Texas Transportation Code, Chapter 451, Subchapter J, Section 451.453-457, the Capital Metropolitan Transportation Authority (CMTA or the Authority) contracted with KPMG LLP (KPMG) to conduct a Quadrennial Performance Audit. The Texas Transportation Code specifies the purpose and scope of the audit examination. The audit is designed to provide evaluative information necessary for the performance of oversight functions by state and local officers; and information to assist in making changes for the improvement of the efficiency and effectiveness of CMTA's operations.

### **A. Background**

CMTA was established in January 1985 under the authority of Texas Transportation Code, Chapter 451 and with the approval of Austin-area voters. Although the participating jurisdictions have changed slightly since the Authority's inception, currently 11 local cities and municipalities are served by CMTA, specifically:

- City of Austin
- City of Lago Vista
- City of Leander
- Village of San Leanna
- Williamson County, portions of Precincts 1 and 2
- City of Jonestown
- City of Manor
- Travis County, Precinct 2
- Village of Point Venture
- Village of Volente

In all, the CMTA service area covers more than 500 square miles and serves a population of 758,000<sup>1</sup>.

CMTA's headquarters facility is located at 2910 East 5th Street in Austin, and is the central location for the Authority's administrative, maintenance, and operations functions. Three satellite locations provide customer service, as well as additional maintenance and operations facilities for contracted transportation services.

A seven-member Board of Directors composed of representatives appointed by the areas served governs the Authority. Each Board member is appointed for a term of two years, and though they may be re-appointed, none may serve more than eight years. The Directors are selected by their jurisdictions as follows:

- Two council members appointed by the Austin City Council
- One commissioner appointed by the Travis County Commissioners' Court

---

<sup>1</sup> Urbanized Area Population as reported by Federal Transit Administration, based on 2000 United States Census data, excluding Round Rock and other communities not in the CMTA service area.

- One mayoral representative appointed by the mayors of the suburban cities of Travis County within the service area
- One representative appointed by a panel made up of the mayors of the suburban cities, the Williamson County Judge, and the presiding officer of each municipal utility district
- Two members-at-large appointed by the Capital Area Metropolitan Planning Organization

The Board is responsible for setting policies relative to the operation, oversight, and management of CMTA. It is responsible for hiring the President/CEO and other positions necessary to operate the Authority effectively. The President/CEO is responsible for managing the daily operation of the organization. CMTA is staffed by approximately 300 full-time-equivalent, non-bargaining unit personnel.

Texas law prohibits a political subdivision, such as CMTA, from engaging in collective bargaining with labor organizations. Conversely, the Federal Transit Act requires recipients of federal transit assistance, including CMTA, to protect collective bargaining rights. In order to resolve the conflict between applicable state and federal laws, CMTA utilizes an independent contractor, StarTran, Inc. for the provision of operations personnel, including bus operators and mechanics. Though certain employees of StarTran are represented by Amalgamated Transit Union Local 1091, neither CMTA's Board nor its President/CEO may exercise any direct authority over the contractor's employees.

CMTA's operating budget for fiscal year 2004 was approximately \$114 million, funded in large part by a one-percent sales tax levied on the communities served. Transit-related tax revenues collected in fiscal year 2004 were estimated at approximately \$114 million, and were supplemented by approximately \$20 million from fares, grants, and investment income.

CMTA maintains schedules for all of its directly operated and contracted fixed route services based on historical and projected ridership. Due to the subsidization of local sales taxes, fares have remained steady at \$.50 for most riders. Express route service is provided in selected areas for \$1.00 per trip. Fare discounts are available through the purchase of ticket books and monthly passes. Persons over age 65, persons with disabilities, and Medicare cardholders can ride fixed route buses free of charge. In addition, University of Texas (UT) students ride for free simply by presenting valid student identification. Costs of the latter service are offset through interlocal agreements between CMTA and the University.

Besides its fixed-route services, CMTA also provides qualifying disabled residents of the Austin metropolitan area with paratransit services through its Special Transit Services (STS) Division. The service uses a fleet of accessible small buses, vans, and sedans to provide door-to-door services in an enhanced coverage area for individuals who are otherwise unable to utilize the fixed-route service. Through the support of transit tax subsidies, the STS services are only \$.60 per trip, though Personal Care Attendants

(PCAs) and children under age six can accompany the paying passenger free of charge. CMTA currently has 8,500 eligible paratransit clients.

CMTA also administers a vanpool program providing vehicles to approximately 150 qualified groups of area residents that have organized themselves into ride-sharing groups. CMTA owns and maintains the vehicles, which provide the vanpool users with a convenient and economical means of commuting at a reasonable cost for the Authority.

## **B. Scope and Methodology**

KPMG conducted this audit in accordance with the “Government Auditing Standards” 2003 Revision published by the Comptroller General of the United States (GAO-03-673G), commonly referred to as the “Yellow Book.”

Section 451.454 of the State of Texas Transportation Code requires that the performance audit assess the CMTA’s collection and compilation of the base statistics and measurement of specified performance indicators; compliance with applicable state law; and performance in one of three areas (administration and management, transit operations, or system maintenance). For this performance audit, system maintenance was the focus area selected for study. This report summarizes the results of the performance audit for fiscal years 2001, 2002, 2003, and 2004, which cover the period from October 1, 2000 through September 30, 2004.

## 2. Performance Indicators

In accordance with Texas Transportation Code 451.454, KPMG assessed several quantitative indicators of Capital Metropolitan Transportation Authority's (CMTA's) operational performance.

### A. Scope and Methodology

KPMG examined all of the performance indicators statutorily cited by applicable code sections. The following performance ratios are mandated and have been provided in this quadrennial performance audit:

- Sales and use tax receipts per passenger
- Operating cost per passenger
- Fare recovery rate
- Operating cost per revenue mile and per revenue hour
- Average vehicle occupancy
- On-time performance and Missed Trips
- Number of accidents per 100,000 miles
- Miles between mechanical road calls

The project team also selected additional data elements related to those mandated in order to provide a more complete contextual analysis of CMTA's performance. The following indicators have been included in this report:

- Operating Costs per Passenger, by Service Type
- Passenger Trips and Operating Costs by Transit Mode
- Passenger Revenue by Service Type
- Share of Total Vehicle Miles in Revenue Service

KPMG worked closely with CMTA to collect appropriate financial and operational data from a variety of sources. Wherever possible, the project team utilized data previously examined by independent auditors. Financial data from fiscal years 2001, 2002, and 2003 was gathered from and/or validated against CMTA's audited financial statements from corresponding years<sup>1</sup>. Much of the operational data utilized for the performance audit regarding fiscal years 2001-2003 was copied from the official reports of the National Transit Database (NTD). The procedures used by CMTA to compile, validate, and report operational data to NTD have been reviewed and tested by independent auditors<sup>2</sup>.

For instances in which data that was unavailable through confirmed sources, the project team relied on data as reported by appropriate parties within CMTA's organization. In such cases, KPMG examined the processes in use to capture and track the data to verify that the information was appropriately controlled and consistent with applicable definitions.

<sup>1</sup> Reference "Annual Financial Statements and A-133, For the years ended September 30, 2002 and 2003, With Independent Auditors' Report Thereon" and similarly titled report for year ended 2001.

<sup>2</sup> Reference "Independent Accountants' Report on Applying Agreed-upon Procedures, For the year ended September 30, 2003" and similarly titled reports for years ended 2001 and 2002.

Note that due to the statutorily required timing of the Quadrennial Performance Audit, the financial and operational data collected for fiscal year 2004 (October 1, 2003 through September 30, 2004) was not yet audited. As a result, observations regarding performance trends that are dependent on audited data are limited to comparisons of annual figures from the three audited years. CMTA has indicated that it will include audited data for fiscal year 2004 as part of the next regularly scheduled Performance Audit, and will include four years of audited data in each quadrennial cycle thereafter.

After collecting the required information, the project team calculated the required performance indicator ratios for the subject fiscal years. The team analyzed the indicators on a comparative basis to identify trends and anomalies over the period of study. Notable changes in the operational procedures or environment that resulted in positive or negative impacts have been annotated in the performance report.

**B. Performance Indicators – Financial**

**Sales and Use Tax Receipts per Passenger**

**Observation 2.1 Declining Taxes per Passenger** – Tax receipts used per passenger have dropped from \$2.68 to \$2.15 in three years due to ridership increasing as sales and use tax receipts have fallen. Gross sales and use tax receipts have fallen steadily from fiscal year 2001 to 2003. Exhibit 2.1 tabulates the gross receipts by fiscal year, less the ¼-percent share returned to CMTA member communities for transportation projects. The net receipts available for transit operations have dropped from \$90.7 million to \$79.7 million, a difference of -12.1%.

**Exhibit 2.1 Sales and Use Tax Receipts, Gross and Net<sup>3</sup>**

	Fiscal Year		
	2000/2001	2001/2002	2002/2003
<b>Sales and Use Tax Receipts</b>			
Gross Receipts	\$ 120,935,134	\$ 112,288,426	\$ 106,260,112
Less 0.25% transportation project funding	\$ (30,233,784)	\$ (28,072,107)	\$ (26,565,028)
<b>Tax Receipts Available for Transit</b>	<b>\$ 90,701,351</b>	<b>\$ 84,216,320</b>	<b>\$ 79,695,084</b>
<b>Passenger Count (All Modes)</b>			
Fixed Route	33,360,027	34,922,431	36,593,267
Demand Response (incl. STS Taxi)	491,489	521,188	547,793
<b>Total Passenger Count</b>	<b>33,851,516</b>	<b>35,443,619</b>	<b>37,141,060</b>
<b>Sales and Use Tax Receipts per Passenger</b>	<b>\$ 2.68</b>	<b>\$ 2.38</b>	<b>\$ 2.15</b>

Concurrent with the reductions in tax revenues received, the annualized passenger count has risen 9.7%, from 33.8 million total passenger trips in fiscal year 2001 to 37.1 million in fiscal year 2003.

<sup>3</sup> Passenger Counts for fiscal years 2001-2003 were calculated based on statistical sampling, in accordance with the methodology defined by the Federal Transit Administration for National Transit Database (NTD) reporting.

**Operating Cost per Passenger**

**Observation 2.2 Rising Operating Costs** – CMTA’s aggregated Operating Costs for Fixed Route and Demand Response service (Directly Operated and Purchased Transportation) have risen 27.1% during the period of study. As shown in Exhibit 2.2, operating costs for both service types totaled \$84.1 million in fiscal year 2001, and rose to \$106.9 million in fiscal year 2003.

**Exhibit 2.2 Operating Costs, Fixed Route and Demand Response**

	Fiscal Year		
	2000/2001	2001/2002	2002/2003
<b>Operating Costs (DO and PT)</b>			
Fixed Route	\$ 69,270,344	\$ 75,283,825	\$ 86,689,069
Demand Response (incl. STS Tax)	\$ 14,867,350	\$ 16,306,391	\$ 20,246,127
<b>Total Operating Cost (w/o Vanpool)</b>	<b>\$ 84,137,694</b>	<b>\$ 91,590,216</b>	<b>\$ 106,935,196</b>

Operating costs rose in part as a result of the increasing ridership noted in Exhibit 2.1 above. Additional increases have resulted from rising labor costs, which have impacted both the cost of Directly Operated services as well as the contract cost of Purchased Transportation. Overall, the Cost per Passenger has risen 15.7% from \$2.49 in fiscal year 2001 to \$2.88 in 2003, the most recently audited fiscal year.

The most dramatic cost increase occurred in the Demand Response service area. The Operating Cost per Passenger for Fixed Route service grew moderately, rising only \$0.29, or 14.1%, over three years. However, the cost per passenger for Demand Response service rose 22.2% in the same period, from \$30.25 to \$36.96. Exhibit 2.3 illustrates the respective increases in Operating Cost per Passenger for both service types in comparison to the aggregate increase.

**Exhibit 2.3 Operating Costs per Passenger, by Service Type<sup>3</sup>**

	Fiscal Year		
	2000/2001	2001/2002	2002/2003
<b>Operating Costs (DO and PT)</b>			
Fixed Route	\$ 69,270,344	\$ 75,283,825	\$ 86,689,069
Demand Response (incl. STS Tax)	\$ 14,867,350	\$ 16,306,391	\$ 20,246,127
<b>Total Operating Cost (w/o Vanpool)</b>	<b>\$ 84,137,694</b>	<b>\$ 91,590,216</b>	<b>\$ 106,935,196</b>
<b>Passenger Count (DO and PT)</b>			
Fixed Route	33,360,027	34,922,431	36,593,267
Demand Response (incl. STS Tax)	491,489	521,188	547,793
<b>Total Passenger Count</b>	<b>33,851,516</b>	<b>35,443,619</b>	<b>37,141,060</b>
<b>Operating Cost per Passenger (Aggregate)</b>	<b>\$ 2.49</b>	<b>\$ 2.58</b>	<b>\$ 2.88</b>
Fixed Route	\$ 2.08	\$ 2.16	\$ 2.37
Demand Response (incl. STS Tax)	\$ 30.25	\$ 31.29	\$ 36.96

In addition to the services that CMTA operates directly, the Authority “purchases” transit operation and maintenance for Fixed Route and Demand Response services to augment the Authority’s capacity. Further analysis of the passenger counts and operating costs by transit modes reveals opposing cost-per-rider trends between the services that are directly operated by CMTA and those for which the Authority contracts.

**Observation 2.3 Purchased Transportation Grew Rapidly** – Exhibit 2.4 provides a categorization of the numbers of Passenger Trips provided through Directly Operated and Purchased Transportation for both Fixed Route and Demand Response services.

**Exhibit 2.4 Passenger Trips and Operating Costs by Transit Mode<sup>4</sup>**

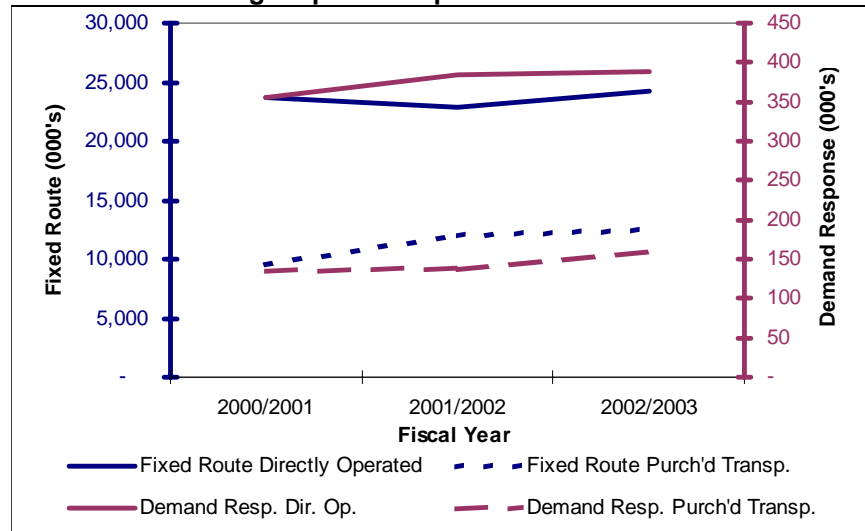
	Fiscal Year		
	2000/2001	2001/2002	2002/2003
<b>Operating Costs</b>			
<b>Fixed Route</b>	<b>\$ 69,270,344</b>	<b>\$ 75,283,825</b>	<b>\$ 86,689,069</b>
Directly Operated	\$ 53,357,208	\$ 58,079,286	\$ 68,082,333
Purchased Transportation	\$ 15,913,136	\$ 17,204,539	\$ 18,606,736
<b>Demand Response</b>	<b>\$ 14,867,350</b>	<b>\$ 16,306,391</b>	<b>\$ 20,246,127</b>
Directly Operated	\$ 13,389,375	\$ 14,685,427	\$ 18,002,143
Purchased Trans. (incl. STS Taxi)	\$ 1,477,975	\$ 1,620,964	\$ 2,243,984
<b>Total Operating Cost (w/o Vanpool)</b>	<b>\$ 84,137,694</b>	<b>\$ 91,590,216</b>	<b>\$ 106,935,196</b>
<b>Passenger Count</b>			
<b>Fixed Route</b>	<b>33,360,027</b>	<b>34,922,431</b>	<b>36,593,267</b>
Directly Operated	23,711,161	22,839,783	24,187,262
Purchased Transportation	9,648,866	12,082,648	12,406,005
<b>Demand Response</b>	<b>491,489</b>	<b>521,188</b>	<b>547,793</b>
Directly Operated	355,295	383,731	387,887
Purchased Trans. (incl. STS Taxi)	136,194	137,457	159,906
<b>Total Passenger Count</b>	<b>33,851,516</b>	<b>35,443,619</b>	<b>37,141,060</b>

As shown in Exhibit 2.4, ridership grew more quickly via the contracted transit service providers than on CMTA’s directly operated fleets. Fixed Route Purchased Transportation passenger trips showed 28.6% growth between fiscal years 2001 and 2003. In contrast, Fixed Route Directly Operated ridership remained nearly flat, showing only 2.0% growth over the same period. CMTA’s Demand Response Directly Operated ridership increased 9.2%<sup>3</sup> – from 355,295 to 387,887 passenger trips – in three years. However, Demand Response Purchased Transportation trips increased 17.4% with much of the growth occurring in fiscal year 2003. Notably, the largest share of Demand Response ridership is provided via a taxi “voucher” program

<sup>4</sup> These figures are provided for contextual clarification though the Texas Transportation Code does not specifically require they be included in the Quadrennial Performance Audit.

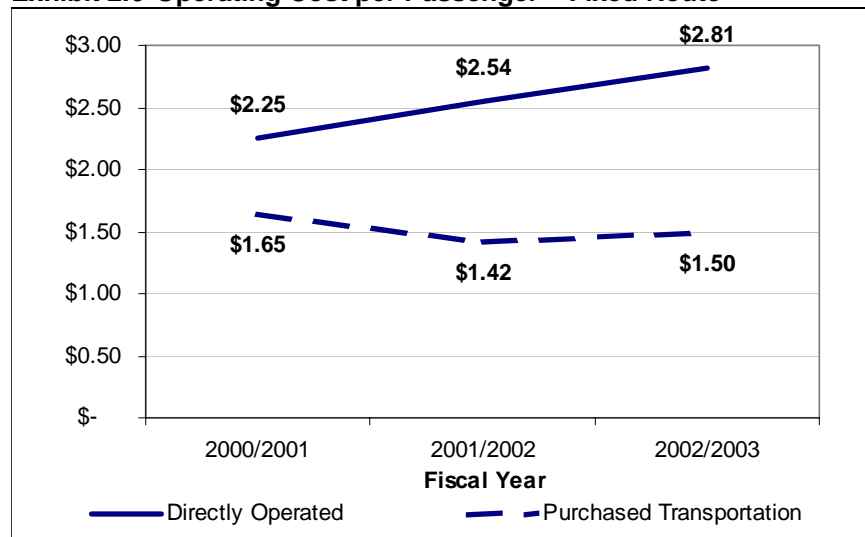
offered by CMTA. Exhibit 2.5 illustrates the comparative trends in passenger numbers for each transportation mode.

**Exhibit 2.5 Passengers per Transportation Mode<sup>4</sup>**



**Observation 2.4 Purchased Transportation Costs Were Lower Than Directly Operated** – When the numbers of Passenger Trips of each mode are compared to the respective Operating Costs, it is notable that CMTA’s Fixed Route Purchased Transportation service has declined overall on a Cost per Passenger basis. This is in contrast to the steadily rising Cost per Passenger for Fixed Route Directly Operated service. Exhibit 2.6 illustrates the comparative costs of each mode over the subject years.

**Exhibit 2.6 Operating Cost per Passenger – Fixed Route**



As the number of Demand Response Purchased Transportation passenger trips grew, the respective operating cost also increased by

29.3%, from \$10.85 to \$14.03 per passenger. Although the Operating Cost per Passenger for Demand Response Directly Operated service rose only 23.2% in the same period, CMTA’s Directly Operated service remained more than three times that of the contract cost. Exhibit 2.7 illustrates the respective costs and growth of both service modes.

**Exhibit 2.7 Operating Cost per Passenger – Demand Response**



**Fare Recovery Rate**

**Observation 2.5 Fare Recovery Rate Declined** – CMTA’s total Operating Cost rose 27.1% from fiscal year 2001 to 2003, though Passenger Revenue rose only 3% in the same period. Exhibit 2.8 summarizes the revenues generated from passengers for both Directly Operated and Purchased Transportation modes.

**Exhibit 2.8 Passenger Revenue by Service Type<sup>5</sup>**

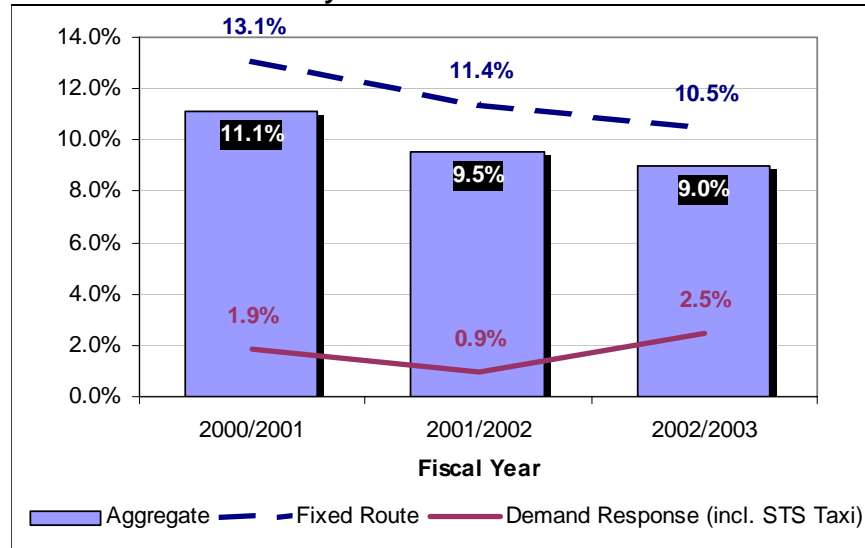
	Fiscal Year		
	2000/2001	2001/2002	2002/2003
<b>Passenger Revenue (DO and PT)</b>			
Fixed Route	9,057,270	8,563,316	9,113,111
Demand Response (incl. STS Taxi)	279,801	154,383	502,460
<b>Total Passenger Revenue (w/o Vanpool)</b>	<b>\$ 9,337,071</b>	<b>\$ 8,717,699</b>	<b>\$ 9,615,571</b>

The fare recovery rate has dropped from 11.1% to 9.0% in three years as passenger revenue growth lagged behind operating cost increases. Although ridership has increased over the period of study as shown above in Exhibit 2.3 and Exhibit 2.4, Passenger Revenue has not grown at the same rate as the raw numbers of Passenger Trips. This discrepancy could be due to several factors, including an increasing

<sup>5</sup> These figures are provided for contextual clarification though the Texas Transportation Code does not specifically require they be included in the Quadrennial Performance Audit.

numbers of “free” riders (i.e., seniors and disabled persons), students, prepaid rider populations, and multi-trip discount purchases. Exhibit 2.9 illustrates the declining Fare Recovery rate.

**Exhibit 2.9 Fare Recovery Rates**



As Exhibit 2.9 shows, Fare Recovery in Demand Response service has risen slightly overall. However, Demand Response represents a relatively small share of the total Operating Cost and thus does not substantially offset the decrease in the aggregated Fare Recovery Rate.

**Operating Cost per Revenue Mile**

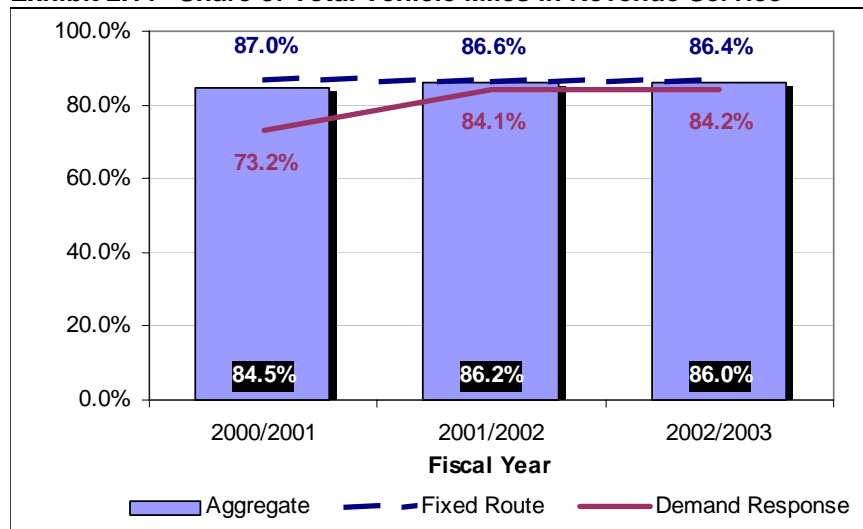
**Observation 2.6 Revenue Service Miles Increased** – The rising Operating Costs for Fixed Route and Demand Response service can be partly attributed to increased ridership (Passenger Trips), but have also been impacted by an increase in the Revenue Service Miles provided by CMTA and its transportation contractors. Based on the audited figures during the period of study, CMTA’s Revenue Service Miles increased 6.0% overall, though Demand Response Revenue Service Miles grew by 8.8%. Exhibit 2.10 tabulates the aggregate growth as well as the respective shares of Fixed Route and Demand Response Revenue Service Miles.

**Exhibit 2.10 Revenue Service Miles**

	Fiscal Year			3-Year Change
	2000/2001	2001/2002	2002/2003	
<b>Revenue Service Miles (DO and PT)</b>				
Fixed Route	13,392,258	13,859,116	14,132,472	5.5%
Demand Response (NOT incl. STS Taxi)	2,448,845	2,626,154	2,663,833	8.8%
<b>Total Revenue Service Miles (w/o Vanpool)</b>	<b>15,841,103</b>	<b>16,485,270</b>	<b>16,796,305</b>	<b>6.0%</b>

**Observation 2.7 Revenue Service Efficiency Improved** – The share of Demand Response vehicle miles spent in revenue service steadily increased during the first three years of the study, from 73.2% in fiscal year 2001 to 84.2%. In comparison, Fixed Route service efficiency has remained nearly flat, falling only slightly from 87.0% to 86.4% in the same period. Exhibit 2.11 illustrates the overall change, as well as the respective performance of each service type.

**Exhibit 2.11 Share of Total Vehicle Miles in Revenue Service<sup>6</sup>**

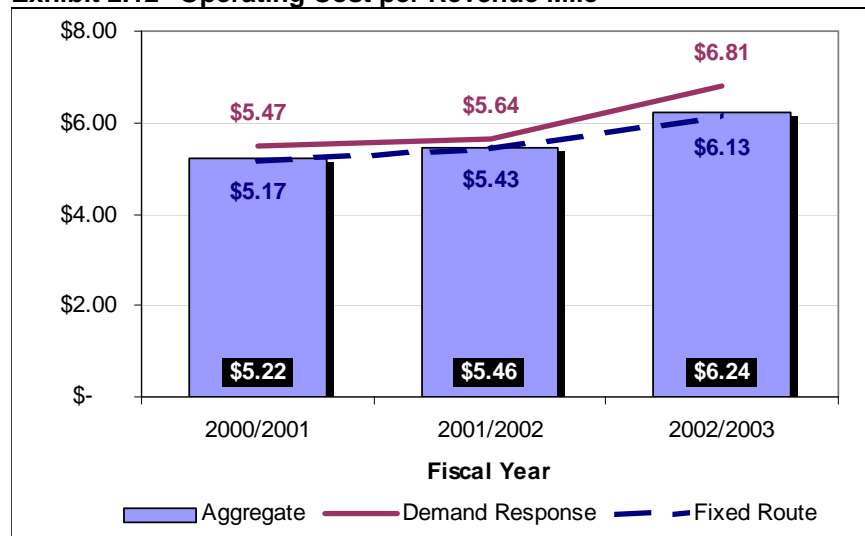


The completion of new operating facilities and the subsequent reassignment of services is expected to result in greater optimization of vehicle revenue service by placing facilities closer to where the services are provided. CMTA is developing a revised plan for the assignment of services to facilities based upon the adopted “All Systems Go” Plan. This work is to be completed in 2005.

**Observation 2.8 Operating Cost per Mile Rose** – The Operating Cost per Revenue Mile increased for all modes of CMTA’s service, rising 19.6% in aggregate from \$5.22 to \$6.24 during the period of study. The Operating Cost per Revenue Mile increased more dramatically for Demand Response service growing 24.4%, versus an 18.6% increase for Fixed Route service in the same period. Exhibit 2.12 depicts the respective increases. Increases in the operating cost per mile and the greater mileage provided in recent years – particularly for Demand Response service – is reflected in the overall increase in Operating Cost.

<sup>6</sup> These figures are provided for contextual clarification though the Texas Transportation Code does not specifically require they be included in the Quadrennial Performance Audit.

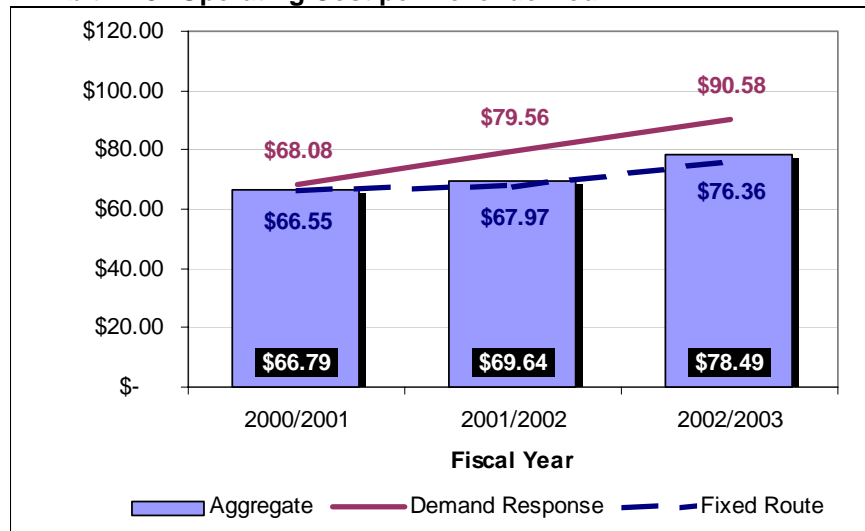
**Exhibit 2.12 Operating Cost per Revenue Mile**



**Operating Cost per Revenue Hour**

**Observation 2.9 Operating Cost per Hour Rose Sharply** – The Operating Cost per Revenue Hour for Fixed Route service rose 14.7% but the cost per Revenue Hour for Demand Response service jumped 33.1%. Fixed Route service represents the majority of the Revenue Hours, thus the 17.9% growth in the aggregate Operating Cost per Revenue Hour tracks more closely to that of Fixed Route than to Demand Response service.

**Exhibit 2.13 Operating Cost per Revenue Hour**

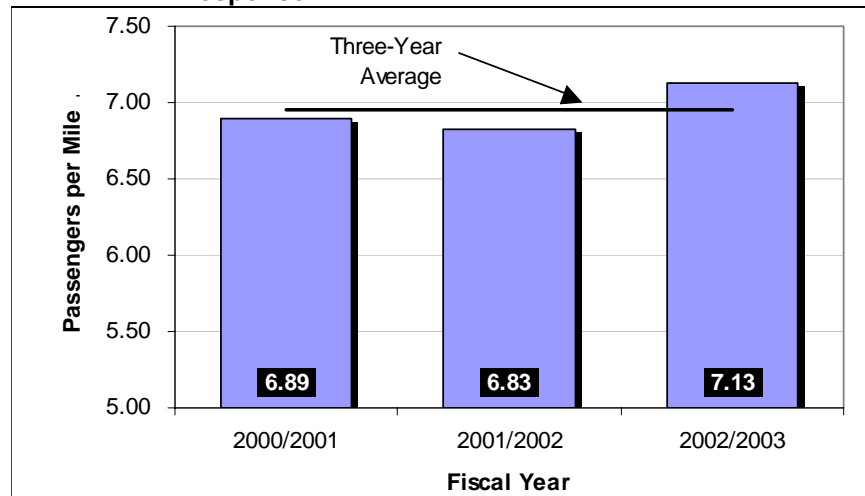


### C. Performance Indicators – Operational

#### Average Vehicle Occupancy

**Observation 2.10 Vehicle Occupancy Steady** – The aggregated Average Vehicle Occupancy for Fixed Route and Demand Response transit modes remained nearly flat over the three years of the performance audit. CMTA’s vehicles operated in a range of 6.83 passengers per mile (PPM) in fiscal year 2002 to a high of 7.13 PPM in fiscal year 2003. Occupancy in fiscal years 2001 remain was nearly identical to the three-year average. Exhibit 2.14 depicts the aggregated average vehicle occupancy for each of the three years.

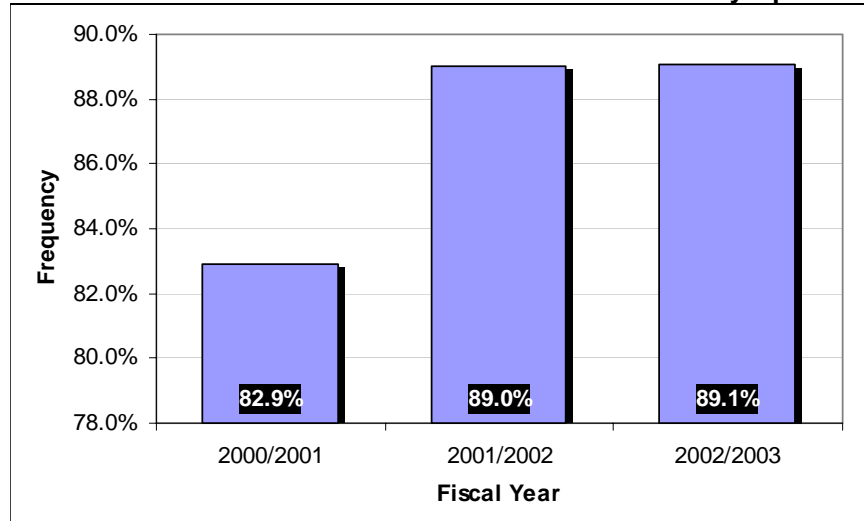
**Exhibit 2.14 Average Passengers per Mile – Fixed Route and Demand Response**



**On-Time Performance and Missed Trips**

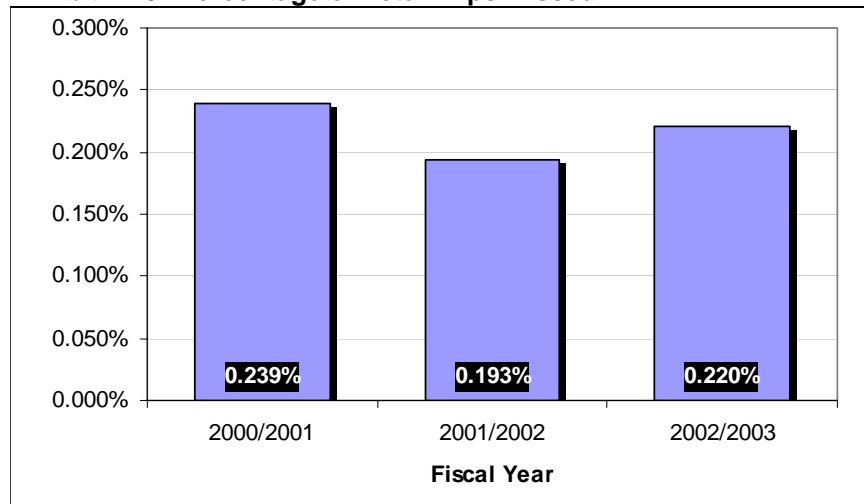
**Observation 2.11 On-Time Service Improved** – The On-Time Performance of Directly Operated Fixed Route service rose sharply in fiscal year 2002 to reach 89.0% on-time from a level of 82.9% during fiscal year 2001. On-time performance continued to improve marginally to reach 89.1% of the Directly Operated Fixed Route service running on-time.

**Exhibit 2.15 On-Time Performance – Fixed Route Directly Operated**



**Observation 2.12 Missed Trips Fell** – As illustrated in Exhibit 2.16, the ratio of CMTA trips missed compared to the total number of trips operated remains very low, hovering near 0.2%. The share of trips missed dropped in 2002 from 0.239% to 0.193%, but rose the following year.

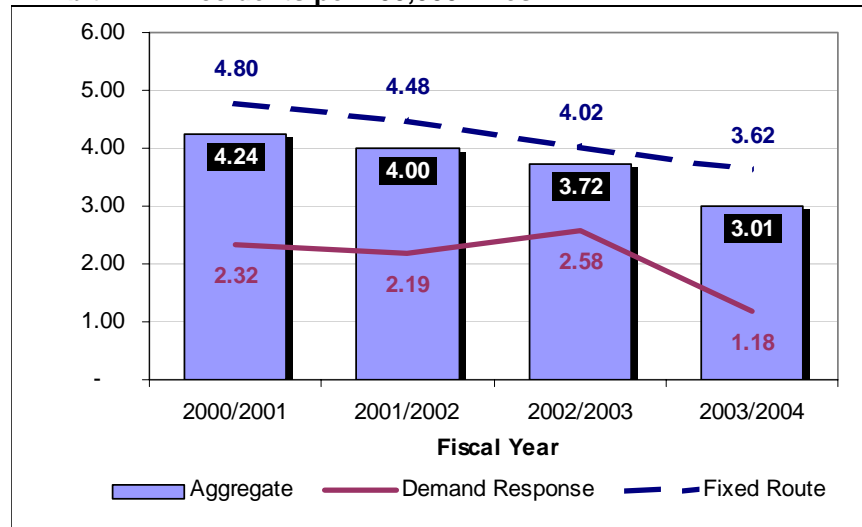
**Exhibit 2.16 Percentage of Total Trips Missed**



**Accident Rate per 100,000 miles**

**Observation 2.13 Accident Rates Improved** – The Accident Rate per 100,000 Miles for CMTA’s Directly Operated modes has improved over the four years of the performance audit<sup>7</sup>. As illustrated in Exhibit 2.17, both Fixed Route and Demand Response services accident rates have fallen steadily during the study period, with one exception in fiscal year 2003.

**Exhibit 2.17 Accidents per 100,000 Miles**



**Miles Between Mechanical Road Calls**

**Observation 2.14 Road Call Intervals Decreased for Fixed Route Service** – Exhibit 2.18 depicts the relative mileage between mechanical road calls for CMTA’s Fixed Route and Demand Response vehicles. Because such road calls require that a service vehicle or replacement revenue vehicle be dispatched to the field, and can result in delays or missed trips, it is preferable to increase the mileage between road calls. The mileage between road calls for Demand Response vehicles has improved steadily in the last three years, from a low of 8,050 miles between calls in fiscal year 2002 to the recent level of 13,192 miles in fiscal year 2004<sup>8</sup>. However, Fixed Route vehicles continue to require road calls more frequently than in past years, decreasing their interim mileage

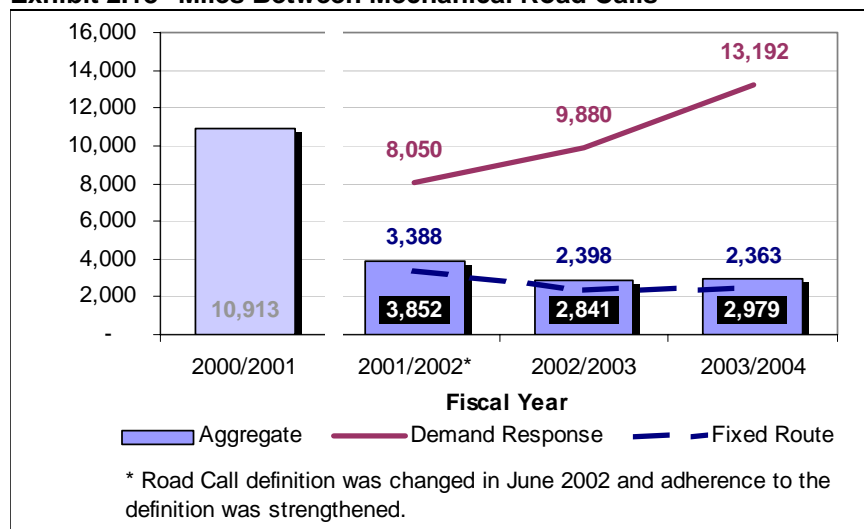
<sup>7</sup> Accident statistics for fiscal year 2004 were available and had been collected in the same manner as prior years. Because such figures are not typically examined in conjunction with CMTA’s financial audit, and are not subject to NTD reporting procedures, the numbers collected for all four years were considered “final” and comparable.

<sup>8</sup> Mechanical Road Call statistics for fiscal year 2004 were available and had been collected in the same manner as prior years. Because such figures are not typically examined in conjunction with CMTA’s financial audit, and are not subject to NTD reporting procedures, the numbers collected for all four years were considered “final” and comparable.

from 3,388 in fiscal year 2002 to 2,363 miles between calls in fiscal year 2004.

In fiscal year 2002, CMTA instituted an improved dispatch tracking system and clarified the definition of “road calls.” As a result, the figures reported for fiscal year 2001 vary greatly from those in subsequent years. Additional information and analysis regarding these figures and the conditions that influenced them is provided in Section 4 of this report.

**Exhibit 2.18 Miles Between Mechanical Road Calls**



### 3. Compliance Review

KPMG conducted an examination of the Capital Metropolitan Transportation Authority's (CMTA's) compliance with applicable state law in conjunction with the 2004 Quadrennial Performance Audit, as required by Texas Transportation Code §451.454.

#### A. Methodology

KPMG evaluated CMTA's overall regulatory compliance using a risk-based methodology to identify the sections of applicable statutes judged to pose the highest degree of exposure to the Authority's current operations. The project team compiled a list of relevant laws, statutes, and regulations from the following sources:

- Texas Transportation Code, Chapter 451. Metropolitan Rapid Transit Authorities
- Texas Government Code, Chapter 551. Open Meetings
- Texas Government Code, Chapter 552. Public Information
- Texas Government Code, Chapter 617. Collective Bargaining And Strikes
- Texas Government Code, Chapter 791. Interlocal Cooperation Contracts
- Texas Government Code, Chapter 2253. Public Work Performance And Payment Bonds
- Texas Government Code, Chapter 2254. Professional And Consulting Services
- Texas Health And Safety Code, Chapter 382. Clean Air Act
- Texas Local Government Code, Chapter 171. Regulation Of Conflicts Of Interest Of Officers Of Municipalities, Counties, And Certain Other Local Governments
- Texas Property Code, Chapter 21. Eminent Domain

Three members of the project team separately examined the complete list and reviewed the text of each regulatory section to identify the sections presenting the highest relative degree of risk to the organization. Each evaluator assigned a numerical risk rating of 0, 1, 3, or 5 to each legal section across the following eight criteria:

- Financial – potential impact on the organization's current or future revenue, expenses, or accounting practices
- Safety – potential impact on employee or customer physical safety
- Security – potential impact on the integrity of tangible property and proprietary information
- Customer Service – potential impact on the organization's level of responsiveness to its current or future customer base
- Accessibility – both the potential impact on physical accessibility issues as well as the appropriate availability of public information
- Operations – potential impact on the day-to-day functioning of the organization's principal activities
- Organizational – potential impact on the structure and/or governance of CMTA, including its Board of Directors
- Contemporary Issue – potential impact based on the contemporaneous timing of events and/or decisions

Initially, KPMG reviewed the list of regulations and assigned ratings for each criterion regarding each legal section. KPMG provided the consolidated risk analysis to CMTA’s Internal Audit Director and Chief Counsel for review and comment. CMTA supplied additional information about topical events and other considerations regarding the selected regulations. Based on the details provided, KPMG adjusted the affected risk ratings where appropriate. KPMG summed the risk scores of all criteria to establish a single risk rating value for each regulatory section. The risk values ranged from zero to 18.

Under the presumption that the three individual risk scores of 1, 3, and 5 that were used represented ratings of “low”, “medium”, and “high” risk respectively, the project team selected for review all “high” risk regulations. Regulations with total risk ratings of 13-18 were therefore included in the compliance review. Additionally, regulations that scored in the “medium” range with total risk ratings of 7-12 were considered individually and included in the compliance review if the items had a close relevance to a regulatory section rated as a “high” risk. Through this process, 45 items from the original list of approximately 201 regulatory sections were selected for inclusion in the compliance study.

## **B. Regulatory Compliance Evaluation**

In order to determine CMTA’s compliance with the selected regulations, KPMG examined official documents provided by CMTA, interviewed Authority personnel, and observed procedures in use. Where appropriate to reach a determination of CMTA’s compliance, the project team referenced statutes from additional sources, including:

- Texas Commission on Environmental Quality
- Texas State Library and Archives Commission
- Code of Federal Regulations, Title 49 – Transportation
- United States Code, Title 42, Chapter 85 – Air Pollution Prevention And Control

We have provided a summary of our conclusions regarding CMTA’s compliance with each regulation beginning on the following page. In the “Compliance Results” matrix, we have included a column with explanatory “Compliance Comments” as well as a status column with a graphical summary of each conclusion. The symbols are generally defined as follows:

- ✓ Based on the documents examined, CMTA is compliant with the listed regulatory section.
- x Based on the documents examined, CMTA is not fully compliant with the listed regulatory section. Exceptions are noted.
- n/a Compliance with the regulatory section listed is not applicable to CMTA, either by statutory requirements, or by the lack of precipitating conditions at the Authority.

### C. Compliance Results

Legal Requirement	Legal Reference	Compliance Comments	Status
1. Regulation of conflicts of interest of officers of transit authorities.	Local Gov't Code §171.001 et. seq.	Based on the documents examined, CMTA makes a concerted effort to maintain their employees' and Board members' compliance with this section.	✓
2. Before an Authority acquires an interest in real property for more than \$20,000, the Board shall cause the property to be appraised by two appraisers working independently of each other.	Texas Transportation Code §451.054(d)	Based on the documents examined, CMTA is compliant with this section.	✓
3. The Authority may contract with any city, county, or other political subdivision for the Authority to provide public transportation services to any area outside the boundaries of the Authority on such terms and conditions as may be agreed to by the parties.	Texas Transportation Code §451.056	Based on the documents examined, CMTA is compliant with this section in that the Authority has opted to provide the services allowed.	✓
4. In the event the Authority, in exercising any of the powers conferred by this Act, makes necessary the relocation, adjustment, raising, lowering, rerouting or changing the grade of or altering the construction of any street, alley, highway, overpass, underpass, or road, any railroad track, bridge or other facilities or properties, any electric lines, conduits or other facilities or properties, any telephone or telegraph lines, conduits or other facilities or properties, any gas transmission or distribution pipes, pipelines, mains or other facilities or properties, any water, sanitary sewer or storm sewer pipes, pipelines, mains or other facilities or properties, any cable television lines,	Texas Transportation Code §451.058(d)	Based on the documents examined, CMTA is compliant with this section.	✓

Legal Requirement	Legal Reference	Compliance Comments	Status
<p>cables, conduits or other facilities or properties, or any other pipelines and any facilities or properties relating thereto, any and all such relocations, adjustments, raising, lowering, rerouting or changing of grade or altering of construction shall be accomplished at the sole cost and expense of the Authority, and all damages which may be incurred by the owners of such property or facilities shall be borne by the Authority.</p>			
<p>5. The Authority shall establish and maintain rates, fares, tolls, charges, rents or other compensation for the use of the facilities of the system acquired, constructed, operated or maintained by the Authority which shall be reasonable and nondiscriminatory and which, together with receipts from taxes collected by the Authority, shall be sufficient to produce revenues adequate: (1) to pay all expenses necessary to the operation and maintenance of the properties and facilities of the Authority; (2) to pay the interest on and principal of all bonds issued by the Authority under this Act which are payable in whole or in part from such revenues, when and as the same shall become due and payable; and (3) to fulfill the terms of any agreements made with the holders of such bonds or with any person in their behalf.</p>	<p>Texas Transportation Code §451.061(a)</p>	<p>Based on the documents examined, CMTA is compliant with part (1) of this section. Parts (2) and (3) are not applicable as CMTA did not issue any bonds during the audit period.</p>	<p>✓</p>
<p>6. An authority may not perform an activity authorized by this section in a municipality without: (1) the consent of the governing body of the municipality; or (2) a contract with the municipality specifying the</p>	<p>Texas Transportation Code §451.065(d)</p>	<p>Based on the documents inspected, CMTA is substantially compliant with this section. Signed agreements are in place concerning each of the</p>	<p>✓</p>

Legal Requirement	Legal Reference	Compliance Comments	Status
actions that the authority may undertake.		municipalities to whom CMTA provides services. However, two of the agreements (Village of Volente and Village of Point Venture) lack effective dates and are only for a term of one (1) year. Though the original period covered by two of the agreements is not clear, recent CMTA Board resolutions indicate continuing support for <i>all</i> of the agreements until at least 2006.	
7. Prior to the commencement of a fiscal year, the Board shall adopt an annual operating budget that specifies major expenditures by type and amount.	Texas Transportation Code §451.102(a)	Based on the documents inspected, CMTA is compliant with this section.	✓
8. An annual operating budget must be adopted before the Authority conducts business in a fiscal year.	Texas Transportation Code §451.102(a)	Based on the documents inspected, CMTA is compliant with this section.	✓
9. Before the Board adopts its annual operating budget, it shall conduct a public hearing and shall make the proposed annual operating budget available to the public at least 14 days prior to the hearing.	Texas Transportation Code §451.102(a)	Based on the documents inspected, CMTA is compliant with this section.	✓
10. The Board of an Authority in which the principal city has a population of less than 750,000 or more than 1,200,000, shall develop and implement policies that clearly define the respective responsibilities of the Board and the staff of the Authority.	Texas Transportation Code §451.106(d)	Based on the documents inspected, CMTA is compliant with this section.	✓
11. Contracts for more than \$25,000 for the construction of improvements or the purchase of material, machinery, equipment, supplies and all other property except real property, shall be let on competitive bids	Texas Transportation Code §451.110(a)&(c)	Based on the documents inspected, CMTA is compliant with this section.	✓

Legal Requirement	Legal Reference	Compliance Comments	Status
<p>after notice published once a week for two consecutive weeks, the first publication to be at least 15 days before the date fixed for receiving bids, in a newspaper of general circulation in the area in which the Authority is located.</p>			
<p>12. An Authority that does not have an up-to-date disadvantaged business enterprise program, as defined by 49 C.F.R Part 23, to assist minorities and women in participating in Authority contracts should establish goals for that participation. The recommended contract goals are: (1) 17 percent for construction, 11 percent for purchasing, and 24 percent for professional services; or (2) the weighted average equivalent of the categories in Subdivision (1). The Board of an Authority to which this section applies shall establish a program to encourage participation in contracts of the Authority by businesses owned by minority or disadvantaged individuals.</p>	<p>Texas Transportation Code §451.251, 451.252(a)</p>	<p>CMTA <i>does</i> have a DBE program designed in response to 49 C.F.R. Part 26 (Part 23 refers to DBE participation in airport concessions, and hence is no longer the appropriately referenced section number).  This section is not applicable to CMTA due to the existence of a DBE program.</p>	<p>n/a</p>
<p>13. The Board may not purchase or lease a motor vehicle, excluding any law enforcement and any emergency vehicle, unless that vehicle is capable of using alternative fuel, having the meaning assigned by Section 382.131, Health and Safety Code, which result in comparably lower emissions of oxides of nitrogen, volatile organic compounds, carbon monoxide, or particles or any combination thereof.</p>	<p>Texas Transportation Code §451.301&amp; 451.3015(a)</p>	<p>Based on our review, CMTA <i>did</i> purchase vehicles during 2001-2004 that utilized conventional fuels (i.e., gasoline, diesel), but the vehicles purchased were either “low emission vehicles”, “ultra-low emission vehicles”, or exempt from the statute’s emission standards. As a result, CMTA is compliant with this section.</p>	<p>✓</p>

Legal Requirement	Legal Reference	Compliance Comments	Status
14. At least 50 percent of Authority fleet vehicles, having the meaning assigned by Section 382.131(7), Health and Safety Code, must be capable of using alternative fuel, except as provided in Subsection (d).	Texas Transportation Code §451.3015(b)	Based on our review, CMTA is compliant with this section as the majority (i.e., >50%) of the fleet meets the applicable alternative fuel standard.	✓
15. On or before December 31 or each year, the Board shall file an annual report with the Texas Natural Resource Conservation Commission showing: (1) purchases, leases, and conversions of motor vehicles; (2) the amount of alternative fuel used; and (3) any other information required by the commission relevant to the alternative fuel use program.	Texas Transportation Code §451.305(a)	Based on our review, CMTA is compliant with this section for 2001-2003, and is preparing a report to submit for 2004. (Note: TCEQ's current requirements call for reports to be submitted by September 1 of even-numbered years, though CMTA has submitted reports annually during the period of this audit.)	✓
16. The issuance of obligations (to finance project costs of an eligible project) shall be authorized by resolution, order or ordinance of the governing body of Capital Metro.	Texas Transportation Code §451.352	The CMTA 2004 Budget, as adopted, evidences no long-term debt requiring the use of such bonds. There is no evidence that such bonds are used or planned.	n/a
17. The Board shall have prepared an annual financial audit of the affairs of the Authority by an independent certified public accountant or a firm of independent certified public accounts.	Texas Transportation Code §451.451(a)	Based on the documents inspected, CMTA is compliant with this section for 2001-2003. The financial audit for fiscal year ending September 30, 2004 had been contracted but not initiated at the time of this performance audit.	✓
18. The Board of an Authority in which the principal municipality has a population of more than 1.2 million or less than 750,000 shall contract at least once every four years for a performance audit of the authority to	Texas Transportation Code §451.454(a)	Through the act of contracting for this performance audit for 2001-2004, CMTA is compliant with this section during the covered period.	✓

Legal Requirement	Legal Reference	Compliance Comments	Status
be conducted by a firm that has experience in reviewing the performance of transit agencies.			
19. The Board shall determine one or more subjects for a particular audit from among the subjects of administration and management of the Authority, transit operations, and system maintenance. Each of those subjects must be examined at least once in every third performance audit.	Texas Transportation Code §451.454(c)(1), Texas Transportation Code §451.454(d)	Through the act of contracting for this performance audit for 2001-2004, CMTA is compliant with this section during the covered period.	✓
20. Each performance audit must include an examination of the Authority's compliance with this Chapter and other applicable state law and of the following performance indicators: (1) operating cost per passenger; (2) sales and use tax receipts per passenger; (3) fare recovery rate; (4) average vehicle occupancy; (5) on-time performance; (6) the number of accidents per 100,000 miles; and (7) the number of total miles between mechanical road calls. (See statute for definitions.)	Texas Transportation Code §451.454(c), Texas Transportation Code §451.455	Through the act of contracting for this performance audit for 2001-2004, CMTA is compliant with this section during the covered period.	✓
21. An Authority for which a performance audit is conducted under this section shall prepare a written response to the report of the performance audit. The response must include any proposals for action, whether pending, adopted, or rejected, relating to recommendations contained in the performance audit report.	Texas Transportation Code §451.456(a)	Although CMTA has a current contract for the preparation of the required performance audit for 2001-2004, this audit cannot speculate on the Authority's actions that may take place following delivery of the auditor's report.	n/a
22. The Authority shall conduct a public hearing on each performance audit report conducted under this section and the Authority's response. The Authority shall	Texas Transportation Code §451.456(b)(c)	CMTA has a current contract for the preparation of the required performance audit for 2001-2004, including a	n/a

Legal Requirement	Legal Reference	Compliance Comments	Status
publish notice of the hearing in a newspaper with general circulation in the area included within the Authority 14 days before the date of the hearing. The Authority also shall make copies of the report and response available for public inspection at Authority offices.		requirement for the contractor to support a public hearing regarding the report produced. However, this audit cannot speculate on Authority actions that have not taken place at the time of report production..	
23. A copy of each report of a performance audit conducted under this section and the response of the Authority shall be delivered to the governor, the lieutenant governor, the speaker of the house of representatives, the state auditor, the presiding officer of the governing body of each county and municipality having territory included within the Authority, and each member of the state legislature whose district includes territory within the Authority.	Texas Transportation Code §451.457	Although CMTA has a current contract for the preparation of the required performance audit for 2001-2004, this audit cannot speculate on the Authority's actions that may take place following delivery of the auditor's report.	n/a
24. The copies shall be delivered before February 1, of every second odd-numbered year.	Texas Transportation Code §451.457	Although CMTA has a current contract for the preparation of the required performance audit for 2001-2004, this audit cannot speculate on the Authority's actions that may take place following delivery of the auditor's report.	n/a
25. The Board is composed of seven members who are appointed (1) two members representing the general public appointed by the metropolitan planning organization designated by the governor; (2) two members appointed by the governing body; (3) one member appointed by the commissioners' court; (4)	Texas Transportation Code §451.5021 (a) & (b)	Based on the documents inspected, CMTA is compliant with this section.	✓

Legal Requirement	Legal Reference	Compliance Comments	Status
<p>one member appointed by a panel composed of the mayors of all the municipalities in the authority in the principal county of the authority, excluding the mayor of the principal city; and (5) one member appointed by a panel composed of: (a) the mayors of all municipalities in the authority located outside the principal count of the authority, excluding the mayor of the principal city; (b) the county judges of the counties having unincorporated area in the authority, excluding the county judge of the principal county; and (c) the presiding officer of each municipal utility district any portion which is located outside the principal county that: (i) has a majority of its territory located outside the principal county; and (ii) is located wholly or partly in the authority.</p>			
<p>26. All vacancies on the Board, whether by death or resignation shall be filled for the remainder of the term in the manner provided for the original appointment.</p>	<p>Texas Transportation Code §451.504</p>	<p>Based on the documents inspected, CMTA is compliant with this section.</p>	<p>✓</p>
<p>27. The Board shall hold at least one regular meeting during each month for the purpose of transacting the business of the Authority.</p>	<p>Texas Transportation Code §451.514(a)</p>	<p>Based on the documents inspected, CMTA is compliant with this section.</p>	<p>✓</p>
<p>28. Upon written notice, the presiding officer of the Board or the general manager may call special meetings as may be necessary.</p>	<p>Texas Transportation Code §451.514(b)</p>	<p>Based on the documents inspected, CMTA has an official process in place to call special meetings and is thus compliant with this section.</p>	<p>✓</p>
<p>29. The Board shall notice and hold its meetings pursuant to Chapter 551, Govt Code, except that the Board</p>	<p>Texas Transportation Code §451.518</p>	<p>Based on the documents inspected, CMTA is compliant with this section.</p>	<p>✓</p>

Legal Requirement	Legal Reference	Compliance Comments	Status
<p>shall have notices of its meetings posted on a bulletin board located at a place convenient to the public at its administrative offices and a bulletin board located at a place convenient to the public at the county courthouse of the most populous county in which the principal city is located.</p>		<p>CMTA record retention policies only require that Board agendas and meeting notices be retained for two (2) years. Therefore compliance could only be ascertained for two years of the four-year audit period.</p>	
<p>30. In addition to notice required by Chapter 551, Gov't Code, the Board shall post a board meeting notice in the Authority's administrative offices and at the courthouse of the most populous county in which the principal municipality of the authority is located, each on a bulletin board at a place convenient to the public.</p>	<p>Texas Transportation Code §451.518</p>	<p>Based on the documents inspected, CMTA is compliant with this section. CMTA record retention policies only require that Board agendas and meeting notices be retained for two (2) years. Therefore compliance could only be ascertained for two years of the four-year audit period.</p>	<p>✓</p>
<p>31. The Board secretary and assistant secretaries shall, in addition to keeping the permanent records of all proceedings and transactions of the Authority, perform such other duties as may be assigned by the Board.</p>	<p>Texas Transportation Code §451.520(c)</p>	<p>Based on the documents inspected, CMTA's Board Bylaws, as adopted, specify the duties of the Secretary in a manner compliant with this section.</p>	<p>✓</p>
<p>32. If an Authority in which a local sales and use tax has been imposed changes or alters its boundaries, the presiding officer of the Board shall forward to the comptroller of public accounts by registered or certified mail a certified copy of the order adding territory to the Authority or of the order canvassing the returns and declaring the result of the election.</p>	<p>Texas Transportation Code §451.555(b)(1)&amp;(c)</p>	<p>According to the CMTA Planning Director, there have been no such changes during the audit period. No evidence was identified to the contrary.</p>	<p>n/a</p>
<p>33. An authority shall continue to provide transportation services for persons with disabilities in a withdrawn</p>	<p>Texas Transportation Code §451.61</p>	<p>Based on the documents inspected, CMTA is compliant with this section.</p>	<p>✓</p>

<b>Legal Requirement</b>	<b>Legal Reference</b>	<b>Compliance Comments</b>	<b>Status</b>
unit of election. The authority may not charge a fare for transportation services to person with disabilities in the withdrawn unit that is more than the fare for those services for persons of the authority.			
34. A governmental body shall prepare and retain minutes or make a tape recording of each of its open meetings	Texas Gov't Code §551.021(a)	Based on the documents inspected, CMTA is compliant with this section.	✓
35. The minutes shall state the subject matter of each deliberation and shall indicate each vote, order, decision, or other action taken by the governmental body.	Texas Gov't Code §551.021(b)	Based on the documents inspected, CMTA is compliant with this section.	✓
36. The minutes or tapes prepared under this section are public information and shall be made available for public inspection and copying on request to the chief administrative officer of the governmental body or to any other official designated by the chief administrative officer.	Texas Gov't Code §551.022	Based on the documents inspected, CMTA is compliant with this section.	✓
37. Notice of a meeting must be posted in a place readily accessible to the general public at all times for at least 72 hours preceding the scheduled time of the meeting	Texas Gov't Code §551.043	Based on the documents inspected, CMTA is compliant with this section.	✓
38. In case of emergency or urgent public necessity, which shall be clearly identified in the notice, it shall be sufficient if the notice is posted two hours before the meeting is convened.	Texas Gov't Code §551.045	Based on the documents inspected, CMTA is compliant with this section. CMTA record retention policies only require that Board agendas and meeting notices be retained for two (2) years. Therefore compliance could only be ascertained for two years of the four-year audit period.	✓

<b>Legal Requirement</b>	<b>Legal Reference</b>	<b>Compliance Comments</b>	<b>Status</b>
<p>39. Private consultations between a governmental body and its attorney are not permitted except in those instances in which the body seeks the attorney's advice with respect to pending or contemplated litigation, settlement offers, and matters where the duty of a public body's counsel to his client, pursuant to the Texas Disciplinary Rules of Professional Conduct of the State Bar of Texas, clearly conflicts with this Act. The public may be excluded from that portion of a meeting during which a discussion is had with respect to the purchase, exchange, lease, or value of real property, negotiated contracts for prospective gifts or donations to the state or the governmental body, when such discussion would have a detrimental effect on the negotiating position of the governmental body as between such body and a third person, firm or corporation.</p>	<p>Texas Gov't Code §551.071, 551.072, 551.073</p>	<p>Based on the documents inspected, CMTA is compliant with this section. There was no evidence revealed of private consultations not allowed by this section.</p>	<p>✓</p>
<p>40. No closed or executive meeting or session of any governmental body for any of the purposes for which closed or executive meetings or sessions are hereinafter authorized shall be held unless a quorum of the governmental body has first been convened in open meeting or session for which notice has been given as hereinafter provided and during which open meeting or session the presiding officer has publicly announced that a closed or executive meeting or session will be held and identified the section or sections under this Act authorizing the holding of such closed or executive session.</p>	<p>Texas Gov't Code §551.101</p>	<p>Based on the documents inspected, CMTA is compliant with this section.</p>	<p>✓</p>

Legal Requirement	Legal Reference	Compliance Comments	Status
41. Whenever any deliberations or any portion of a meeting are closed to the public as permitted by this Act, no final action, decision, or vote with regard to any matter considered in the closed meeting shall be made except in a meeting which is open to the public and in compliance with the requirements of this Act.	Texas Gov't Code §551.102	Based on the documents inspected, CMTA is compliant with this section.	✓
42. All information collected, assembled, or maintained by or for governmental bodies, except in those situations where the governmental body does not have either a right of access to or ownership of the information, pursuant to law or ordinance or in connection with the transaction of official business is public information and available to the public during normal business hours of any governmental body. (See statute for exceptions.)	Texas Gov't Code §552.021	Based on the documents inspected, CMTA maintains its records in accordance with this section, and seeks clarification from the Texas Attorney General's office when clarification is required regarding exceptions.	✓
43. The officer for public information shall promptly produce public information for inspection or duplication, or both, in the offices of the governmental body on application by any person or officer by providing the information in the governmental body offices or sending copies by first class U.S. mail if so requested and the requestor pays the postage and any other applicable charges accrued under Subchapter F.	Texas Gov't Code §552.221(a) & (b)	Based on the documents inspected, CMTA is compliant with this section.	✓
44. If the information is in active use or in storage and, therefore, not available at the time of request, the officer for public information shall certify this fact in writing to the requestor and set a date and hour within a reasonable time when the record will be available.	Texas Gov't Code §552.221(c)	Based on the documents inspected, CMTA is compliant with this section.	✓

Legal Requirement	Legal Reference	Compliance Comments	Status
45. An official of the state or of any political subdivision of the state may not enter into a collective bargaining contract with a labor organization respecting the wages, hours, or conditions of employment of public employees.	Texas Gov't Code §617.002(a)	Based on the documents inspected, CMTA is compliant with this section.	✓

Based upon the agreed-upon scope of KPMG’s review and on the information examined, CMTA is compliant with all of the applicable regulatory sections identified for inspection. The performance audit team noted only two (2) observations, as described below.

**Observation 3.1**                      **Community Agreements** – Two of the formal agreements with suburban communities (Village of Point Venture and Village of Volente) to participate in the “Build Greater Austin” program were only effective for a period of one (1) year but lack any effective date in the signature blocks or agreement text to indicate when the agreement was in force. Recent CMTA Board resolutions authorize continuing support for the program through 2006 for the 11 jurisdictions affected, including those identified above. (Ref. Texas Transportation Code §451.065)

**Recommendation 3.1**              Though the subject agreements remain in effect through Board action, CMTA should take efforts to ensure that all future agreements are appropriately executed, including the application of effective dates.

**Observation 3.2**                      **Modifications to Public Infrastructure** – There currently is not an official policy regarding the Authority’s responsibility to bear the cost of public infrastructure modifications and/or damages brought about by its construction work. According to CMTA Facilities Design and Construction (FD&C) management, staff members follow the intent of the applicable statute, and a policy addressing this will be included in the January 2005 FD&C Policy Manual revision. (Ref. Texas Transportation Code 451.058(d))

**Recommendation 3.2**              CMTA should continue with its efforts to formalize a policy regarding affected public infrastructure modifications.

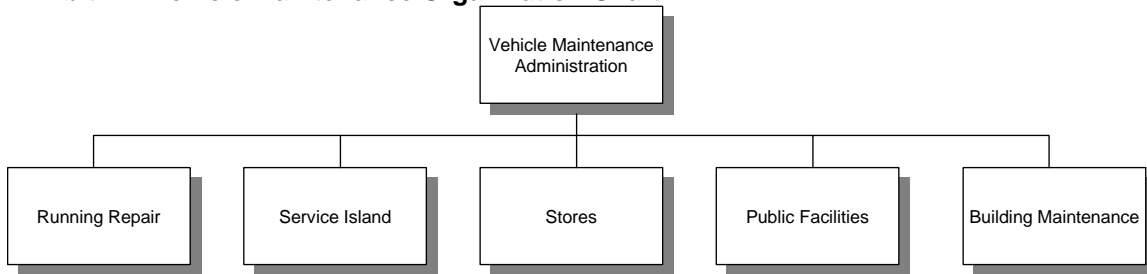
## 4. Vehicle Maintenance

This section of the report presents the results of the evaluation of the efficiency and effectiveness of CMTA’s system maintenance as required in the Quadrennial Performance Audit per Transportation Code, Section 451.454. Specifically, this section provides background on CMTA’s vehicle maintenance organization and activities, describes the scope and methodology used in the evaluation, and provides the results of the evaluation.

### A. Background

The Vehicle Maintenance Department is responsible for the management and oversight of the Running Repair, Service Island, Stores, Public Facilities and Building Maintenance Departments. Exhibit 4.1 shows the organization chart for Vehicle Maintenance.

**Exhibit 4.1 Vehicle Maintenance Organization Chart**



The Vehicle Maintenance Administration Department oversees the five departments shown in Exhibit 4.1. It has overall responsibility for routine, preventive, and predictive maintenance for CMTA’s vehicle fleet. It also provides in-service response to correct problems with vehicles on the street and manages an inter-local agreement with the Lower Colorado River Authority for radio services. Additionally, it handles vehicle acquisition, passenger amenities maintenance, and support for special events.

The Running Repair Department is responsible for maintaining the mechanical integrity of the fleet. Its primary functions include performing preventive and predictive maintenance, rebuilding engines and transmissions, servicing air conditioning, body shop repair, upholstery, and electronics repair. Its other functions include maintenance contract management for assets and supporting special events.

The Service Island Department is responsible for fueling and cleaning the vehicle fleet on a daily basis. Its primary functions include a daily cleaning, checking and servicing fluids on all buses, cars, vans, trucks and support equipment. The Service Island also collects and deposits cash boxes into receiver vaults, extracts ridership data from farebox units, manages an outside vendor to detail the buses, and supports special events.

The Stores Department is responsible for managing the inflow and outflow of materials and supplies. This involves maintaining adequate supplies of preventive and non-routine repair parts for the entire fleet and for maintenance of buildings and public facilities.

The Public Facilities Department is responsible for maintaining public facilities, bus stops and signage throughout CMTA’s service area. Its primary functions include cleaning bus stops, servicing litter containers, coordinating installation and removal of amenities, supporting special events, and performing service change tasks such as changing and updating signs.

The Building Maintenance Department performs preventive maintenance and repairs on all CMTA buildings and equipment. Its primary functions include repairing and maintaining equipment in vehicle maintenance, providing operational and mechanical support for fueling equipment, maintaining bus-washing equipment and maintaining CMTA buildings, mechanical systems and property.

For fiscal year 2004, Vehicle Maintenance had a budget of \$21,973,369. Exhibit 4.2 shows a breakdown of the fiscal year 2004 budget for Vehicle Maintenance.

**Exhibit 4.2 Vehicle Maintenance Fiscal Year 2004 Budget**

	<b>Fiscal Year 2004 Budget Amount</b>
Vehicle Maintenance Administration	\$1,303,919
Running Repair	9,647,513
Service Island	7,678,967
Stores	744,250
Public Facilities	623,193
Building Maintenance	1,975,527
<b>TOTAL</b>	<b>\$21,973,369</b>

During fiscal year 2004, the Vehicle Maintenance Department had 200 staff and supervisor positions budgeted. Exhibit 4.3 presents a summary of the fiscal year 2004 staffing within the Vehicle Maintenance Department.

**Exhibit 4.3 Summary of Vehicle Maintenance Staffing Fiscal Year 2004**

<b>Fiscal Year 2004</b>			
<b>Classification</b>	<b>Hourly Staff</b>	<b>Supervisor</b>	<b>Total</b>
Building Maintenance	12	1	13
Electronics/Radio & Farebox	9		9
Van Pool Maintenance	1		1
Inventory Control	10	1	11
STS Inventory Control	1		1
Body Shop/ Upholstery	11		11
Bus Preventive Maintenance Inspection Team	22	3	25
Bus Running Repair	31	3	34
Service Writer	4		4
STS PM & Running Repair	14	2	16
A/C & W/C Lift PM	4		4

**Exhibit 4.3 Summary of Vehicle Maintenance Staffing Fiscal Year 2004 (continued)**

Fiscal Year 2004			
Classification	Hourly Staff	Supervisor	Total
Administration 1 <sup>st</sup> Floor	3		3
Facility Maintenance	10	1	11
Bus Heavy Repair	11		11
Service Island	31	1	32
STS Service Island	6	1	7
Quality Assurance	4		4
Administration 2 <sup>nd</sup> Floor	3		3
<b>Totals</b>	<b>187</b>	<b>13</b>	<b>200</b>

Source: CMTA Vehicle Maintenance Department, November 2004.

**B. Scope and Methodology**

To perform the evaluation of the efficiency and effectiveness of CMTA’s system maintenance, the project team developed a methodology that combined an analysis of quantitative performance measures with qualitative assessment. This methodology included:

- Examination of documentation on vehicle maintenance organization and operations
- Inspection of key automated and manual systems that support vehicle maintenance
- Interviews with selected management and staff in CMTA and the Vehicle Maintenance Department
- Walk-throughs and observation of Vehicle Maintenance facilities and major functions
- Analysis of key vehicle maintenance performance metrics

The evaluation relied upon extensive data used and developed by CMTA to manage its vehicle maintenance activities. Such data was reviewed by the project team for reasonableness, but was not separately verified by the project team.

On September 20, 2004, CMTA’s Internal Audit Department completed internal audits of the Greater Austin Transportation Corporation (Report #04-05) and the ATC/Vancom, Inc. (Report #04-08) contracts for purchased transportation services provided for CMTA fixed routes. These contract audits evaluated the sufficiency and effectiveness of GATC’s and ATC’s adherence to contract terms and CMTA’s monitoring of contracted services, including maintenance and the use of the assets that are controlled by the contractor. Since the audits of these vendors’ maintenance activities had just been completed, the quadrennial performance audit focused on the vehicle maintenance activities directly performed by CMTA for its fixed route service and excluded the vendors’ maintenance activities from the quadrennial performance audit.

**Vehicle Maintenance**

**Observation 4.1 Road Call Intervals** – CMTA is applying a stringent standard for road calls due to mechanical failures; this standard has contributed to its high number of reported mechanical road calls.

CMTA defines a road call as any instance that a bus cannot continue in revenue service and either a replacement bus is sent, a mechanic is dispatched to perform repairs, or there is an interruption in service. Mechanical-related road calls are those that are caused from a maintenance related cause, such as electrical, engine, brakes, etc.

Exhibit 4.4 shows that the average miles between mechanical road calls for CMTA vehicles in fiscal year 2001 through fiscal year 2004.

**Exhibit 4.4 Miles Between Mechanical Road Calls**

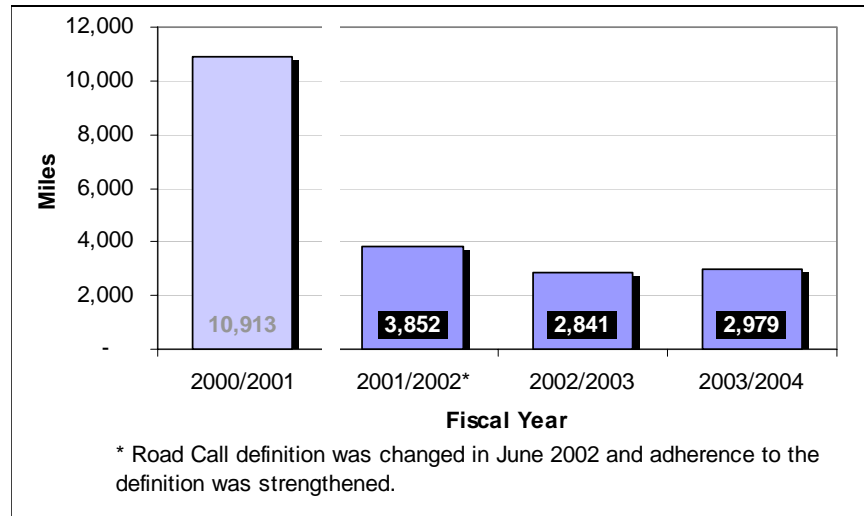


Exhibit 4.4 shows that the miles between mechanical road calls have decreased significantly since fiscal year 2001. There are two factors that have contributed to this decrease. First, in June 2002, CMTA implemented a new computerized reporting system that enhanced its ability to capture and accurately report all mechanical road calls. Second, the CMTA President/CEO strengthened and enforced the definition of mechanical road calls and the adherence to it by CMTA staff. Each of these factors has contributed to capturing more incidents of mechanical failures, thereby decreasing the average mileage between mechanical failures.

**Recommendation 4.1** The Vehicle Maintenance Department needs to continue to monitor the reason for mechanical failures and take appropriate preventive maintenance and repair actions.

**Observation 4.2 Preventive Maintenance Timeliness** – The Vehicle Maintenance Department is working to address the timeliness of preventive maintenance inspections.

On October 3, 2003 the Federal Transit Administration (FTA) released a Triennial Review for CMTA, as required by the Federal Transit Laws. The FTA has established a goal that 80% of preventive maintenance inspections (PMIs) are done in a timely manner, i.e., within 10% of the scheduled mileage intervals. The FTA’s audit report indicated that 67% of the PMIs it sampled for CMTA’s fixed route buses were completed on time, which is below the FTA goal of 80% of PMIs being performed on time.

Subsequent to the FTA’s review, CMTA established its own internal goal that 100% of PMIs are scheduled at 6,000-mile intervals, plus or minus 10% (600 miles) for all non-Exhaust Gas Recirculation-equipped buses. Exhibit 4.5 shows the timeliness of CMTA PMI intervals performed in November 2004 for these vehicles.

**Exhibit 4.5 CMTA Buses with 6,000-Mile PMI Intervals in November 2004**

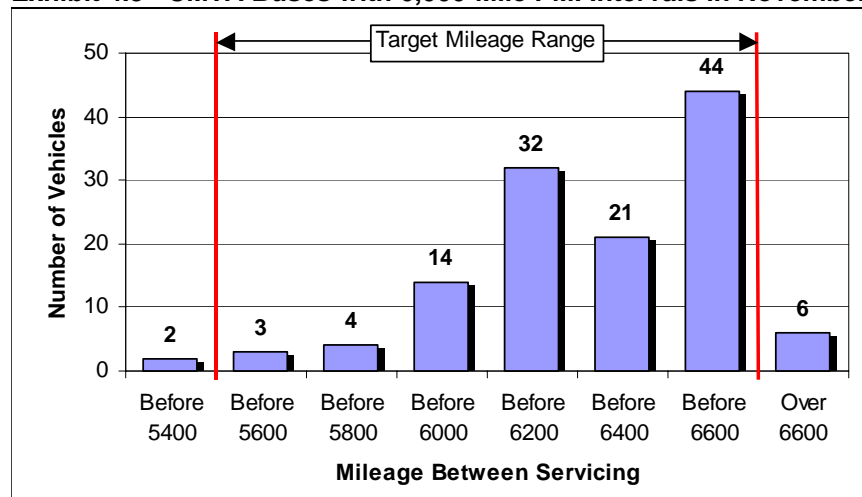


Exhibit 4.5 shows the distribution of PMI intervals actually achieved during November 2004. It indicates that 118 of the 126 PMIs due for the 244 buses that are on 6,000-mile PMI intervals were performed on time, representing 94% of the scheduled PMIs for these vehicles.

CMTA has established a goal that 100% of PMIs are to be scheduled at 3,000-mile intervals, plus or minus 10% (300 miles) for the Exhaust Gas Recirculation-equipped buses. Exhibit 4.6 shows the CMTA PMI intervals for November 2004 for these buses.

**Exhibit 4.6 CMTA Buses with 3,000-Mile PMI Intervals in November 2004**

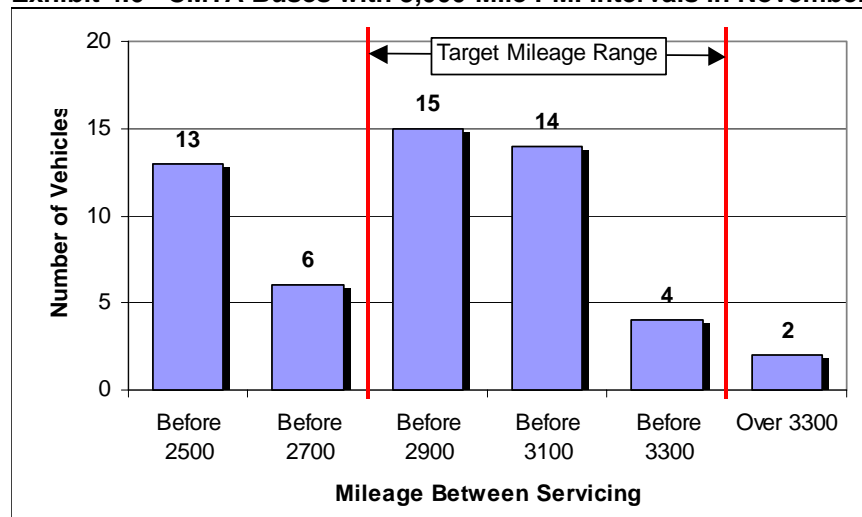


Exhibit 4.6 indicates that 33 of the 54 PMIs due for the EGR-equipped buses were performed on time, representing 61% of the scheduled PMIs for these vehicles.

Overall, the results for November 2004 show that 151 of the 180 PMIs performed, or 84%, were done on-time. This is a significant improvement over the 67% of PMIs noted to be on-time during the sample performed on October 3, 2003 for the FTA Triennial Review. Exhibit 4.7 illustrates the aggregate PMI timeliness for all buses as of November 2004.

**Exhibit 4.7 Aggregate Timeliness of Scheduled PMIs**

Timing of PMIs	Number of PMIs	Percent of Total PMIs
Early (before 90% of target mileage)	21	12%
On-time (target mileage $\pm$ 10%)	151	84%
Late (after 110% of target mileage)	8	4%
Totals	180	100%

**Recommendation 4.2** The Vehicle Maintenance Department needs to fully implement changes in its vehicle maintenance practices to enhance the timeliness of preventive maintenance inspections.

**Observation 4.3 Preventive Maintenance Quality** – The Vehicle Maintenance Department has developed goals and a plan to improve the quality and effectiveness of its preventive maintenance inspections and repairs.

The Vehicle Maintenance Department has developed and is implementing a plan to address the problem of bus reliability by revising the PM Inspection program. The PMI plan is being written to address each bus type, with specific measurable standards for conformance to the manufacturer's recommended practices. The objective is to maintain each bus type in a "like-new" condition, less allowable wear and tear. The goal of this plan is to increase the bus reliability and increase the miles between mechanical failures. One of the benchmark goals is to achieve an average of 4,250 miles between road calls by September 2005.

Current plans include increasing the scope of what is examined during each PMI, establishing specific "pass/fail" criteria for each item examined, and training all mechanics in the revised methods and criteria used for PM inspections and repairs. Based on internal analysis, the Department has determined that each expanded PMI will require approximately 32 hours to complete rather than the current average of 20 hours per PMI. According to CMTA projections, the increased time per PMI combined with the number of affected vehicles will require 14 additional mechanics to meet the workload. However, it is also expected that the mileage between mechanical road calls will be substantially increased, thus resulting in better service and a reduction in the costs related to road calls.

**Recommendation 4.3** The Vehicle Maintenance Department needs to finalize and fully implement its plan to improve preventive maintenance.

## **Vehicle Fleet**

**Observation 4.4 Fleet Age and Replacement Plan** – CMTA has a relatively young fleet of revenue vehicles.

Exhibit 4.8, presented on the next page, shows that as of September 2004, CMTA had a total of 288 directly operated revenue vehicles, plus an additional 14 "contingency" vehicles<sup>1</sup>. In addition, CMTA owns 109 vehicles that are operated by purchased transportation vendors; ATC/Vancom (ATC) provides services to the University of Texas with 87 buses, and Connex operates 22 revenue vehicles to provide fixed route van services.

<sup>1</sup> Based on the CMTA vehicle inventory as of September 2004. This figure can vary widely month-to-month depending on the overlapping cycles of vehicle purchase/in-service, retirement, or transfer.

**Exhibit 4.8 Summary of CMTA's Fleet in September 2004**

Vehicle Series	Fuel Type	Year	Make	Model	Length	In Service Date	Numbers of Vehicles			Total Fleet
							CMTA	ATC	Connex	
1400	Diesel	1986	Gillig	Phantom	APD	8/29/1986	7	0	0	7
1700	Diesel	1989	Gillig	Phantom	APD	7/1/1989	7	0	0	7
1800	CNG	1993	TMC	RTS-08	40 Foot	9/11/1993	30	0	0	30
7001	Diesel	1997	New Flyer	D30LF	30 Foot	12/2/1997	53	0	22	75
002	Diesel	1998	Chance	AH-28	29 Foot	12/11/1998	20	0	0	20
7401	Diesel	1998	New Flyer	D35LF	35 Foot	6/20/1998	45	25	0	70
8701	Diesel	1999	Gillig	G22D102N4	40 Foot	11/9/1999	0	30	0	30
8801	Diesel	2000	Gillig	G22D102N4	40 Foot	8/17/2000	21	32	0	53
8901	Diesel	2001	Gillig	G22D102N4	40 Foot	3/28/2001	26	0	0	26
8927	Diesel	2001	Gillig	G22D102N4	40 Foot	11/4/2001	23	0	0	23
9101	Diesel	2001	Gillig	G22D102N4	40 Foot	9/16/2001	28	0	0	28
2001	Diesel	2003	New Flyer	D35LF	35 Foot	6/24/2003	34	0	0	34
2101	Diesel/ Electric	2003	New Flyer	DE40LF	40 Foot	10/11/1003	2	0	0	2
9301	Diesel	2003	MCI	D4500	45 Foot	6/11/2003	6	0	0	6
Total Vehicles							302	87	22	411
Less Contingency Total (included above)							-14	0	0	-14
<b>Totals</b>							<b>288</b>	<b>87</b>	<b>22</b>	<b>397</b>

Source: CMTA, Vehicle Maintenance Department, September 2004.

Exhibit 4.8 shows that CMTA has a relatively young fleet as compared to many other transit providers. The average age of the revenue vehicles in CMTA's fleet is approximately five years.

CMTA has also developed a fleet vehicle replacement plan that covers the next 10 years. Exhibit 4.9 summarizes the fleet vehicle replacement plan. It should be noted that the CMTA fiscal year 2004 Fleet Vehicle Replacement Plan was prepared prior to the passage of the referendum supporting commuter rail services. Based on the passage of the referendum, CMTA plans to revise its Fleet Vehicle Replacement Plan.



Exhibit 4.9 CMTA Fiscal Year 2004 Fleet Vehicle Replacement Plan, as of November 2004

Vehicle Series	Fuel Type	Year	Make	Model	Length	In Service Date	2004 FLT	2005 FLT	2006 FLT	2007 FLT	2008 FLT	2009 FLT	2010 FLT	2011 FLT	2012 FLT	2013 FLT	2014 FLT	
1400	Diesel	1986	Gillig	Phantom	APD	8/29/1986	7	7										
1700	Diesel	1989	Gillig	Phantom	APD	7/1/1989	7	7										
1800	CNG	1993	TMC	RTS-08	40 Foot	9/11/1993	30	Ret.* 30										
7001	Diesel	1997	New Flyer	D30LF	30 Foot	12/2/1997	75	75	75	75	75	Ret. 75						
002	Diesel	1998	Chance	AH-28	29 Foot	12/11/1998	20	20	20	20	Ret. 20	0						
7401	Diesel	1998	New Flyer	D35LF	35 Foot	6/20/1998	70	70	70	70	70	70	Ret. 70					
8701	Diesel	1999	Gillig	G22D102NF	40 Foot	11/9/1999	30	30	30	30	30	30	30	Ret. 30	0	0	0	
8801	Diesel	2000	Gillig	G22D102N4	40 Foot	8/17/2000	53	55	53	53	53	53	53	53	Ret. 53	0	0	
8901	Diesel	2001	Gillig	G22D102N4	40 Foot	3/28/2001	26	26	26	26	26	26	26	26	26	Ret. 26	0	
8927	Diesel	2001	Gillig	G22D102N4	40 Foot	11/4/2001	23	23	23	23	23	23	23	23	23	Ret. 23	0	
9101	Diesel	2001	Gillig	G22D102N4	40 Foot	9/16/2001	28	28	28	28	28	28	28	28	28	Ret. 28	0	
2001	Diesel	2003	New Flyer	D35LF	35 Foot	6/24/2003	34	34	34	34	34	34	34	34	34	34	34	
2101	Diesel/ Electric	2003	New Flyer	DE40LF	40 Foot	10/11/2003	2	2	2	2	2	2	2	2	2	2	2	
9301	Diesel	2003	MCI	D4500	45 Foot	6/11/2003	6	6	6	6	6	6	6	6	6	6	6	
MCI 2005/2006								0	3	3	3	3	3	3	3	3	3	
BRT 2006/2007									19	25	25	25	25	25	25	25	25	
40' TMC Replacement								30	30	30	30	30	30	30	30	30	30	
DILLO Replacement											20	20	20	20	20	20		
30' NF Replacement												75	75	75	75	75		
													70	70	70	70		
														30	30	30		
															53	53		
																49		
																28		
<b>TOTAL FIXED ROUTE FLEET</b>							<b>397</b>	<b>399</b>	<b>419</b>	<b>425</b>	<b>425</b>	<b>425</b>	<b>425</b>	<b>425</b>	<b>425</b>	<b>425</b>	<b>425</b>	<b>425</b>
<b>TOTAL CONTINGENCY PLAN</b>							<b>14</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

\*Ret. = "Retire"

Source: CMTA, Vehicle Maintenance Department, November 2004.

Exhibit 4.9 shows that the total fixed route fleet operated by CMTA and its purchased transportation providers is expected to grow from 397 to 425 vehicles over the next 10 years and that all but 42 of the vehicles currently in use will be retired by fiscal year 2014.

**Observation 4.5 Fleet/Subfleet Spare Ratios** – Overall, CMTA has a good spare ratio for its fleet, but its spare ratio at the sub-fleet level is inconsistent.

In November 2004, CMTA had 286 vehicles in its fixed route fleet that it operated<sup>2</sup>. Exhibit 4.10 shows the overall fleet by type of vehicle. It also shows the spare ratio that currently exists by vehicle type, and the spare vehicles that should be available by vehicle type using the Federal Transit Administration’s (FTA’s) guideline of a 20% spare vehicle ratio.

**Exhibit 4.10 CMTA Fixed Route Vehicle Summary, as of November 2004**

Type	Fleet Count	Quantity That Can Be Assigned	Spare @ 20%	Recommended Quantity	Difference Between Fleet Count and Recommended Quantity
30'	53	42	8	50	3
35'	79	85	17	102	-23
40'	70	42	8	50	20
40' Hybrid	2	2	0	2	0
40' TMC	28	19	4	23	5
40' Suburban	28	18	4	22	6
29' Trolley	20	19	4	23	-3
45' Over-the-Road	6	7	1	8	-2
<b>TOTALS</b>	<b>286</b>	<b>234</b>	<b>46</b>	<b>280</b>	<b>6</b>

Source: CMTA, Vehicle Maintenance Department, November 2004.

Exhibit 4.10 indicates that CMTA’s fleet of 286 fixed route vehicles is sufficient to meet the 20% spare ratio for the current peak bus requirement of 234 buses, which is 280 buses. However, this exhibit also illustrates that within the subfleet requirements, the spare ratios are inconsistent. Exhibit 4.10 shows that CMTA operates eight different types of vehicles, or subfleets. These subfleets cannot necessarily substitute for one another, i.e., a trolley bus cannot substitute for a 40-foot express model.

CMTA has 79 35-foot buses and could use 85 buses during its peak operations. However, based on a 20% spare ratio, CMTA would need

<sup>2</sup> Based on CMTA’s reported vehicle inventory as of November 2004. This figure can vary widely month-to-month depending on the overlapping cycles of vehicle purchase/in-service, retirement, or transfer.

a total of 102 buses, thus CMTA is 23 buses short for this type of vehicle. Conversely, Exhibit 4.10 shows that CMTA has 28 40-foot suburban buses in its fleet but needs only 18 to meet its peak bus needs and 22 to meet its 20% spare bus ratio. Thus, CMTA has six more 40-foot suburban buses than it currently needs.

**Observation 4.6 Peak Demand Vehicle Pull-Out** – In part as a result of the noted spare shortages at the subfleet level, CMTA has had difficulty recently meeting its peak vehicle pull-out requirements when vehicles are out of service. Vehicles may be out of service due to several reasons including buses being worked on, buses waiting in queue to be worked on, or buses being serviced under warranty.

CMTA has had a continuing struggle to meet the daily peak demand each afternoon for three major reasons. First, the subfleet spare ratio problem illustrated previously in Exhibit 4.10 does not allow CMTA to always substitute vehicles for one another. While CMTA may have enough buses overall to meet peak demand of 234 buses, it may not have vehicles available of the types needed for particular routes. Second, CMTA is still experiencing a large quantity of buses that require repairs related to warranty defects with Series 40 and Series 50 engines. These problems, combined with the need to perform routine maintenance and address unscheduled mechanical failures of buses, have negatively impacted CMTA’s ability to meet its peak pull-out requirement for buses.

**Recommendation 4.6** CMTA needs to monitor and address its spare vehicle shortages at the sub-fleet level.

## Facilities

**Observation 4.7 Facility Capacity** – CMTA’s current vehicle maintenance facility at 2910 East 5th Street is operating at near full capacity.

CMTA operates a majority of its vehicle maintenance services out of its main operating facility at 2910 East 5th Street in Austin.

Due to the growth in the vehicle fleet, service levels and staffing, the current location operates at virtually 100% capacity or above, with 234 peak vehicle pull-outs on weekdays.

The 2910 East 5th Street facility does not have the capability to expand to handle additional buses, so CMTA has developed plans to expand elsewhere. Special Transit Services (STS) has been relocated to a dedicated facility on Thompson Lane in southeast Austin.

Contractors also operate the UT shuttle and other fixed-route services at other locations.

**Facility Expansion** – The development and opening of a new facility in North Austin will allow for future expansion of the fixed-route system.

CMTA has established a goal of ownership of all vehicles and facilities used for CMTA services, regardless of whether the services are owned directly or by contractors. As part of this strategy, CMTA is developing a new facility in North Austin that will replace a current contractor-owned facility (ATC) and allow sufficient capacity for future expansion of the fixed-route systems.

## **Parts/Inventory Management**

**Observation 4.8 Procurement and Stores** – The Vehicle Maintenance Department is in the process of developing responses and taking actions to address the recent audits and studies of procurement/stores activities.

The Stores Department is responsible for the inflow and outflow of materials and supplies for maintaining CMTA’s fleet of vehicles. This involves maintaining adequate supplies of preventive and non-routine parts for the entire fleet in addition to maintenance of buildings and public facilities.

In May 2003, an outside consultant hired by CMTA completed a business process re-engineering report and strategic implementation plan for improving CMTA’s procurement function by moving to a strategic procurement module with a more customer-focused approach. This strategic implementation plan called for developing a Procurement Development charter, conducting six strategic initiatives for implementing the strategic procurement model, developing a training and change management plan, and measuring performance using key performance indicators.

On March 15, 2004, CMTA’s Internal Auditor issued an internal audit report on Stores/Inventory Management (Report #3-12). The purpose of this audit was to evaluate the physical and management controls over the materials and supplies used to maintain CMTA’s vehicle fleet, buildings, and public facilities.

The internal audit report concluded that CMTA’s “existing controls and management practices do not provide a sufficient framework to ensure that CMTA supplies and inventories are managed effectively

and efficiently.” In response to this internal audit report, the CMTA management and Internal Audit Department developed detailed action plans to provide cost effective approaches to reducing CMTA’s business risk.

As part of its more customer-focused approach, Procurement and Stores are expanding the use of blanket purchase orders and establishing additional contracts with outside vendors to provide services in a more timely and cost-effective manner.

**Recommendation 4.8** The Vehicle Maintenance Department should continue to implement the corrective action plans, and work with Procurement personnel to enhance the procurement processes for an improved customer-service focus.

**Observation 4.9 Inventory Control Efficiency** – CMTA’s parts facility could be operated and organized more efficiently.

CMTA’s Internal Auditor’s Report issued on March 15, 2004 indicated that CMTA had over 1,200 items that had not been used in over one year. These items, valued at over \$300,000 represented nearly 14% of CMTA’s total inventory investment at that time.

During our review, it was noted that CMTA had gotten rid of some of its obsolete parts. However, a considerable number of obsolete parts were still visible in the Parts facility. In addition, the space within the Parts facility was not seen as well organized and was not making the best use of existing space. For example, there were numerous items that needed to be disposed of that were occupying space. In addition, the layout of the parts room and the tracking conventions used to store and retrieve parts are not consistent with industry-leading practices.

**Recommendation 4.9** The Parts facility used by the Vehicle Maintenance Department needs to be reorganized to make more efficient use of space. In addition, non-productive inventory should be considered for disposal.

**Observation 4.10 Inventory Control System** – CMTA’s inventory control system could be improved.

CMTA uses EMPAC, an automated inventory system to help manage and control its inventory management and related activities. This system was upgraded in 2001. Among the functionality that CMTA uses that is available in EMPAC are:

- Work Management – Including planning workbench, work requests, unplanned work order, work order, and work order completion
- Asset Management – Including asset, inspection procedures, repetitive procedures, and asset schedule maintenance
- Resource Management – Including identifying timesheet, employee, shift pattern, craft and crew assignments
- Warranty Management – Including 20 different categories of warranties, such as steering, electrical, etc.
- Project Management – Including creating a work order and charging parts against a project
- Stores – Including identifying location, stock item, stock location, requisition, receiving notice and stock issue, suggested reorders, stocking policy, stock transaction

The EMPAC automated inventory system also has several modules that are not being used, including:

- Component Tracking – Which allows serialized stock items to be assigned to a location specified to individual assets
- Capacity Management – Which allows creation of an event (such as a road call) to an asset that can be attached to a work order
- Other Sub-Modules of Modules in Use – Such as serialized item maintenance within the Stores module that allows a stock or non-stocked item to be tracked by serial number given to the item upon receipt

In discussions with Vehicle Maintenance staff, the modules or sub-modules that are not used were treated as such due to the fact that they are labor-intensive to maintain on a daily basis or they do not fit CMTA's needs.

Considering the enhancements that have been made to commercial off-the-shelf inventory and materials management systems in recent years, CMTA may want to consider researching new systems that may meet its needs better by offering more robust functionality, require less manual intervention, and provide more flexibility and scalability in operation. This is particularly important because CMTA is in the process of building additional maintenance facilities and will need to equip them with inventory and material management capabilities.

**Recommendation 4.10** The Vehicle Maintenance Department should consider upgrading its inventory control system.

**Personnel/Staffing**

**Observation 4.11 Inventory Control Manager** – As noted in Observation 4.9 and Observation 4.10 above, CMTA needs to continue to improve its inventory control activities.

The three most recent studies that were conducted regarding CMTA’s procurement function, purchasing activities, and stores/inventory management identified extensive findings and recommendations to improve CMTA’s activities in these areas.

Currently, CMTA does not have a separate Inventory Control Manager position to oversee and be accountable for the full range of inventory control activities that CMTA has responsibility for managing and controlling. Many transit agencies have found it useful to establish such a position to centralize the accountability and responsibility for this large function. Considering that the Vehicle Maintenance Department currently has 12 active blanket purchase orders, four warranty agreements with vendors, and \$7.7 million active contracts alone, the establishment of an Inventory Control Manager may be needed and warranted.

In some organizations, the Inventory Control Manager reports to the Vehicle Maintenance Department, while in other organizations it is more independent and reports to the Finance Department. CMTA may want to explore the authority such as position should have as well as the degree of independence needed at CMTA.

**Recommendation 4.11** CMTA should consider adding an Inventory Control Manager position.

**Observation 4.12 Supervisor Span of Control** – The Vehicle Maintenance Department operates with a limited number of supervisors.

As previously shown in Exhibit 4.3, the Department had 200 staff and supervisor positions in fiscal year 2004, including 13 supervisors. This represents a supervisor to staff ratio of 1:14. In the recently approved fiscal year 2005 budget, the Vehicle Maintenance Department expanded to 214 total positions as shown in Exhibit 4.11.

**Exhibit 4.11 Summary of Vehicle Maintenance Staffing Fiscal Year 2005**

Classification	Hourly Staff	Supervisor	Total
Building Maintenance	12	1	13
Electronics/Radio & Farebox	9		9
Van Pool Maintenance	1		1
Inventory Control	10	1	11

Classification	Hourly Staff	Supervisor	Total
STS Inventory Control	1		1
Body Shop/ Upholstery	11		11
Bus Preventive Maintenance Inspection Team	34	3	37
Bus Running Repair	33	3	36
Service Writer	4		4
STS PM & Running Repair	14	2	16
A/C & W/C Lift PM	4		4
Administration 1 <sup>st</sup> Floor	3		3
Facility Maintenance	10	1	11
Bus Heavy Repair	11		11
Service Island	31	1	32
STS Service Island	6	1	7
Quality Assurance	4		4
Administration 2 <sup>nd</sup> Floor	3		3
<b>Totals</b>	<b>201</b>	<b>13</b>	<b>214</b>

Source: CMTA Vehicle Maintenance Department, November 2004.

The number of supervisors to staff in the Vehicle Maintenance Department is now 13 supervisors for 201 staff, or a 1:15 supervisor-to-staff ratio. Considering the multiple shifts that the Vehicle Maintenance Department operates and the numerous individual units with specific responsibilities within the Vehicle Maintenance Department, it is operating with a relatively low supervisor-to-staff ratio.

In recognition of the shortage of supervisors, the Vehicle Maintenance Department has been using Vehicle Maintenance Leads to help make up some of the workload. Currently, the Vehicle Maintenance Department has three full-time equivalent positions working as Vehicle Maintenance Leads filling in due to the lack of supervisors.

**Recommendation 4.12** The Vehicle Maintenance Department should consider increasing the number of supervisors in its work force.

**Observation 4.13 Shift Scheduling** – The Vehicle Maintenance Department may not be using its staff as efficiently and effectively as possible under its current staff scheduling pattern.

The Department may experience difficulty continuing its current shift schedule. Many of the mechanics work four days per week with 10-hour work shifts. Given the current scheduling pattern, the vehicle maintenance facility at 2910 East 5th Street is operating at near full capacity with its current bus deployment and staffing contingent.

As previously mentioned, CMTA approved 14 additional mechanic positions in the fiscal year 2005 budget year that began October 1, 2004. The Vehicle Maintenance Department is currently working to fill these 14 new positions.

With its current contingent of mechanics, the Vehicle Maintenance Department has a sufficient number of workdays available to have mechanics present on two shifts and have them work four days per week on 10 hour-per-day shift schedules. Essentially, there are two shifts each day with mechanics working 10-hour days on each shift. With the addition of 14 new mechanics, there are not sufficient workdays available to have all mechanics work four-day/10-hour workshifts. This is due to the limited space available within the shops that constrains the number of vehicles that can be worked on at one time. As a result, if the four-day/10-hour work schedule was maintained, there would be overlap of mechanics on shifts and the use of staff would be less efficient due to multiple workers on buses at the same time.

A shift schedule that had mechanics working three shifts with eight-hour days, five days per week would accommodate the additional 14 mechanics without overlapping shift schedules. Thus it would be a more efficient use of staff.

**Recommendation 4.13a** The Vehicle Maintenance Department needs to fill the 14 additional mechanics positions authorized in its fiscal year 2005 budget.

**Recommendation 4.13b** The Vehicle Maintenance Department should review its current two-shift schedule and four-day per week, 10-hour workday schedule, and strongly consider going to a three-shift operation that uses a five-day per week, eight-hour workday, so that mechanics can be used more efficiently.

### **Vehicle Maintenance Management Reports/Systems**

**Observation 4.14 Workload Reporting** – The Vehicle Maintenance Department has developed a set of reports to assist in better managing and scheduling work.

Since January 2004, the Vehicle Maintenance Department has been working to enhance its ability to monitor, schedule and track its workload. The Department has developed a series of management reports that enable it to get a better understanding of buses available

for service, buses down for repair, and buses needing preventive maintenance. These new reports include:

- Fixed Route Fleet Summary Report – Provided by the Capital Metropolitan Vehicle Status (CMVSTAT) system that summarizes the total number of fixed route vehicles by type and the total number of vehicles available at any point in time.
- Fixed Route Service Down Bus List – Provides a summary of the vehicles that are out-of-service, the number of days each vehicle has been down, and the reason for the vehicle being out of service.
- Fixed Route PM Mileage Overdue or With 700 Miles of PM – This report lists each vehicle that is overdue for PM or which is within 700 miles of needing PM. It also tells what type of PM it last received and what type of PM is due the next time it comes in for service.
- Monthly Report of Vehicle Maintenance – Provides a monthly report of performance indicators for the CMTA Vehicle Maintenance Department and describes the overall performance of vehicle maintenance staff in supporting the operations of Fixed Route and Special Transportation Services.

These reports are effective management tools to identify CMTA's vehicle maintenance needs, develop vehicle maintenance priorities, and schedule and complete work.

**Recommendation 4.14** The Vehicle Maintenance Department needs to continue to use its newly developed reports as a management tool.

**Observation 4.15 Data and Voice Radio Systems** – CMTA currently has two alternative radio systems available for its use, the Computer Aided Dispatch Mobile Data and Transportation (RDMT) system and a 900 MHz radio system administered by the Lower Colorado River Authority (LCRA).

In 1996, CMTA had formalized a regional partnership with Austin-Travis County to use the RDMT system. The RDMT system includes the following elements:

- Voice Radio System
- Computer Emergency Center
- Computer-Aided Dispatch
- 911 Call Center Network
- Data Radio System

In fiscal year 2001 the CMTA's Board of Directors authorized CMTA to enter into an inter-local agreement with the LCRA to

provide a short-term radio solution that would resolve existing radio communication needs and help CMTA achieve long-term strategies. CMTA is currently in year two of seven of the life of its current radio equipment for radios with voice and data capabilities.

Presently, CMTA operates on the LCRA's 900 MHz system, owns the mobile radios, and pays for airtime. CMTA has no cost of infrastructure. 525 radios were migrated to the new 900 MHz LCRA radio system serving directly operated fixed route and STS services. At the same time, over 110 radios were migrated to a third party system operated the by UT service contractor.

CMTA is presently not an RDMT system user. CMTA has invested in RDMT's infrastructure and will continue to pay approximately 5% of the RDMT's annual operating costs. The RDMT's system requires separate voice and data radios. The mobile radio equipment is not purchased and the data systems have the first users planned.

CMTA currently has an Intelligent Transportation Systems (ITS) project that is taking a comprehensive approach to applying advanced technologies to transit to improve customer service and safety, and reduce operating costs. The project was approved in fiscal year 2004, and in August 2004, CMTA awarded a contract to a transit consulting firm who will be conducting an assessment of CMTA's business processes and technology systems. The ITS project will include a review of CMTA's radio system needs.

**Recommendation 4.15** As part of the ITS project, CMTA should select a radio system which best meets its current needs for voice and its long range strategy in supporting data transmission via radio or broadband communications.

**Observation 4.16 Vehicle Fueling System** – The fueling system and controls at the 2910 East 5th Street facility could be enhanced.

CMTA's Internal Auditor issued Report #04-11 regarding Fuel Controls and Monitoring on September 20, 2004. The report addressed various issues regarding controls over the delivery, payment and issue/consumption of diesel fuel. The report concluded that effective controls over fuel consumption are in place at CMTA operated facilities. However, controls over purchased contractor fuel consumption and contractor monitoring should be strengthened.

At CMTA's main vehicle maintenance facility at 2910 East 5th Street, CMTA has an automated fuel dispensing system that is used to

record the vehicle being fueled, mileage and amount of fuel consumed. This information is fed into the system and fuel reports are produced.

The potential exists to upgrade the existing fuel system. For example, current fuel systems on the market do not rely on operator input to the system. Instead, fueling data is read automatically from the vehicle and the fuel pumps, thereby eliminating manual input. This provides for faster fueling and improves the quality of fuel reporting. CMTA is considering such a system at its new maintenance facility. It may also want to consider implementing a new system at its main vehicle maintenance facility.

**Recommendation 4.16** CMTA should consider upgrading the fueling system and controls at the 2910 East 5th Street facility.

**Safety**

**Observation 4.17 Workers’ Compensation** – The Vehicle Maintenance Department has been successful in minimizing workers’ compensation claims.

As depicted in Exhibit 4.12, the Vehicle Maintenance Department has had only 41 workers’ compensation claims during fiscal years 2001-2004. These resulted in a four-year total of 700 days of lost time, 211 light duty days, and a cost of \$330,567.90.

**Exhibit 4.12 Vehicle Maintenance (VM) Department Workers’ Compensation Claims**

Fiscal Year	Number of VM Claims	Number of VM Staff Filing Claims	Total VM Lost Time Days	Total VM Light Duty Days	Total VM Incurred Cost
2001	11	11	59	53	\$55,882.39
2002	12	11	408	28	\$126,397.12
2003	8	8	13	0	\$46,627.90
2004	10	10	220	130	\$101,660.49
<b>TOTALS</b>	<b>41</b>	<b>40</b>	<b>700</b>	<b>211</b>	<b>\$330,567.90</b>

## **5. Implementation Plan**

In accordance with Texas Transportation Code 451.454, KPMG conducted a Quadrennial Performance Audit of Capital Metropolitan Transportation Authority (CMTA) for fiscal years 2001 – 2004 (October 1, 2001 through September 30, 2004). KPMG examined CMTA’s performance indicators, compliance with regulations, and system maintenance. The audit team’s recommendations regarding each area of study are summarized below with proposed responsible parties and timeframes for implementation.

### **A. Implementation Timeframes**

KPMG has provided *suggested* timeframes for CMTA to consider in implementing the recommendations related to each section of the Quadrennial Performance Audit. The timeframes are defined as follows:

**Immediate** – Complete the recommended action(s) within a period of one to three months.

**Near-term** – Complete the recommended action(s) within the remainder of the current fiscal year.

**Long-term** – Complete the recommended action(s) within subsequent fiscal year(s).

**Ongoing** – Institute and maintain the recommendation.

### **B. Summary of Recommendations**

The table presented beginning on the next page presents a summary of the recommendations contained the Quadrennial Performance Audit Report.

Recommendation	Responsible Department	Implementation Timeframe	Estimated Fiscal Impact <sup>1</sup> [x1,000]
<b>Section 2 – Performance Indicators</b>			
None			
<b>Section 3 – Compliance Review</b>			
Recommendation 3.1 Though the subject agreements remain in effect through Board action, CMTA should take efforts to ensure that all future agreements are appropriately executed, including the application of effective dates.	Legal	Ongoing	None
Recommendation 3.2 CMTA should continue with its efforts to formalize a policy regarding affected public infrastructure modifications.	Facilities Design and Construction	Near-term	None
Recommendation 4.1 The Vehicle Maintenance Department needs to continue to monitor the reason for mechanical failures and take appropriate preventive maintenance and repair actions.	Vehicle Maintenance	Ongoing	None
Recommendation 4.2 The Vehicle Maintenance Department needs to fully implement changes in its vehicle maintenance practices to enhance the timeliness of preventive maintenance inspections.	Vehicle Maintenance	Near-term	None
Recommendation 4.3 The Vehicle Maintenance Department needs to finalize and fully implement its plan to improve preventive maintenance.	Vehicle Maintenance	Near-term	None

<sup>1</sup> High-level estimate of gross savings (shown in parentheses) and/or implementation costs, not including CMTA personnel costs.

<b>Recommendation</b>	<b>Responsible Department</b>	<b>Implementation Timeframe</b>	<b>Estimated Fiscal Impact<sup>1</sup> [x1,000]</b>
Recommendation 4.6 CMTA needs to monitor and address its spare vehicle shortages at the sub-fleet level.	Vehicle Maintenance	Long-term	Indeterminable <sup>2</sup>
Recommendation 4.8 The Vehicle Maintenance Department should continue to implement the corrective action plans, and work with Procurement personnel to enhance the procurement processes for an improved customer-service focus.	Vehicle Maintenance	Immediate	Indeterminable
Recommendation 4.9 The Parts facility used by the Vehicle Maintenance Department needs to be reorganized to make more efficient use of space. In addition, non-productive inventory should be considered for disposal.	Vehicle Maintenance	Near-term	\$25-100
Recommendation 4.10 The Vehicle Maintenance Department should consider upgrading its inventory control system.	Vehicle Maintenance	Long-term	Indeterminable
Recommendation 4.11 CMTA should consider adding an Inventory Control Manager position.	Vehicle Maintenance	Long-term	\$50-75
Recommendation 4.12 The Vehicle Maintenance Department should consider increasing the number of supervisors in its work force.	Vehicle Maintenance	Near-term	\$75-200

<sup>2</sup> In some cases, the Estimated Fiscal Impact is “indeterminable” because the recommendation requires CMTA to analyze and select a strategy from among options of varying degrees of complexity, effort, and cost. At this time, the number of unknown factors precludes the development of a reasonable and accurate cost estimate.

<b>Recommendation</b>	<b>Responsible Department</b>	<b>Implementation Timeframe</b>	<b>Estimated Fiscal Impact<sup>1</sup> [x1,000]</b>
Recommendation 4.13a The Vehicle Maintenance Department needs to fill the 14 additional mechanics positions authorized in its fiscal year 2005 budget.	Vehicle Maintenance	Near-term	Included in fiscal year 2005 budget.
Recommendation 4.13b The Vehicle Maintenance Department should review its current two-shift schedule and four-day per week, 10-hour workday schedule, and strongly consider going to a three-shift operation that uses a five-day per week, eight-hour workday, so that mechanics can be used more efficiently.	Vehicle Maintenance	Near-term	Indeterminable
Recommendation 4.14 The Vehicle Maintenance Department needs to continue to use its newly developed reports as a management tool.	Vehicle Maintenance	Ongoing	None
Recommendation 4.15 As part of the ITS project, CMTA should select a radio system which best meets its current needs for voice and its long range strategy in supporting data transmission via radio or broadband communications.	Operations	Near-term	Indeterminable
Recommendation 4.16 The CMTA should consider upgrading the fueling system and controls at the 2910 East 5th Street facility.	Operations	Long-term	Indeterminable

## 6. Glossary

Capital Metropolitan Transportation Authority's (CMTA's) Quadrennial Performance Audit was conducted in accordance with Texas Transportation Code §451.454. The Computation of Performance Indicators required by §451.454 appropriately referred to the performance indicator definitions included Transportation Code §451.455, as described below in alphabetical order:

**Average Vehicle Occupancy** – Computed by dividing the annual passenger miles by the number of miles traveled by authority revenue vehicles while in revenue service for the same period. The annual passenger miles are computed by multiplying the annual passenger trips and the average distance ridden by passengers during the same period.

**Fare Recovery Rate** – Computed by dividing the annual revenue, including fares, tokens, passes, tickets, and route guarantees, provided by passengers and sponsors of passengers of revenue vehicles, by the operating cost for the same period. Charter revenue, interest income, advertising income, and other operating income are excluded from revenue provided by passengers and sponsors of passengers.

**Number Of Accidents Per 100,000 Miles** – Computed by multiplying the annual number of accidents by 100,000 and dividing the product by the number of miles for all service, including charter and non-revenue service, directly operated by the authority for the same period. In this subsection, "accident" includes (1) a collision that involves an authority's revenue vehicle, other than a lawfully parked revenue vehicle, and that results in property damage, injury, or death; and (2) an incident that results in the injury or death of a person on board or boarding or alighting from an authority's revenue vehicle.

**Number Of Miles Between Mechanical Road Calls** – Computed by dividing the annual number of miles for all service directly operated by an authority, including charter and non-revenue service, by the number of mechanical road calls for the same period. In this subsection, "mechanical road call" means an interruption in revenue service that is caused by revenue vehicle equipment failure that requires assistance from a person other than the vehicle operator before the vehicle can be operated normally.

**On-Time Performance** – Computed by determining an annual percentage of revenue vehicle trips of revenue vehicles that depart from selected locations at a time not earlier than the published departure time and not later than five minutes after that published time.

**Operating Cost** – An authority's costs of providing public transit service, including purchased transit service not performed by the authority, but excluding the costs of (1) depreciation, amortization, and capitalized charges; (2) charter bus operations; and (3) coordination of carpool and vanpool activities.

**Operating Cost Per Passenger** – Computed by dividing the authority's annual operating cost by the passenger trips for the same period.

**Operating Cost Per Revenue Hour** – Computed by dividing the annual operating cost by the total of scheduled hours that authority revenue vehicles are in revenue service for the same period.

**Operating Cost Per Revenue Mile** – Computed by dividing the annual operating cost by the number of miles traveled by authority revenue vehicles while in revenue service for the same period.

**Passenger Trips** – The number of all passenger boardings, including transfers, but excluding charter passengers and carpool and vanpool passengers whose trips are only coordinated by an authority.

**Revenue Service** – The time an authority revenue vehicle is in service to carry passengers, other than charter passengers.

**Revenue Vehicle** – A vehicle that is (1) used to carry paying passengers; and (2) operated by an authority or as a purchased service.

**Sales And Use Tax Receipts Per Passenger** – Computed by dividing the annual receipts from authority sales and use taxes by passenger trips for the same period.