

May 14, 2001

Board of Directors
Metropolitan Transit Authority
130 Nestor Street
Nashville, TN 37210

Report of Internal Audit Section

Dear Metropolitan Transit Authority Board Members:

We have recently completed a performance audit of the Metropolitan Transit Authority (MTA). According to the *Government Auditing Standards* issued by the Comptroller General of the United States, “a performance audit is an objective and systematic examination of evidence for the purpose of providing an independent assessment of the performance of a government organization, program, activity, or function in order to provide information to improve public accountability and facilitate decision-making by parties with responsibility to oversee or initiate corrective action.” A performance audit is different than financial statement audits, which are limited to auditing financial statements and controls, without reviewing operations and performance. In performing this audit, we retained John T. Doolittle & Associates, Inc. to perform an audit under our direction. Their report dated May 2001 is included with this report.

The Metropolitan Transit Authority (MTA) is a component unit of the Metropolitan Government and was created in 1953 to supervise, regulate and maintain jurisdiction over public transit in the City of Nashville. MTA is governed by a five member board appointed by the Mayor and approved by the Council. The Metropolitan Government partially funds MTA’s annual operating and capital budgets. MTA currently employs an active fleet of approximately 140 buses, vans and trolleys serving approximately seven

million riders annually. Other than the resident executive director, management and personnel operating the system are employees of the private non-profit corporation known as the Davidson Transit Organization. The current executive director is an employee of a private contractor, McDonald Transit Management.

Based on the most recent audited financial statements, MTA's summarized balance sheet and operating results for the 2000 and 1999 fiscal years were as follows.

	<u>June 30, 2000</u>	<u>June 30, 1999</u>
Total Current Assets	\$ 6,844,920	\$ 6,654,482
Property and Equipment	24,253,422	24,341,480
Other Assets	<u>401,715</u>	<u>495,357</u>
Total Assets	<u>\$31,500,057</u>	<u>\$31,491,319</u>
Total Liabilities	\$ 7,252,485	\$ 5,978,117
Fund Equity	<u>24,247,572</u>	<u>25,513,202</u>
Total Liabilities & Fund Equity	<u>\$31,500,057</u>	<u>\$31,491,319</u>
Operating Revenues	\$7,754,466	\$7,022,565
Local Operating Assistance	8,084,700	7,668,700
State Operating Assistance	2,987,328	2,237,328
Other Non-operating Revenues	<u>306,866</u>	<u>288,152</u>
Total Revenues	19,133,360	17,216,745
Total Expenses (including depreciation)	<u>28,078,826</u>	<u>25,065,707</u>
Total Net Loss	(8,945,466)	(7,848,962)
Add: Depreciation charged to Contributed Capital	<u>8,735,346</u>	<u>7,778,490</u>
Net Loss, Exclusive of Depreciation	<u>(\$ 210,120)</u>	<u>(\$ 70,472)</u>

Internal Audit typically addresses audit reports to and obtains responses from the department head and the board or commission overseeing the department audited or, for departments without a board or commission, the department head and the mayor. Since the current executive director of MTA is an employee of a private contractor, this report is being addressed solely to the Metropolitan Transit Authority Board of Directors.

Objectives, Scope, and Methodology

This audit represents the first comprehensive performance audit of the Metropolitan Transit Authority. The overall objectives of this performance audit were as follows.

- Review performance outcomes and controls in key operational and financial areas.
- Conduct a peer group benchmarking analysis comparing and ranking MTA's efficiency, effectiveness and funding.
- Examine organizational efficiency and effectiveness.
- Develop findings and recommendations for any areas where performance could be improved.

The scope of the work included MTA's primary operations, and the benchmarking focused on fiscal year 1999 financial results, which was the most recent full year of data available for MTA and the selected peers when the work began. Certain other audit work and analyses required the consideration of financial results, performance and operations outside of that time period.

The methodology employed throughout this audit was one of objectively reviewing various forms of documentation, including written policies and procedures, financial information, Board minutes and various other forms of data, reports and information available from MTA and other sources, including federal transportation databases. Various aspects of MTA operations were directly observed, and Board members, employees and other stakeholders were interviewed.

We performed the audit procedures in accordance with generally accepted government auditing standards.

Findings and Recommendations

We found that MTA's public funding and level of service per capita were generally in line with comparable peer systems. Overall costs in relation to the level of service provided were also in line with peers. However, MTA's level of service provided in relation to the service area is noticeably lower than the peers, attributable to MTA's much larger service area. At the same time, MTA's total miles of service provided compares favorably with the peers. With regard to MTA's operations, we found several key functions that needed improvement, including overall governance, financial management, marketing, customer service, planning and information technology.

Following is an overview of the more significant individual findings and recommendations that are addressed in more detail in Doolittle & Associates May 2001 report that is included with this report. The collective annual financial impact of the recommendations is net additional expenses related to administrative salaries totaling

approximately \$325,000. One-time costs of approximately \$250,000 related to information technology are also recommended.

1. Strategies for key Board, management and organizational arrangements

Doolittle & Associates' analysis identified several areas where improvements to the overall MTA operations would result from changes to certain institutional arrangements. These include:

- Revising the Metropolitan Charter provisions controlling MTA.

The current charter provisions are nearly 50 years old and do not provide a solid policy foundation for a modern public transit organization. MTA has evolved from a regulatory body to the primary transit organization for the county. MTA's current operation of the fixed route bus service, paratransit, car and van pools, magnet school and special event services, as well as involvement in regional planning activities are all responsibilities assumed under the implied powers of the charter phrase: "owning and operating a public transit system".

- Expanding the MTA Board from five members to seven.

In addition to adding two new voting members, consideration should be given to including Metro's Director of Finance and Planning Director as ex officio, non-voting members. This would increase the capacity of the Board and allow for the creation of functioning committees, while assisting the Board in dealing with longer-term planning, financial and other strategies. It would also enhance the coordination and linkages between MTA, Metro and other stakeholders.

- Hiring an executive director to work for the MTA Board.

This position would manage the affairs of MTA, provide leadership on regional transit and transportation issues, oversee the technical and professional staffs and manage all contract operators. Under the current arrangement, there is no MTA employee providing guidance to the Board. The Board must rely exclusively on the outside contractor, McDonald Transit, or managers from the captive non-profit corporation, Davidson Transit Organization. The cost to hire a staff executive director is estimated to be \$125,000 annually, including benefits.

- Staffing key management and professional positions.

Lack of management and professional staff is limiting MTA's capacity to effectively manage the current operation and expand its role in the region's public transit landscape. There is currently no marketing director, no finance director and only a small planning function. The contract executive director is involved in the details of several operational areas that would be more appropriate for other

positions. Administrative functions are normally more heavily staffed in transit organizations the size of MTA. The peer analysis showed that MTA's administrative costs were 11.7% of total costs, as compared to the peer average administrative costs of 19.5% of total costs. Additionally, MTA's administrative costs per mile were \$0.52, compared to the peer average administrative cost per mile of \$0.69. Several of the audit findings can be attributed to the lack of staffing, and specific staffing recommendations are addressed with those findings throughout this report. The new management level positions should be hired by and report to the staff executive director.

- Examining the provisions of the McDonald contract to ensure MTA is receiving the full benefit of the contract.

The August 1998 contract with McDonald Transit stipulates a flat fee of \$12,350 monthly for the first year, moving to \$14,200 per month in the fifth year of the contract. These fees cover the services of the contract executive director in addition to a range of optional technical and professional consulting services. Either McDonald or MTA can determine when such services should be provided. The types of services covered include insurance requirements and negotiations of coverage, internal financial and management audits, labor relations and collective bargaining, and public awareness and marketing campaigns. While McDonald provides some of these services as a matter of standard practice, labor negotiations for example, it is not evident that MTA has requested an appreciable level of other services from McDonald.

Additionally, the current McDonald contract covers the five-year period August 1998 through August 2003. This five-year contract is at odds with the MTA procurement policies, which limit all contracts for goods or services to three-years with a maximum of two, one-year extensions. The current five-year contract should be reviewed in light of possible compliance issues noted.

2. Peer review analysis of service levels and public funding

The primary objective of the peer review study was to compare MTA with a group of transit systems with similar general characteristics. This group of twelve systems is the "comparable peer" group. A second set of peers was selected representing much larger transit systems. This set, labeled "large systems" group, was selected to examine the differences between MTA and much larger systems where substantial commitments have been made to public transit. A third group of cities commonly used for various economic and civic characteristic comparisons was also analyzed. This group is labeled as the "policy group."

Large Systems

The systems included in this group were Baltimore, Cleveland, Dallas, Denver, Houston, Milwaukee, Minneapolis-St.Paul, Oakland, Pittsburgh, Portland, Seattle and St. Louis.

<u>Key Service & Funding Statistics</u>	<u>Average for Large Systems</u>	<u>MTA</u>
Revenue miles per square mile	46,473	11,259
Revenue miles per capita	15.7	9.5
Annual rides per capita	65.1	12.2
Total subsidies (fed, state, local- \$millions)	\$231	\$24
Total subsidies per capita	\$153	\$42

As shown in the statistics highlighted here, the large systems are significantly larger overall. Many of these systems have dramatically larger bus operations, combined with rail and other transit modes typical of major regional urban systems. On a per capita basis, annual ridership is five times higher than MTA.

Policy Group

Included in the policy group were large systems like Austin, Orlando and Indianapolis, as well as small systems such as Chattanooga and Greenville. As a result, making valid comparisons between MTA and the average of these systems is problematic. Additionally, the larger systems in this group could easily fit in the “large systems” while some of the smaller systems were captured in the “comparable peers” below. What the data shows is per capita funding that is over 50% higher than MTA’s, with two-thirds more revenue miles per capita.

Comparable Peers

The systems included in this group were Birmingham, Charlotte, Chattanooga, Daytona, Indianapolis, Knoxville, Lexington, Memphis, Mobile, Raleigh, Richmond, and West Palm Beach. Doolittle & Associates identified systems closest to MTA in characteristics such as population, service area, demographics and topography. Additionally, all major Tennessee systems were included. These comparable peers were analyzed in more detail than were the large systems or policy group systems.

<u>Key Service & Funding Statistics</u>	<u>Average for Comparable Peers</u>	<u>MTA</u>
Revenue miles per square mile	18,952	11,259
Revenue miles per capita	10.0	9.5
Annual rides per capita	13.6	12.2
Total subsidies (fed, state, local- \$millions)	\$18	\$24
Total subsidies per capita	\$38	\$42
Local subsidies per capita	\$17	\$15

The data for the comparable peer group shows MTA near peer averages for revenue miles per capita and annual rides per capita. MTA's total subsidies from all sources were above the peer average but slightly below the average for per capita local funding. One of the key statistics from the review shows MTA with 59% of the service density of the peers. This is driven at least partially by the larger than average service area covered by MTA. MTA's service area of 484 square miles, the 3rd largest out of the 13 comparable peer systems, is 29% larger than the average for the peers. The two comparable peer systems with larger service areas also had low system density. MTA's total service miles of 5.4 million are approximately 13% greater than the average of 4.8 million miles for the peers.

The conclusions that can be drawn from the data suggest that MTA's funding and service per capita are comparable to the averages for the peers but that MTA's service levels for its service area are lower. This is because of the large size of MTA's service area as compared to the comparable peers' averages. Any meaningful increase in service would require additional public funding.

MTA should work with the administration and other stakeholders to develop a long-range strategic plan, including multi-year operating and capital budgets, taking into account projected economic development, population trends, and land use. Comprehensive planning is crucial for building consensus and support for policy decisions surrounding public transit and for building support for any additional public funding that would be needed for significant service expansions.

3. Peer review analysis of cost

In addition to analyzing service levels and funding, another objective of the peer analysis was to examine key cost metrics for the agency. Following are key cost

statistics for the average of the large systems, where applicable, for the average of the comparable peers and for MTA. Because of the impact of the additional cost to catch up on deferred maintenance during 1999, maintenance expenses were normalized in order to present MTA's expenses more in line with what average expenses should have been and are expected to be going forward.

	<u>Large Systems</u>	<u>Comparable Peers</u>	<u>MTA</u>
Operating expense per revenue mile	\$6.31	\$3.43	\$3.67
Operating expense per capita	\$92.00	\$34.45	\$34.89
Bus operating expense per passenger mile	N/A	\$.61	\$.63
Top driver wage	N/A	\$14.78	\$15.61

As expected, data from the review indicate that MTA's costs per capita and per revenue mile are significantly below the average of the large systems. When compared to the comparable peer averages, however, MTA's costs are approximately 7% higher on a per revenue mile basis than the peers. Driver wages account for much of this difference. Top driver wages, which serve as a proxy for measuring overall wage scales, are 5.5% higher for MTA than for the average for the peer group. The peer averages are lowered by the inclusion of the smaller market systems of Chattanooga, Knoxville, Lexington and Mobile. MTA wages are comparable, however, to the larger market systems in the comparable peer group. The other notable difference between MTA and the peer average is the overall system service area. The size of the service area impacts the level of "dead head" miles associated with moving buses to and from their assigned routes. MTA has a service area that is 29% larger than the average for the peers. This has translated into "dead head" miles that are approximately 2% higher than the peer average. Wage differentials and "dead head" miles account for approximately 5% of the difference in costs per revenue mile between MTA and the comparable peer average.

When looking at the bus system in isolation, costs per passenger mile are 3% higher for MTA than for the peers once 1999 maintenance costs are normalized. Again, driver wages and "dead head" miles would account for this difference.

In summary, MTA's cost of providing service is substantially in line with comparable peer averages on both a per mile and per capita basis. Since MTA's service area is 29% larger than the average of the comparable peers, it would require a meaningful increase in operating costs to achieve the service density, as measured by miles of service per square mile, of the comparable peers. Since costs per capita are already in

line with peer averages, an increase in funding would drive this metric above comparable peer averages.

4. Budgeting, accounting and cash management

Recommendations have been made in a number of areas related to cash management, operating and capital budgeting, and management and Board financial reporting practices. One factor impacting this area is the fact that there is not a finance director on staff, and the contract executive director has more responsibility for this area than is typical for that position. Following are some of the more significant issues noted.

- The practice of capitalizing unbudgeted maintenance expense should be examined. This practice distorts true operating results, thereby making budgeting problematic, and it also absorbs capital funds that could be used for other capital expenditures. Unbudgeted capitalized maintenance expenses for fiscal years 1997 through 2000 were \$947,599, \$990,512, \$2,204,935, and \$724,586, respectively. Additionally, from 1997 through 2000, over \$13,000,000 in budgeted and unbudgeted capital funding was used for maintenance, which reduced resources available to purchase buses. The use of capital funds for maintenance needs to be carefully coordinated with long range budgeting and fleet replacement plans.
- The budget process should be retooled in light of consistent budget shortfalls and material account level variances. Unfavorable budget to actual net income variances - before the capitalization of unbudgeted maintenance expenses - for fiscal years 1997 through 2000 were \$1,192,684, \$937,758, \$2,429,007 and \$735,160, respectively. For each of those years, actual revenues did not meet budget expectations, and actual expenses exceeded the budget. Further, the budget is revised throughout the year without reporting clear and consistent tracking back to the original budget so that the Board can maintain an awareness of why forecasts were changed and how the operation is being managed. The cumulative total of year-end budget to actual statements provided to the Board for 1997 through 2000 can be summarized as follows.

	Budget	Actual
Total revenues	\$69,620,754	\$68,904,290
Total expenses	<u>77,734,542</u>	<u>82,312,687</u>
Deficit before capitalization	(8,113,788)	(13,408,397)
Budgeted capitalization	<u>7,747,443</u>	<u>7,747,443</u>
Surplus/(deficit) after Budgeted capitalization	(366,345)	(5,660,954)

Add: unbudgeted maintenance		
Expense capitalized	_____ -	<u>4,867,632</u>
Final surplus/(deficit)	<u>\$ (366,345)</u>	<u>\$ (793,322)</u>

Additionally, the Board is provided the budget to actual summary based on unaudited balances. Although the audited financial statements are provided to the Board, the budget to actual summary is not updated after the audited financial statements are issued.

- Enhancements to the financial reporting package provided to the Board are needed. Each month's budget is stated simply as one-twelfth of the annual budget. Since revenues and expenses do not occur evenly throughout the year, this leads to an inaccurate portrayal of monthly financial position. Additionally, there is no comparison of year-to-date actual financial results to the cumulative year-to-date budget. Variances reported are not clearly identified as favorable or unfavorable, and financial reports often present bottom line deficits as a positive number instead of a negative number. All capital grant funds received should be shown as revenue items, even if used for capitalized maintenance, and not as credits to materials expense. Finally, the report to the Board does not always include an overall operating surplus or deficit.
- MTA's cash position has deteriorated significantly over the past several years to the point of insolvency. Weaknesses in the budgeting process discussed above, coupled with the absence of long-range operating and capital budget planning and a decision to utilize operating reserves, contributed to MTA's negative cash flow. The agency sought and secured a line of credit from a commercial lender to alleviate working capital shortfalls. After becoming aware of MTA's action, the Metro Legal department determined the agency lacked legal authority to obtain this financing. The Metro Finance Department has recently developed a mechanism for stabilizing MTA's cash requirements. However, MTA still needs to work with Metro Finance to develop a comprehensive capital budget and a procedure for securing local matching funds in advance of MTA making capital commitments requiring Metro funding.
- MTA should initiate a more aggressive grant draw down program, which could save MTA up to \$100,000 annually in interest expense.

These issues should be addressed in conjunction with hiring a director of finance and administration with an annual estimated salary of \$100,000, including benefits.

5. Analysis and reporting of service cost, cost recovery and fare setting practices

Fare policy is a difficult issue for most transit boards because it places two of the most important Board responsibilities, ridership generation and fiscal prudence, into potential conflict. It is not unusual to raise fares and lose ridership, but enhance the revenue profile of a transit agency. To help make the fare setting process more routine, many boards establish a policy that sets fares as a percentage of operating costs. As costs change, fares change automatically. MTA appears to have policies governing fare recovery of individual services, but there is not a clearly stated cost recovery policy for the system as a whole. MTA's fare structure, however, is similar to other systems', and MTA has a good mix of single fares, 20-ride tickets and monthly and other passes.

To the extent that MTA considers cost recovery in making route and fare decisions, the Board may not be considering all pertinent information. MTA's cost methodology excludes certain components when analyzing and reporting the cost of service. Cost models serve as the foundation for service offerings and as inputs to pricing decisions. This includes special events like the Titan's shuttle service, as well as regular bus routes. As an example, MTA cost and priced the Titans shuttle service at approximately \$32,000 per game. Doolittle & Associates identified costs surrounding the November 5, 2000 home game and determined that fully allocated costs were approximately \$50,000 after including an allocation of fixed "overhead" costs, adjustments for bus drivers earning overtime pay, and the inclusion of capitalized maintenance expenses. Assuming eight regular season home games per season could yield fully allocated costs of approximately \$140,000 above the cost identified by MTA.

Another example is the use of marginal cost analyses to evaluate the regular bus routes. MTA has established thresholds for cost recovery in their route analysis using a straight marginal cost per hour of approximately \$45. Doolittle & Associates have proposed a more accurate estimated cost per hour between \$55 and \$65. This range, again, is based on including capitalized maintenance expense, plus an additional charge for fixed "overhead" expenses. The recent Urbitran study used a cost of \$54.36 to reflect all variable costs, including capitalized maintenance expense, to appropriately present the incremental cost of service expansion recommendations.

MTA's cost model can be refined further by factoring additional variables such as miles traveled rather than simply hours of operation. Doolittle & Associates observed that by using more sophisticated cost models for evaluating current route service, four routes would fail the MTA established thresholds for service offering.

Pricing decisions are complex, involving a number of economic and public policy factors. Cost analysis is typically only one of the inputs in the development of a pricing model. In fact, when compared to peers, MTA's average fare is 33% higher than the peers' average fares, and MTA's revenue per passenger is 29% higher than the peers' average revenues per passenger. Additionally, MTA increased fares by 10% over five years through 2000, and the last fare increase resulted in only a modest revenue increase. All of this suggests that MTA's fares are currently near their upper

limit. However, special services, such as the Titans service, should be reevaluated to determine whether pricing covers related costs, unless there is a policy reason to do otherwise.

It is recommended that a more sophisticated set of tools be developed and used to evaluate and report on service offerings, especially in the context of cost recovery discussions. In addition to capturing capitalized maintenance expenses and fully allocated costs, most transit system cost models include several other measures, such as express service variable costs to reflect the different nature of that service, models for seasonal or one-time service to reflect the impact on vehicles required for such service, and models to plan for substantial increases in service that would require major fixed cost increases related to facilities or supervisory personnel.

Additionally, service pricing is an area where a marketing research program can provide crucial intelligence to aid management and the Board in setting fares. Overall fare policies also consider any number of economic development, public policy and other factors and are always subject to changing circumstances. By developing and reporting on a more sophisticated set of cost models, including fully allocated costs, and incorporating market research in the analysis of fares, more informed policy decisions can be made regarding service offerings and pricing.

6. Overall marketing approach and customer service

MTA does not have a marketing department. The agency has chosen to delegate marketing activities to various MTA staff members and to contract for specific marketing services. This approach has primarily focused on promotion and advertising. More comprehensive marketing activity, including conducting research to identify service needs, understanding the local marketplace, providing input into pricing decisions, developing tools to measure results, as well as having a comprehensive approach to customer service, is needed.

Additionally, customer service at MTA is concentrated on the activities of the customer service centers and not on service delivery and market research. The current customer service activities are focused on the customer call handling function and include tracking comments and complaints, selling tickets, taking pictures for passes, providing general information, tracking the vanpool program, and conducting surveys. There are several specific recommendations regarding the operation of the customer service centers. These include the need to assess, and probably upgrade, the current call handling software, enhancing the processes by which customer complaints are investigated and tracked and by which customer survey results are measured, and better defining and meeting the needs of non-English speaking customers.

The audit also recommends the creation of an integrated marketing function that should be focused and organized under a new director of marketing. The concept of customer service should be expanded to include operational aspects of the business currently managed outside of the customer service department. For example, MTA's new Transit Guide defines safety, reliability, customer friendliness and efficiency as goals. These definitions should serve as the basis for developing appropriate customer service goals and measurement tools for each area. While some measurements are already reported, for example on-time performance and preventable accidents, these statistics are not presented in a manner that provides a complete picture of customer service. The marketing department should also coordinate the communication and information provided to customers about MTA's services, including publicizing new routes and maintaining consistency between current transportation services provided and route schedules and signage throughout the service area.

The cost of a marketing director position is estimated at \$75,000 annually, including benefits.

7. MTA's planning capacity

Planning in the context of a transit agency has a number of different, yet related meanings. Longer-range regional transportation planning is conducted by a consortium of local and regional agencies that include MTA. The contract executive director of MTA serves as the primary liaison to these regional planning efforts. On a more local level, planning relates to the service and scheduling function for the transportation fleet. This includes scheduling the individual buses and drivers and creating logical, efficient routing. Planning should also consider an enterprise's various financial and operational plans, both strategic and tactical, that provide a blueprint for guiding management, governance bodies, policy makers and funding agencies. Typically embedded in comprehensive strategic and tactical plans are long- and short-range operating financial plans, comprehensive capital and fleet replacement plans, load leveling maintenance planning, human and technology resource plans, and sales and marketing plans.

This audit found the overall bus routing and scheduling function working well. MTA was right at the average peer's passengers per revenue mile and per revenue hour worked. With regard to regional transportation planning, however, the contract executive director was attempting to fill the lead role in regional planning efforts while also being responsible for the daily operation of the transit fleet. An MTA staff executive director reporting to the MTA Board, recommended in number 1 above, should play the lead role in regional transportation efforts, allowing the contractor to focus on operating the transit system.

Overall, the lack of staff planning capacity within MTA makes planning difficult to balance and limits MTA's ability to effectively participate in regional transportation

and land use planning and to ensure that MTA's short- and long-range transit plans are appropriately integrated into the overall regional plan. MTA should hire a planning director and one or two staff planners, which will allow MTA to fill its role in regional planning efforts while engaging in broader service planning and market development efforts, as well as developing an overall strategic plan that incorporates all aspects of MTA's operational and financial plans. The need for an overall strategic plan is also discussed in number 2 above. MTA's planning should be done in concert with external stakeholders such as the Regional Transit Authority, the State, the Metro Planning Commission and other Metro departments, and it should be integrated with capital projects management. The annual salary and benefits for a planning director and for one staff planner are estimated at \$75,000 and \$50,000, respectively.

8. Bus maintenance program

The maintenance department is coming to the end of a major effort to catch up a substantial amount of deferred mechanical maintenance. From 1995 to 1999 annual maintenance expenses related to materials went from approximately \$860,000 to \$2,860,000, and annual wage expense went from \$1,760,000 to \$2,257,000, which included the addition of eleven mechanics. This effort has reduced the backlog list from 156 items in June 1997 to 11 items in January 2001. While the backlog of mechanical work has been reduced significantly, the body and paint work outstanding for the fleet remains substantial. Once this remaining work is completed, there should be a substantial reduction in maintenance expense in future years.

With regard to the fleet itself, MTA does not have a comprehensive fleet replacement plan in place. It was noted that the average age of MTA's fleet in 2000 was 8.8 years, compared to the industry standard of 6 years. Additionally, the number of different models in the fleet rose from 9 in 1995 to 14 in 2000. A large number of models, which can necessitate a large parts inventory, can have a negative impact on efficiency. One other observation about the fleet is that MTA's spares ratio of 20.5% is at the FTA guideline of 20%.

Going forward MTA will require a solid fleet management and maintenance plan that incorporates an adopted fleet replacement program, a supporting capital budget, and a utilization plan that levels the maintenance load. This planning process should also address the financial requirements required to support a normal maintenance program without resorting to unbudgeted capitalization of maintenance expenses and fluctuating year over year maintenance expense. Additionally, MTA should consider whether cost savings and other efficiencies would result by contracting tire maintenance and repair, which is a typical transit system practice. MTA may also want to consider whether additional efficiencies could be gained by revisiting the maintenance work shift schedule. Over half of the maintenance force is scheduled for the 8:00 a.m. to 4:00 p.m., Monday through Friday shift. Finally, MTA should

carefully evaluate maintenance staffing levels to ensure they are not excessive, now that deferred maintenance is essentially caught up, and consideration should be given to contracting the backlog of paint and body work to ensure those staffing levels are appropriate for a normal level of paint and body work once that backlog is caught up.

9. Procurement practices

MTA needs to rationalize its procurement policies and practices. The current purchasing policies are confusing regarding the position and authority of the purchasing agent. It is unclear if the purchasing agent is supposed to be a Metro Finance Department employee or someone within the MTA staff. Additionally, some staff with inventory control and other incompatible duties have significant purchasing authority. MTA tends to issue purchase orders for most procurements, as opposed to establishing contracts for recurring purchases, and MTA does not have a procurement card program in place.

MTA should clarify purchasing policies and work with Metro Purchasing to use Metro contracts whenever possible. To reduce administrative time and cost surrounding procurement, MTA should also implement a procurement card program and minimize the number of purchase orders used by bidding and developing contracts for recurring purchases. The agency should ensure segregation of duties surrounding procurement, inventory management, and payment approval by designating specific purchasing positions without inventory management responsibilities. In implementing these improvements, MTA should adopt and utilize the Metro Finance Department's policies, practices and contracts in place to the fullest extent possible.

10. Parts and supplies inventory management

MTA's overall inventory management system needs improvement. The inventory system does not interface with the accounting system. Some of the inventory on hand is not secured, and inventory levels are higher than average with approximately 9 months of stock on hand as compared to 6 months of stock, which is closer to what Doolittle & Associates consider to be the norm.

MTA needs to establish procedures with adequate controls over inventory and implement an automated system that would integrate the parts and supplies inventory system with the accounting and other systems to improve overall inventory management. MTA should also investigate the availability of contract vendors to maintain parts inventories to determine whether outsourcing stocking, controlling and

ordering parts inventories would be cost beneficial. Such arrangements are being used for local government fleets but have not yet become a common practice in the transit industry.

11. Capacity of “paratransit” service for riders with special needs

MTA may have performance issues regarding on-time delivery of paratransit service. Although there is not a clearly established on-time performance standard, on-time performance of 91% is reflective of performance that the Federal Transportation Agency has accepted as adequate. MTA’s on-time performance was at 84% during the audit. Additionally, MTA needs to improve the eligibility screening process for this service. This is important because once these services are delivered, customers can legally require them to continue. A review of 104 applications revealed that 74 of those applications were missing information or signatures, and Doolittle & Associates observed that MTA’s determinations of eligibility tend to be more lenient than required under federal guidelines. MTA may also be providing paratransit service where existing fixed route service with the necessary equipment could provide the service required by law. Finally, it should be recognized that MTA could legally raise the current price of these services to help defray service expansion costs. Improved eligibility and service analysis could improve on-time performance and other aspects of paratransit service.

12. Information technology

There were numerous situations noted pointing to the need for overall improvements in the area of information technology. Among the examples cited were the lack of support for an aging scheduling software application that is not Windows compatible, the lack of e-mail availability, the inadequacy of management information provided by the maintenance software, deficiencies in financial and other report writing systems and overall system connectivity issues. MTA should work with Metro’s Information Systems and Finance Departments to expedite the development and implementation of a sound, comprehensive information technology strategic plan. Given the critical nature of the scheduling system in particular and information technology in general, one-time expenses totaling \$250,000 are recommended to address scheduling software and the development of an information technology plan. Additional investments in technology are likely to result from such a plan.

13. Physical plant capacity

The MTA facility is located at 130 Nestor Street in Nashville. It was formerly an aircraft manufacturing facility that has been converted into a fleet transportation terminal by MTA. The maintenance operations, fuel depot, paint shop, and administrative offices are all housed at this facility. After the conversion from a manufacturing site to a fleet terminal, significant excess interior capacity remains under-utilized. Based strictly on observation, Doolittle & Associates estimated that as much as one third of the approximately 170,000 square feet available for fleet maintenance may be underutilized. To ensure this excess capacity is properly factored into Metro's short- and long-term facilities plans, MTA should work with the Metro Office of Facilities Planning and Construction Management. Ensuring excess facility capacity is considered in Metro's overall facilities planning will benefit MTA and other Metro departments.

The MTA Board response to the audit recommendations follows this report.

We greatly appreciate the cooperation and help provided by the management and staff of the Metropolitan Transit Authority and by the MTA Board throughout the course of this audit.

This report is intended for the information of the management of the Metropolitan Government of Nashville and Davidson County. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

Internal Audit Section

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