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STATE OF NEW YORK
OFFICE OF THE STATE COMPTROLLER

September 29, 2000

Mr. Luiz T. Kahl
Chairman
Niagara Frontier Transportation Authority
181 Ellicott Street
Buffalo, N.Y. 14203

Re: Report 2000-F-28

Dear Mr. Kahl:

Pursuant to the State Comptroller's authority as set forth in Article X, Section 5 of the State Constitution, we have reviewed actions taken by officials of the Niagara Frontier Transportation Authority (NFTA) as of August 29, 2000 to implement recommendations contained in our audit report, *The Niagara Frontier Transportation Authority Metro Division Bus Maintenance Operations*, (Report 98-S-37) issued September 9, 1999. Our prior audit examined whether NFTA was adequately monitoring the productivity of its bus maintenance staff.

The New York State Legislature created NFTA in 1967 to promote the development and improvement of transportation and related services within Erie and Niagara counties. The NFTA operates the Greater Buffalo International Airport, the Niagara Falls International Airport, the Port of Buffalo, the Metropolitan Transportation Center, and the Niagara Frontier Transit Metro System, Inc. NFTA has two operating divisions; the Authority and Metro. The Authority oversees the Port of Buffalo and the airports in Buffalo and Niagara Falls. Metro oversees bus networks in Erie and Niagara Counties and a light rail system in Buffalo. NFTA is governed by an eleven-member Board of Commissioners.

Metro operates a fleet of 332 buses, that receive maintenance services at three airports (Frontier, Buffalo, Cold Spring) located in and around Buffalo. The three garages provide routine bus maintenance such as oil changes, engine tune-ups and cleaning, and repairs to brakes, lights, and glass. In addition, the buses are periodically inspected, and any defects identified during the inspections are repaired. Metro also operates a heavy maintenance shop at the Cold Spring location. The shop provides major overhauls to engines and transmissions, body work and painting. Shop personnel also repair and recondition certain

defective parts removed from buses such as transmissions, alternators and radiators. Metro's Maintenance Management Information System (MMIS) which is used for a number of purposes, including scheduling bus inspections and maintaining an electronic history of the maintenance performed on each bus in the fleet.

Summary Conclusions

Our prior audit found that Metro had not established procedures for monitoring the productivity of the bus maintenance staff such as monitoring the time spent on routine bus maintenance tasks against job standards. We also determined that Metro's skilled mechanics may spend a significant portion of their work day on tasks not commensurate with their skills. Even when the mechanics performed tasks commensurate with their skills, we found indications some of the tasks may not be performed efficiently. We concluded that Metro may have more skilled mechanics than are needed for its bus maintenance work load.

Our follow-up review found NFTA has made progress in implementing the ten recommendations. This was done primarily by awarding through Request-for-Proposals (RFP) two consulting contracts; one for reviewing each inspection, repair, maintenance and rebuilt part task and function and establishing a suitable time standard. The second contract was for developing, implementing and training staff in an electronic database system which captures the kind of work performed, the time spent and the assigned employee for each maintenance task and function.

Summary of Status of Prior Audit Recommendations

The ten prior audit recommendations have been partially implemented.

Recommendation 1

Perform a detailed study to determine the number and type of staff needed for bus maintenance operations. Base this study on the amount and type of work that is actually done in maintaining Metro's buses.

Status - Partially Implemented

Agency Action - The NFTA issued an RFP with three Addendums; the final Addendum was issued December 29, 1999. On April 17, 2000, the NFTA Board approved a resolution awarding a contract not to exceed \$125,669 to Draycott Consulting Inc. Our review of the consultant's June 2000 and July 2000 Progress Reports indicated they were working on the following tasks:

- Initiate the Project and Finalized Project Plans.
- Review current maintenance policies and procedures including conducting interviews with the three Operations Managers and conduct reviews of current parts manuals.

- Perform a detailed analysis of current maintenance activities including collecting data in preparation for analyzing preventive maintenance frequency and developing work measurement standards.
- Develop maintenance standards including procedures and manuals for classic rear wheel suspension replacements, classic radius rod rear lower replacements, classic rear wheel brake relines and classic king pin replacements.

Tasks to be accomplished during the next few periods included reviewing procedures with mechanics selected from each of the three bus maintenance facilities, continuing to develop new maintenance procedures, continuing to analyze data to develop work measurement standards and continuing to evaluate maintenance control and management processes and accounting practices.

A second resolution was forwarded to the Board requesting an increase in the contract amount to \$178,874. The revised contract amount was scheduled to be considered at the Board's September 18, 2000 meeting.

Recommendation 2

To the extent that inefficiencies result from contract restrictions, partner and negotiate with representatives from the collective bargaining unit to transition towards reductions in the inefficiencies that are reasonably controllable.

Status - Partially Implemented

Agency Action - NFTA officials provided an extract of the major priorities for contract negotiations as revised on June 23, 2000. One strategy was to obtain increased flexibility in scheduling the maintenance staff. The anticipated organizational impact of this change was to improve productivity allowing a reduction over time in the current staffing level from 90 workers to 85 workers. This will result in an annual cost savings of \$245,000.

Recommendation 3

Monitor MMIS data to ensure workers perform appropriate tasks for their job title.

Status - Partially Implemented

Agency Action - NFTA issued RFP 3053 for a Computer Maintenance Management System (CMMS) with the final addendum being submitted on May 9, 2000. On August 21, 2000, the Board of the NFTA authorized a contract not to exceed \$1,324,030 to EAM Resources (Mincom's Value

Added Reseller). The RFP indicated the new computer system will incorporate all activities related to maintenance, inventory and warehouse management, purchasing, operations management warranty tracking, workflow management and reporting.

The key issue is that Metro monitors the CMMS to determine that, to the extent possible - skilled mechanics mostly work on tasks commensurate with their abilities. The new CMMS software will provide NFTA and Metro management the tools to achieve the following benefits:

- Increase in maintenance personnel productivity
- Increase in equipment availability
- Reduction in overtime and labor
- Reduction in emergency requisitions
- Reduction in material usage
- Reductions in inventory
- Optimize vehicle life cycle performance and reduce downtime
- Deployment of resources more effectively through use of maintenance standards, work flow management and scheduling thus maximizing warranty cost recovery
- Empower management and staff by providing real-time access to information

Recommendation 4

Develop the MMIS so that data about bus maintenance operations can be used by managers to monitor the productivity of the operations.

Status - Partially Implemented

Agency Action - The CMMS will indicate the cumulative and position specific operating statistics for all components. The information supports detailed pre/post rebuild performance analysis at every level and detailed operating cost information for all equipment classes. The proposed system identifies high cost or problematic areas based on trending data. Downtime and root cause analysis of unscheduled maintenance can be performed. The system uses job standards or benchmarks for material requirements, job duration, skill/trade requirements and costs. The system allows the user to record the type, frequency and duration of road calls and other downtime (downtime recording provides an operational view of how much time is lost and the reasons for the lost time) events. The Executive Alert reporting option is designed to enable managers to quickly and easily monitor key performance indicators.

Recommendation 5

Using historic information, develop job standards or reasonable expectations for routine bus maintenance tasks.

Status - Partially Implemented

Agency Action - The contract awarded to Draycott Consulting will establish reasonable performance standards for each maintenance, repair, inspection and rebuilding function.

Recommendation 6

Use the MMIS to monitor the productivity of bus maintenance operations and to identify areas for systemic improvement.

Status - Partially Implemented

Agency Action - In addition to the performance standards being developed by Draycott Consulting, NFTA indicated the Executive Alert reporting option is designed to enable managers to quickly and easily graphically monitor key performance indicators. Additional efficiencies will be achieved with the new system as mechanics can identify on-line, in advance of performing the work, what tools will be required, what safety precautions must be taken, and be able to requisition necessary parts, as well as reference repair instructions. An example, of the elements provided by the new system was instructions for repairing a mechanically sealed bare shaft pump with the 24 tools and parts necessary for the repair and an illustrated 14-step disassembly procedure.

Recommendation 7

If a significant amount of time is spent repairing defects during routine bus inspections, record repair time separately on the MMIS.

Status - Partially Implemented

Agency Action - NFTA officials indicated **Best Practice** procedures have been implemented at garage locations. Inspections are pulled randomly to monitor uniformity. Differences are addressed with management and staff. NFTA officials provided listings that document their review of inspection work orders at the Babcock, Cold Spring and Frontier bus depots. The new CMMS system will also report on variances from performance standards.

Auditors' Comment - It is unclear from the response whether repairs made during routine inspections are being recorded separately on the MMIS.

Recommendation 8

Using workforce and cost information for rebuilt parts, monitor the program to identify areas where efficiency and economy may be improved.

Status - Partially Implemented

Agency Action - NFTA officials indicate standards for rebuilt work are being developed. The new system will allow tracking of workforce and cost information that will be the basis for system and management analysis.

Recommendation 9

Establish controls for ensuring that the data entered on the MMIS is authorized, complete, accurate, and timely.

Status - Partially Implemented

Agency Action - NFTA officials are randomly reviewing samples of work orders. In addition, NFTA officials provided a 15-page print-out listing the start date, completion date, description of work performed, the total hours worked and the number of employees assigned. NFTA also provided a seven page list of the Defect Codes which are inputted into CMMS.

Auditors= Comment - We believe Metro officials need to review the accuracy of the information that is inputted into CMMS.

Recommendation 10

Provide staff with adequate training about the MMIS.

Status - Partially Implemented

Agency Action - NFTA officials indicated they are currently working with each location on continuous improvement based on the results of their review of a random sampling of work orders. NFTA officials indicate that training will be done as part of the implementation process. Mincom's Training Documentation and Solution Testing indicate, ~~A~~During this period (while the data files are being prepared) samples of the data will be manually loaded from the mapping files into the test system. Using this data, training documentation will be tailored to specific job descriptions. NFTA key users on the project team will be required to test the training documentation and further ensure the MMIS solution is a fit for the organization. At this point, NFTA will be able to clearly see and understand the proposed

data mapping, training documentation and solution fit. Key user training will take place during this period.”

Auditors= Comment - We believe as part of the improvement process, NFTA technology officials must be available to provide assistance and resolve problems for key users after the training period is completed.

The major contributor to this report was Abraham C. Markowitz.

We would appreciate your response to this report within 30 days, indicating any additional actions planned to taken to address the recommendations discussed in this report. We also thank NFTA management and staff for the courtesies they extended to us during this review.

Very truly yours,

Carmen Maldonado
Audit Director

cc: Charles Conaway