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**INDEPENDENT STATE AUDITOR'S REPORT ON
CERTAIN ACTIVITIES OF THE
MERRIMACK VALLEY REGIONAL TRANSIT
AUTHORITY
JULY 1, 2006 TO DECEMBER 31, 2007**

**OFFICIAL AUDIT
REPORT
AUGUST 19, 2008**

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In accordance with Chapter 11, Section 12, of the Massachusetts General Laws, we have conducted an audit of certain activities of the Merrimack Valley Regional Transit Authority (MVRTA) for the period July 1, 2006 to December 31, 2007. MVRTA was established in 1974 pursuant to the provisions of Chapter 161B of the Massachusetts General Laws. MVRTA provides fixed route bus service and paratransit service to the cities of Haverhill, Lawrence, Methuen, and Newburyport and the towns of Amesbury, Andover, Boxford, Georgetown, Groveland, Merrimack, Newbury, North Andover, Rowley, Salisbury and West Newbury by contracting with vehicle maintenance and operations providers. MVRTA's activities are managed by an Administrator appointed by an Advisory Board. The Board is comprised of representatives appointed by the chief political officer of his or her respective member community. The Administrator oversees a staff of one full-time employee and one part-time employee.

The objectives of our audit were to (1) review and analyze MVRTA's internal controls over receipts and expenditures, including administrative costs and expenses, to determine their adequacy; (2) review MVRTA's controls over contracts to determine if proper bidding, awarding and oversight procedures are in place; (3) determine MVRTA's compliance with applicable laws, rules and regulations; and (4) review MVRTA's recent independent public accountant audit reports and management letters to determine whether they were conducted in compliance with generally accepted government auditing standards, and to follow-up on any issues identified.

Based on our review, we have concluded that except as noted in the Audit Result section of this report, during the 18-month period ended December 31, 2007, the Authority maintained adequate management controls and complied with applicable laws, rules, and regulations for the area tested.

AUDIT RESULTS

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AUTOMATED FAREBOXES ARE NOT PROVIDING ADEQUATE CONTROL OVER FIXED BUS ROUTE REVENUE COLLECTIONS

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Our review of farebox revenue collections revealed that automated farebox readings were not in agreement with actual fare revenues collected for the entire 79-week period under audit. Fare revenue collections for 49 weeks were less than the farebox readings by a total of \$24,887, while fare revenue collections for 30 weeks were greater than the farebox readings by \$15,314. MVRTA management told us that the fareboxes currently in use have been repaired several times, but they are near the end of their useful life, and that is the most likely reason for the variances. MVRTA management indicated that replacement fareboxes would cost about \$12,000 - \$15,000 each, and would therefore cost the Authority over \$600,000 to refit all its buses. At the conclusion of our fieldwork, the MVRTA was conducting tests of all fareboxes to determine the extent of the problem and possible solutions.

INTRODUCTION

Background

In accordance with Chapter 11, Section 12, of the Massachusetts General Laws (MGL), we have conducted an audit of certain activities of the Merrimack Valley Regional Transit Authority (MVRTA) for the period July 1, 2006 to December 31, 2007. MVRTA was established in 1974 under Chapter 161B of the MGLs as a body politic and a corporate political subdivision of the Commonwealth of Massachusetts. MVRTA was established to provide fixed route bus service and paratransit service to the cities of Haverhill, Lawrence, Methuen, and Newburyport and the towns of Amesbury, Andover, Boxford, Georgetown, Groveland, Merrimac, Newbury, North Andover, Rowley, Salisbury and West Newbury. In accordance with MGL Chapter 161B, MVRTA contracts with an operating company, Merrimack Valley Area Transportation Company (MVATC), to operate its buses, perform maintenance services and conduct various administrative functions. MVRTA is authorized to improve, modify or extend existing facilities and enter into agreements for the construction, operation and use of Authority facilities and equipment with government agencies, municipalities, authorities, private transportation companies, railroads, corporations, and other concerns.

An Administrator appointed by an Advisory Board manages MVRTA's activities. The Board is comprised of representatives appointed by the chief political officer of his or her respective member community. The Administrator oversees a staff of one full-time employee and one part-time employee.

The chief sources of funding for Authority operations are passenger fares, contractual reimbursements and operation subsidies from the federal and state governments and member municipalities. In addition, the Authority receives federal and state capital grants to finance the acquisition and improvement of facilities and equipment.

Audit Scope, Objectives, and Methodology

The objectives of our audit were to (1) review and analyze MVRTA's internal controls over receipts and expenditures, including administrative costs and expenses, to determine their adequacy; (2) review MVRTA's controls over contracts to determine if proper bidding, awarding and oversight procedures are in place; (3) determine MVRTA's compliance with applicable laws, rules and

regulations; and (4) review MVRTA's recent independent public accountant (IPA) audit reports and management letters to determine whether they were conducted in compliance with generally accepted government auditing standards (GAGAS), and to follow-up on any issues identified.

Our audit was conducted in accordance with applicable generally accepted government auditing standards for performance audits, and, accordingly, included such audit tests and procedures as we considered necessary.

To achieve our audit objectives, we reviewed MVRTA's:

- Most recent IPA audit report to determine if it was prepared in compliance with GAGAS.
- Procedures for advertising, awarding, and monitoring transportation contracts.
- Administrative costs and transportation contract expenditures.
- System of controls over revenues and expenditures.
- Compliance with applicable laws, rules and regulations.

Based on our review, we have concluded that except as noted in the Audit Result section of this report, during the 18-month period ended December 31, 2007, the Authority maintained adequate management controls and complied with applicable laws, rules, and regulations for the area tested.

AUDIT RESULTS

AUTOMATED FAREBOXES ARE NOT PROVIDING ADEQUATE CONTROL OVER FIXED BUS ROUTE REVENUE COLLECTIONS

The Merrimack Valley Regional Transit Authority (MVRTA) collected fare revenues for fixed route services totaling approximately \$1,450,000 for the period July 1, 2006 through December 30, 2007. Each bus is equipped with an automated farebox that collects coins and currency from customers. At the end of a route, each farebox is removed from the bus and probed electronically to identify the amount of revenue the farebox has recorded as collected. The farebox is then inserted into a mechanical device at the bus terminal that opens the bottom of the farebox to allow the coins and bills to fall into a secure receptacle. The receptacle separates the coins and bills that are later manually fed into cash and coin counting machines. Deposits are made periodically by armored car pick-up. Moneyroom activities are under video surveillance and monitored by vendor personnel in a control room in the MVRTA office. We observed that counts of the farebox contents are not done individually for comparison with the electronic readings, but are commingled with several bus drops offs. Generally, a week of bus revenue collections is compared with the corresponding sum of the electronic readings. If variances occur, it is not possible to pinpoint which of the fareboxes are malfunctioning, because overages in some fareboxes could cancel out shortages in others.

In order to measure the differences between the cash reported collected by each farebox and the actual cash counts and deposits, we reviewed the weekly statistics prepared by the vendor that operates the MVRTA's fixed route system. We reviewed the activity for the 79-week period under audit (July 1, 2006 to December 31, 2007) and compared revenue readings per the fareboxes to the actual collections (deposits), with the following results.

- All 79 weeks contained variances, with weekly shortages ranging from 9 cents to \$3,265 (farebox readings greater than actual count) and weekly overages ranging from \$2.87 to \$2,171 (cash collected greater than farebox readings).
- Collections for 49 weeks were less than the farebox readings by a total of \$24,887.
- Collections for 30 weeks were greater than the farebox readings by a total of \$15,314.

MVRTA management informed us that the variances might be caused because the fareboxes on average are about six years old, which is about their maximum useful life. The Administrator of

MVRTA explained that the farebox master boards, which cost approximately \$1,000 each, are replaced as needed, and that the fareboxes currently in use have been repaired several times with parts salvaged from broken fareboxes. The Authority views such farebox repairs as a short-term solution that is necessary because new fareboxes cost between \$12,000 - \$15,000 each, and can generally only be replaced as part of a major capital program.

To address our concerns, MVRTA management ran a test of five fareboxes for May 23, 2008 with the following results:

(a) Automated Farebox Count	(b) Actual Count	(c) Variance (b) - (a)
\$19.30	\$33.25	\$13.95
\$16.05	\$13.60	(\$2.45)
\$27.35	\$23.51	(\$3.84)
\$18.00	\$28.40	\$10.40
\$11.50	\$8.55	(\$2.95)

Considering that all five fareboxes in the above sample had variances, MVRTA should expand its testing to include all fareboxes currently in use to determine how many and which fareboxes have the largest variances, and whether repair or replacement is feasible. Based on the initial limited test and the overall yearly variances, MVRTA's short term plan is to test each of its 51 fareboxes several times to determine if individual fareboxes typically yield the same variance. If the variances are constant, MVRTA believes that these fareboxes can still be used to control cash collections adjusting for the constant variances. If not, the Authority will consider replacing the fareboxes, although it does not currently have the funds to do so. During our review, we observed post collection controls over revenues such as sealed fareboxes, limited access to the money room, video surveillance, and armored car pick-up of collections. However, MVRTA still needs to improve its controls by implementing a more reliable system that establishes greater accountability over farebox revenues.

Recommendation

In order to improve controls over bus revenue collections, MVRTA should continue testing all bus fareboxes to determine defective versus salvageable fareboxes, and to evaluate whether the

fareboxes can be used reliably to establish potential revenue. MVRTA should repair and replace fareboxes as necessary and as funds become available.

Auditee's Response

The Authority continues to audit individual fareboxes to establish variances and individual farebox performance. At the time of the Audit, the Authority had programmed, within its FY 2009 – 2012 Capital Program, the replacement of the entire farebox system (purchased in 2002) in 2010 in keeping with an eight year replacement cycle. As the Authority continues to test present fareboxes to establish variances and repair schedules, this data will be used to either accelerate the replacement procurement or to set a shorter (within 5 years) procurement schedule for future procurements.