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INDEPENDENT STATE AUDITOR'S REPORT
ON CERTAIN ACTIVITIES OF THE
MASSACHUSETTS TURNPIKE AUTHORITY'S
ELECTRONIC TOLL COLLECTION SYSTEM

OFFICIAL AUDIT
REPORT
OCTOBER 31, 2002

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As authorized by Chapter 11, Section 12, of the Massachusetts General Laws, the Office of the State Auditor conducted an audit of the Massachusetts Turnpike Authority (MTA). The MTA, established by Chapter 354 of the Acts of 1952, is authorized and empowered to construct, maintain, repair, and operate the toll highway known as the Massachusetts Turnpike. Chapter 598 of the Acts of 1958 authorized the MTA to construct the Callahan Tunnel and to acquire the Sumner Tunnel from the city of Boston.

In October 1998, the MTA implemented an Electronic Toll Collection (ETC) system, which requires users (patrons) to deposit a sum of money with the MTA and permits them to drive through certain designated toll lanes without paying the toll in cash. The amount of the toll is registered through an electronic device known as a transponder, which is affixed to the windshield of the vehicle. The amount of the toll is deducted from the balance of funds deposited by each patron. The MTA has established a Violation Enforcement System (VES) beginning in December 2000 to discourage toll evasion through imposition of fines for unauthorized use of the Fast Lane. The system was designed to expedite the flow of traffic, improve the collection system, and reduce air pollution.

The primary objective of our audit was to determine whether the VES is functioning as designed and that violators are being assessed appropriate amounts of money. Our audit included a review of the ETC system with particular emphasis on the VES, including a field test thereof.

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THE MTA COULD INCREASE REVENUES BY AN ESTIMATED \$5.3 MILLION BY COLLECTING ALL TOLLS AND ENFORCING FINES, INSTEAD OF ISSUING WARNINGS, TO VIOLATORS

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In accordance with MTA policy, owners of vehicles that pass through a Fast Lane tollbooth without an authorized transponder, (including vehicles with no transponder at all), receive a written warning for the first violation, but are not fined. It was noted that vehicle owners are charged a \$50 fine for each subsequent violation. We also found that the MTA does not charge offending drivers for the tolls that they avoided paying. We estimate that as a result, the MTA is losing the opportunity to collect an estimated \$548 thousand annually in toll charges, and we recommend that the MTA consider charging violators the maximum toll amount in addition to the fine. Additionally, if the MTA eliminates its policy of issuing warnings to first time violators and instead enforces the normal \$50 fine, an estimated \$4.8 million in fine revenues could be generated.

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INTRODUCTION

Background

The Massachusetts Turnpike Authority (MTA) established by Chapter 354 of the Acts of 1952, is authorized and empowered to construct, maintain, repair, and operate a toll highway known as the Massachusetts Turnpike. The MTA started operations in 1957 and currently operates a 135-mile toll highway running from the western border of Massachusetts to the city of Boston.

Chapter 598 of the Acts of 1958 authorized the MTA to construct the Callahan Tunnel and to acquire the Sumner Tunnel from the city of Boston. In 1961, the MTA constructed the Callahan Tunnel and renovated the Sumner Tunnel. In compliance with Chapter 598, the MTA has since operated and maintained both one-mile tunnels connecting Boston with Logan Airport and the North Shore. Chapter 102 of the Acts of 1995 directed the MTA to purchase the newly constructed Ted Williams Tunnel from the Commonwealth of Massachusetts and assume responsibility for its operation and maintenance.

In 1997 the MTA decided to establish an Electronic Toll Collection (ETC) system on the Massachusetts Turnpike to expedite the flow of traffic and improve the toll collection system. In the latter part of 1997 a Request for Proposals (RFP) for the ETC was issued. The vendor selected had broad experience with ETC systems and at that time was operating similar systems for the benefit of authorities in six other states. The ETC system began operations in October 1998.

The ETC system permits a driver to pass through specially designated toll lanes (Fast Lanes) on the Turnpike without stopping to pay tolls. The ETC requires that users (patrons) pay a one-time deposit for the lease of an electronic device known as a transponder. The deposit amount is \$27.50 for an interior transponder that is mounted on the windshield or \$33.50 for an externally mounted transponder. Each patron is also required to make an advance deposit of \$20 to the MTA and to replenish the account by personal check or an automatic charge to a patron's bank account or credit card when the balance drops below \$10. As the vehicle passes through the Fast Lane, the amount of the toll is registered and deducted from the balance of the

patron's account. Patrons who pay by check will be alerted to their need to replenish their account by means of a yellow light that flashes "Low Balance" when they pass through the Fast Lane.

Persons who drive through the Fast Lane and do not have a transponder or whose transponder is not functioning properly will receive a written warning that they have committed a systems violation. There is an appeals process for patrons whose transponder fails to work for various reasons e.g., the battery is dead, or the transponder is not positioned properly on the windshield. Such patrons are subsequently charged for the toll only, with the warning or citation removed. If a second violation occurs, the patron is issued a notification that a \$50 fine has been imposed. There is an appeal period of 21 days, after which a late fee of \$5 is imposed. After 24 more days there is an additional late fee of \$15, and if the amount is not paid within 15 more days (60 days after mailing the violation notice), there is an additional charge of \$20 and a referral to the Registry of Motor Vehicles (RMV) for non renewal of the vehicle's registration. The same process occurs for each additional violation.

During calendar years 2000 and 2001, the MTA generated toll revenues of \$189,131,052 and \$188,601,884, respectively. During calendar year 2001, approximately 42%, or \$78,996,680 of these revenues, were received from Fast Lane patrons.

There has been a steady increase in the number of transponders issued by the MTA. As of the end of the last three calendar years the total number of transponders issued and in use was as follows:

Cumulative Total as of December 31,	
1999	227,612
2000	380,973
2001	525,303

In calendar year 2002 through June 30th, the MTA had issued over 72,000 additional transponders and at that point the cumulative total was 597,990. This is clearly reflective of the increasing acceptance of the system by frequent users of the Turnpike.

Audit Scope, Objectives, and Methodology

Our special-scope audit was conducted in accordance with applicable generally accepted government auditing standards. Our audit was performed to determine whether the Violation Enforcement System (VES), a part of the ETC, was functioning as designed and whether the MTA had established and maintained an adequate control system to monitor violators and collect appropriate revenues due to the MTA and discourage and reduce the level of violations of the system.

To accomplish our objectives, we interviewed various MTA officials, including the Director of Internal Auditing and Accounting, the Director of Budget, and the ETC Program Manager. We also interviewed various managers of the vendor retained by the MTA to operate these systems at the Account Processing Center located in Auburn, Massachusetts, including the Service Center Manager, the Finance Manager, the Commercial Services and Inventory Manager, the Customer Service Manager, the Southborough, Massachusetts-based Violation Processing Manager, and other employees.

We reviewed the MTA's Account Processing Center Policy and Procedures Manual, which describes the system established to control Fast Lane applications, the receipt and distribution of transponders, the management of customer accounts, the processes to effect and account for collections, and the performance reporting and monitoring system. In addition, we reviewed the VES Detailed Design Document which describes the Violation Processing System; data and processing flow; image review and RMV processing, mailing and printing process; payment process; appeals process; enforcement processing; and archive management processing. We also reviewed reports, forms, and related correspondence that support the systems.

We performed an onsite review at the Auburn Account Processing Center, where all of the actions in support of the Account Processing Center operations are performed. At Auburn, we also reviewed the VES processes with the Southborough Violation Processing Manager.

We also performed field tests of the violation processing system by driving privately owned vehicles through the Fast Lane tollbooths in a manner designed to incur violations. Our tests

resulted in the issuance of warning notices and notifications of \$50 fines. In accordance with an agreement made with MTA officials prior to our field tests, these notifications were voided by the MTA. Our tests demonstrated that the MTA's violation processing system is functioning as designed.

AUDIT RESULTS

THE MTA COULD INCREASE REVENUES BY AN ESTIMATED \$5.3 MILLION BY COLLECTING ALL TOLLS AND ENFORCING FINES, INSTEAD OF ISSUING WARNINGS, TO VIOLATORS

Owners of vehicles that pass through Fast Lane tollbooths without an authorized working transponder, (including vehicles with no transponder at all), receive a warning notice for the first violation, but are not fined. It was noted that offenders are issued a \$50 fine for each subsequent violation. We also found that the MTA does not charge vehicle owners for the tolls that these drivers avoided paying. As a result, the MTA is losing the opportunity to generate toll revenues of as much as \$548 thousand annually. Further, as warning notices, rather than fines, are issued to first time Fast Lane toll violators, the MTA is losing the opportunity to generate as much as \$4.8 million annually in fine revenues.

The MTA has defined the various types of Fast Lane violations that will result in an enforcement action, as follows:

- *No transponder is read from a vehicle driving through a FAST LANE.* This can happen when: (1) no transponder is present in the vehicle, (2) the transponder has not been properly mounted in accordance with transponder instructions, (3) the transponder has been deactivated by the FAST LANE Service Center due to nonpayment of toll charges or failure to follow other FAST LANE terms and conditions (e.g., speeding), or (4) the transponder is malfunctioning (e.g., dead battery).
- *The transponder is read, but there are not sufficient funds in the patron's account to pay the toll amount.*
- *A FAST LANE "special program" transponder is used outside the allowable zone.* Special program "Interchange 1-6" and "carpool" transponders may only be used within specific zones; otherwise a violation notice will be issued to the patron.

As stated in the Background section of this report, there is an appeals process, and if an appeal is based on a valid rationale (e.g., a transponder has a dead battery), the MTA will not take further enforcement action. All successful appeals require the payment of the appropriate amount of tolls due.

After receiving legislative approval to fine Fast Lane toll violators, in December 2000 the MTA began to issue warning notices to first time violators, and \$50 fine notifications to recurring violators. For calendar year 2001, the MTA's Violation Processing Center at Southborough, Massachusetts compiled statistics relative to the number of Fast Lane violations and their disposition, as follows:

Number of warnings	192,102
Number of citations	<u>169,319</u>
	361,421
Less: Number of successful appeals	<u>56,641</u>
Net violations-no tolls assessed	<u>304,780</u>

In addition, the Violation Processing Center compiled statistics on the number of "video tolls" (V-tolls). During calendar year 2001 there were 573,377 V-toll occurrences. The MTA defines a V-toll as:

A charge to a FAST LANE account when the patron's transponder was not read in the lane, but the MTA has identified the vehicle (license plate) as belonging to a FAST LANE patron, through use of the violation cameras. When a V-toll is charged to a patron's account no violation notice is issued to them. A V-toll can only be applied if: (1) the patron's vehicle and license plate information is properly recorded in their FAST LANE account; and (2) there are sufficient funds in the account to pay the full toll account. This V-toll policy helps protect FAST LANE patrons from getting a violation (or fines) if their transponder is malfunctioning.

We were told that the determination of the amount of tolls to be assessed for both the V-tolls and the accepted appeals is based on the total amount of tolls that would be due if the vehicle entered the first tollbooth on the Turnpike. For example, if a vehicle heading west exited at Exit 1, the toll would be \$3.60, (i.e., the toll from Exit 15, the earliest entrance point). This calculation is made by the MTA unless the patron can provide evidence of a different entrance point. Based on the above, we would estimate that the average amount of revenue lost by not collecting tolls from violators would be 50% of the total toll of \$3.60 or \$1.80 per violation. By not assessing a similar toll charge from Fast Lane violators, the MTA lost the opportunity to earn an estimated \$548,604 (304,780 x \$1.80) in calendar year 2001.

Relative to first time violators, the Electronic Toll Collection (ETC) system has now been in operation for four years and the operating public is now very much aware of the system as a

result of travel here and in other states. A first time offender forgiveness system is acceptable during a startup period; however, the MTA is losing significant revenues by allowing the warning notices policy to continue. Accordingly, the process of issuing warning notices should be terminated for all Fast Lane violators, including first time violators. Those persons who believe they have the basis of a legitimate appeal should still be allowed to file an appeal and their fine could be waived, however, all others should be required to pay the fine plus the toll amount due.

In calendar year 2001, the MTA issued 192,102 warning notifications. MTA officials advised us they have found that, for a number of reasons (e.g., transponder battery failure), about 50% of all ETC violations are actually their own FAST LANE customers. If charged a \$50 fine for a first-time offense, they believe the majority of these “patron violations” would result in a successful appeal, adding administrative burden with no fine paid. As a result, they advised that, conservatively, only 50% of the 192,102 warning letters would result in a \$50 fine. The assessment of the current \$50 fine in lieu of a warning notice would have resulted in additional revenues of over \$4.8 million (1/2 of 192,102 x \$50).

MTA officials stated that at the time the ETC system was implemented, a policy decision was made to not assess tolls to violators. The rationale for this decision was that officials wished to promote the new system and felt that the assessment of both fines and tolls for violators would have a negative impact on the acceptance of the system.

Recommendation: The MTA should consider a) changing its policy to bill for the assessment of tolls for all violators of the Fast Lane system, and b) changing its policy of issuing warning notices and instead assess fines to all violators. Consideration should be given to a graduated fine structure, i.e., a \$25 fine for first time offenders and the current \$50 fine for each subsequent violation. By adopting these fee and fine modification recommendations, the MTA would be recouping lost toll revenue and generating significant additional revenue to help defray the cost of operating the Turnpike system.

Auditee's Response

The Authority's warning letter policy allows an infrequent driver or a FastLane patron to be warned and excused from an initial fine. The legislature had asked the Authority to consider the effects on the infrequent and unaware toll payer. In response to this, first-time violators have been given this one opportunity to understand our policy before becoming subject to fines. The goal of the VES system is to discourage toll evasion and unauthorized use of the FastLane not to take advantage of patrons using a new system. The warning letter policy strengthens the Authority's position in an appeal from any second and subsequent violations.

Except for these first-time warnings, all violators are charged a \$50 fine for unauthorized use of a Fast Lane. This \$50 fine amount is intended to cover the lost toll amount as well as all administrative costs associated with the VES program – while providing a meaningful incentive to change behavior in the lane. As a result, the toll amount is not added to the \$50 fine when a violation notice is issued.

As part of our ongoing assessment of VES policies, the Authority will review the implications of eliminating the warning letter and charging toll amounts, as suggested.

Auditor's Reply

We are pleased that the MTA will undertake a review of this matter, particularly its impact on revenue collection. Again, the Fast Lane program is now not a new system and has been in operation for four years. The latest information made available to us by the MTA indicates that the number of first time violators has increased and could reach 200,000 this calendar year. As a result, we again recommend that the MTA consider eliminating its warning letter policy.

OTHER MATTERS

During the course of our audit, we reviewed public safety issues that came to our attention relative to Fast Lane speeding.

At each Fast Lane there is a clearly posted notification that vehicles traveling through the Fast Lane tollbooth must not exceed a speed of 15 miles per hour. These signs are placed approximately 100 feet before the lane and at each Fast Lane tollbooth. However, we found that this speed limit was not adequately enforced. Specifically, during the field test portion of our audit, we observed several vehicles clearly exceeding the posted speed limit, which represents a serious safety hazard for MTA personnel and other vehicle operators.

The MTA's Violation Enforcement System (VES) has the capability to photograph and record the license plate number of all vehicles that pass through the Fast Lanes. In fact, currently the VES camera equipment of the MTA's Fast Lane can provide clear image frames of a vehicle's license plate at speeds of up to 80 mph. The MTA also has the capability to retrieve from the Registry of Motor Vehicles (RMV) the name and address of any speeding offenders, as it does in its Fast Lane transponder operations. The MTA officials, however, have adopted a policy of not using the VES to enforce the posted speed limit, in part because they were concerned that strict enforcement might negatively affect the acceptance and use of the Fast Lane system.

MTA officials stated that the speed limit is enforced by State Police officers located at the Fast Lane tollbooths. However, coverage is less than 100%, as there are only a limited number of officers on duty (an average of four officers per shift) to cover the entire Turnpike, which currently has 24 toll plazas (and 92 lanes with Fast Lane capability) on the 134-mile roadway.

The application for a Fast Lane account requires that individuals comply with the posted speed limit of 15 mph when transitting the Fast Lanes. In addition, applicants are informed that exceeding the posted speed limit will subject them to fines, penalties, and possible termination of their Fast Lane membership, as follows:

You agree that you will comply with the posted speed limit, (currently 15 mph), for all Fast Lanes. You are advised and you agree that exceeding the posted speed limit will subject you to fines and penalties and/or termination of your Fast Lane membership.

Although the MTA could not supply us with an estimate of the number of vehicles that exceed the posted speed limit at the Fast Lanes, according to a published statement by an MTA spokesman, more than 3,500 speeding citations were written during the first six months of calendar year 2002. Patrons who violate the Fast Lane speed limit of 15 mph pose an inherent danger to toll collectors when shift changes occur in the vicinity of the Fast Lanes and also presents a danger to vehicles that adhere to the posted speed limits. Therefore, the MTA should consider strictly enforcing the posted speed limits.

Auditee's Response

We are evaluating the terms and conditions for membership in the "FastLane" group. Consistent chronic speeders could lose their privilege of membership and be forced to use the manual cash lane. The imposition of speeding fines (a moving violation) should be left to the State Police.

Auditor's Reply

We continue to believe that persons who exceed the posted 15-mile per hour speed limit should be fined. They represent a serious safety problem to others. Additionally, termination of membership in the "Fast Lane" group would impact those speeders who are members but would not impact those speeders who are not. More importantly, the loss of even one life would more than outweigh any additional cost or inconvenience to speeders who are fined for their violation.
