



OFFICE OF THE
City Auditor

ETS Fare Evasion Review

Follow Up

November 1, 2007

The Office of the City Auditor conducted
this project in accordance with the
*International Standards for the
Professional Practice of Internal Auditing*

ETS Fare Evasion Review Follow-up

1. Introduction

The OCA performed a follow-up review to determine the status of six recommendations contained in the ETS Fare Evasion Review report that was issued on May 10, 2005. This review was limited to the actions taken by Edmonton Transit to address these recommendations.

We concluded that all recommendations contained in the original report were completed in a satisfactory manner.

2. Background

2.1. Summary of Original Report and Actions Taken

On January 4, 2005 an Edmonton Transit System (ETS) employee provided a letter to City Council regarding fare evasion on the bus system. The employee estimated an annual revenue loss of \$3 million due to fare evasion arising from the following factors:

- Fare boxes are not adequately designed to allow the Transit Operator to easily determine if the passenger deposited the correct fare.
- Some passengers know that the Transit Operator is not able to determine how much coin is being deposited into the fare box, and throw in whatever they think they can get away with.
- Fare collection is part of the Transit Operator's job description; as a result it is left to the Operator's discretion whether to collect the full fare.
- If the Transit Operator does insist on the passenger paying the full fare (barring exceptional or compassionate circumstances), then the Operator is subject to increased risk of physical or verbal abuse.
- Dealing with fare evasion increases the Transit Operator's stress level, leading to increased sick and stress leave.

We discussed the fare evasion issue with the letter's author and Edmonton Transit management. Based on these discussions we decided to perform a review of the internal controls designed to mitigate fare evasion.

In our original report we recommended that Edmonton Transit improve controls in the following areas:

2.1.1. Fare Media and Collection Technology

During the month of March 2005, we conducted a test based on a non-scientific sample of passengers riding the Bus and LRT systems. The purpose of this test was to provide

an estimate of fare evasion rates. Based on this work, we estimated an annual revenue loss due to fare evasion of \$967,000 for the bus system, and \$664,000 for the LRT system. We also conducted interviews with Transit Operators, Transit Inspectors, and Transit Security Protective Services Officers to determine the root causes for fare evasion. Root causes included passengers having no money for fare, short changing fare payment by using a large number of small coins, using a senior or student pass in place of an adult pass (typically a student pass), expired transfers and tickets, abuse of ticket booklets through improper validation (stamping on the wrong side or not validating the ticket), and counterfeiting of Bus passes.

Our research indicated that modern fare media and collection technology is available and used by other transit authorities. Smart card technology has the potential for meeting ETS's fare collection requirements while assisting to reduce fare evasion.

Recommendation # 1 - Complete

That Management envision a potential fare media and fare collection system, on a cost effective basis, that would minimize fare evasion. This would include examining the control benefits for the use of the different types of fare media.

ETS conducted an analysis to determine whether the estimated cost of \$12.8 million to replace and upgrade transit fare collection equipment with smart card technology would be justified. ETS determined that key tangible benefits would include:

- decreased fare evasion of \$4.3 million over 5 years and \$10 million over 10 years,
- decreased commissions payable of \$554,000 over 5 years and \$1.3 million over 10 years,
- decreased fare media production and distribution of \$760,000 over 5 years and \$1.8 million over 10 years,
- decreased cash fare processing effort of \$72,000 over 5 years and \$176,000 over 10 years,
- increased ridership of \$2.8 million over 5 years and \$7 million over 10 years, and
- investment payback is estimated at 7.5 years.

ETS determined that key intangible benefits would include:

- decreased fare media inventory management and administration,
- decreased operator confrontations,
- increased bus operator performance,
- increased regional fare integration opportunities,
- potential to leverage smart cards for the use by other City departments, and
- potential for new marketing opportunities such as loyalty/reward programs for transit riders and integration with special event tickets or conference passes for out-of-town visitors.

In January 2008 ETS is planning to commence a pilot project to test the smart card technology prior to committing to system wide implementation.

2.1.2. Fare Enforcement and Transit Security

During our original review we documented that assaults and threats to Transit Operators, Inspectors, Transit Security Protective Services Officers, and the general public are a real risk. Enforcement of fare payment is left to the discretion of the Transit Operator and is one of the most difficult tasks assigned to the operator position. A Transit Operator faces increased risk of vulgarity and the threat of violence when requesting fare from a passenger, particularly if the passenger is impaired in any manner. This in turn contributes to a diminished sense of security among both Transit Operators and passengers. We believe that increased security presence is warranted for the bus system. This could be accomplished using intelligence-based deployment of fare agents and Transit Security Protective Services Officers on buses or at identified problem terminals.

Recommendation # 2 – Complete

That Transit Security increase the number of fare evasion checks on Buses at problem terminals and establish regular on-Bus patrols on problem routes and runs that are identified through risk assessment information. This would include the provision of adequate Transit Security staffing to ensure sufficient resources are provided for fare enforcement and security on the Bus system.

With the approval of City Council, ETS Security was able to hire 13 new Full Time Equivalent positions in order to implement a 24/7 rotating shift structure. The additional staff members have allowed Transit Security to expand their role from only patrolling the LRT System to also deploying to surface locations such as Transit Centres, ETS Garages and Bus Stops. Furthermore the Transit Security Protective Services Officers have access to real-time risk assessment information allowing for more effective officer deployment. Patrolling on bus routes proved less effective than having officers deploy at choke points such as Transit Centres and LRT Stations where large volumes of passengers were likely to congregate and criminal activity is more likely to occur. Transit determined that the number of incidents actually occurring on buses was very low in comparison to incidents occurring at Transit nodes. As a result a more effective utilization of resources is achieved through intelligence-led deployments to Transit Centres and LRT Stations.

2.1.3. ETS Risk Assessment System

During our original review, we observed that ETS had not implemented a comprehensive risk assessment system to measure the level of fare evasion activity on the Bus and LRT systems. The purpose of a risk assessment system is to provide management with information about where fare evasion activity is more likely to occur. Without a proper risk assessment reporting system, it is difficult to accurately determine the location of high risk areas in order to deploy sufficient resources into these areas.

Measuring fare evasion risk levels also provides management with information connected to other security-related issues such as robbery, assault, and vandalism.

Recommendation # 3 - Complete

That the newly hired Security Analyst develops a risk assessment system in conjunction with the Security Information System to measure the fare evasion risk levels on a continuous basis for the Bus and LRT systems. This would include updating the ETS Operator Information Manual (when the next revision is scheduled for release on January 2007) to incorporate best practices for dealing with fare evaders following implementation of the fare evasion risk assessment system.

We observed that the Security Analyst has implemented an intelligence-based risk assessment system that monitors fare evasion risk levels on a continuous basis. The ETS Operator Information Manual was revised (it was still in draft form at the time of this review) to incorporate best practices for dealing with fare evaders. The manual is scheduled for final release by December 2007.

2.1.4. Monitoring and Reporting of Fare Evasion Rates

During our original review, field observations confirmed that a certain level of fare evasion is inevitable. However, ETS was not able to mitigate fare evasion effectively because fare evasion rates were not monitored on a continuous basis.

Recommendation # 4 - Complete

That processes and controls be developed in order to provide continuous monitoring and reporting of fare evasion rates, including estimated revenue loss caused by fare evasion for both the Bus and LRT systems.

ETS has implemented an intelligence-based risk assessment system that continuously monitors fare evasion levels on the LRT system. This allows management to deploy Transit Security Protective Services Officers to fare evasion hot spots, thereby increasing effectiveness. ETS found that it was inefficient to continuously monitor fare evasion on the bus system. This is because the presence of an Officer on a bus deters fare evasion as potential offenders are unlikely to board a bus with an Officer on board. ETS determined that it is more effective to perform more frequent checks on the LRT System.

The OCA calculated that fare evasion on the LRT system has been reduced by more than \$200,000 per annum since May 2005.

2.1.5. Reporting of Assaults on Transit System

During the original review we observed that there was no process for timely summary reporting of assaults against Transit Operators, Inspectors, Transit Security Protective Services Officers, and passengers for either the bus or LRT systems. Timely reporting of assault information is required to observe developing trends so that pro-active strategies can be employed in order to reduce the number of assaults.

Recommendation # 5 - Complete

That processes be revised in order to provide timely summary reporting (on a monthly basis) of assaults. The summary report should also be classified by “root cause of the assault” in order to allow for management to plan pro-active strategies to reduce the number and frequency of assaults.

ETS issues a monthly Security Incident Summary Report to all security stakeholders. This report contains detailed information about assault and other crimes which occur within the Transit system. The report also provides security-related intelligence by identifying areas of high risk. Transit Security Protective Services Officers review this report (and other security-related information) on a routine basis in order to more effectively tailor their enforcement efforts and problem-solving initiatives.

2.1.6. ETS Operator Information Manual

We noted that ETS has developed training material as required by Administrative Directive A1438. However the workplace violence topic does not appear in the ETS Operator Information Manual. The ETS Operator Information Manual needed to be updated to provide appropriate guidance about dealing with workplace violence issues as required by Administrative Directive A1438.

Recommendation # 6 - Complete

That the ETS Operator Information Manual be updated (when the next revision is scheduled for release on January 2007) to incorporate the workplace violence policy statement, procedures and guidelines as required per Administrative Directive A 1438 and Administrative Procedure A 1438.

ETS revised the draft version of the ETS Operator Information Manual to incorporate the workplace violence policy as required per Administrative Directive A1438. The manual is scheduled for revision and final release by December 2007.

3. Conclusion

We are pleased to report that ETS has implemented all of the recommendations contained in the original report. These improvements have resulted in tangible gains such as reduced fare evasion on the LRT system in excess of \$200,000 per annum. Intangible benefits include improved safety for ETS employees and passengers. ETS is anticipating further gains from the proposed use of smart card technology. These gains would include greater ridership, decreased Transit Operator confrontations, regional fare integration opportunities, and simplified bus pass administration for educational institutions and their students.

We thank all City staff who participated in this follow up review for their support, cooperation and feedback.