# CITY OF ATLANTA

## CITY AUDITOR'S OFFICE

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**TO:** Honorable Mayor, City Council President, and members of the City Council

**FROM:** Leslie Ward, City Auditor

**DATE:** November 28, 2012

**SUBJECT:** Controls over Fuel Inventory

The purpose of this memo is to communicate the results our audit of the Department of Public Works' controls over fuel inventory. Our objective was to answer the following question:

- Has the Office of Fleet Services established adequate controls to prevent or detect the misuse of city fuel?

The Office of Fleet Services dispensed 7.4 million gallons of fuel to city departments between March 2010 and June 2012, totaling $22.9 million. The office operates 60 pumps at ten locations throughout the city. It tracks departments' fuel use with an automated fuel management system called FuelFocus and bills departments monthly. FuelFocus is part of the office's FleetFocus software, which the office uses to track and bill departments for parts and labor. Industry experts identify fuel as the second largest public sector fleet expense and some estimate that 3% of a company's fuel budget is lost to theft. Given the weak control environment, it is likely that the city is experiencing a higher percentage of fuel loss due to theft.

We conducted this audit in accordance with generally accepted government auditing standards. Our audit methods reviewed and assessed application, physical security, and management controls including:

- reviewing FuelFocus application settings
- reviewing user access to the FuelFocus application

- analyzing FuelFocus transaction data to identify trends in use and potential outliers
- assessing fuel card assignment and logs
- interviewing city staff about their use of the city's fuel dispensing system
- reviewing procedures for purchasing, receiving, and dispensing fuel

Our audit identified significant control deficiencies and an overall control environment inadequate to prevent or detect theft or misuse of fuel. While we identified patterns of use consistent with theft and extended our audit procedures to determine whether fraud had likely occurred, weak controls over user IDs and lack of CCTV (closed circuit television) tapes prevented conclusive analysis. We made recommendations to strengthen physical security and general and application controls in a confidential interim report to the city's commissioner of Public Works. Department management agreed with our recommendations and reports that the office has begun to implement them.

We also recommend the city further strengthen controls by investing in RF (radio frequency) Vehicle ID technology and repurposing its existing fuel cards to identify the assigned employee. Under the current fueling process, fleet services issues a fuel card that stores data about an assigned vehicle. Before fueling, the operator swipes the card to identify the vehicle and manually enters his or her user ID and the vehicle odometer reading into a key pad at the fueling station. Exhibit 1 summarizes the potential breakdown in these controls; users can fuel vehicles other than the one designated by the card and can enter an erroneous user ID and/or an erroneous odometer reading. Attaching an RFID to the vehicle would automatically identify the vehicle and transmit the current odometer reading. Using the existing fuel key to identify the employee instead of the vehicle would reduce the likelihood of operators entering erroneous IDs at the key pad.

Exhibit 1 Fuel Dispense Controls, Breakdown of Controls and Corrective Action Available

| Mechanism | Control | Breakdown | Corrective Option |
|---|---|---|---|
| Fuel Card | User fuels vehicle with assigned key card | User fuels vehicle with cards not assigned to it | **RF (Radio Frequency) Vehicle ID** |
| Key Pad | User enters vehicle odometer reading | User enters erroneous odometer readings | |
| Key Pad | User enters his city employee ID | User enters ID belonging to another or separated city employee | **Proximity Keys, Magnetic Strip Cards, Biometric ID** |

**Source:** Developed by audit staff using observations gathered from the review of the fuel dispense process and comparing to options available from AssetWorks' product specification documents

Department management agreed to equip city vehicles with the RFID and explore the option of using the existing key cards to transmit employee information to FuelFocus. This report omits specific details of control weaknesses that could be exploited to increase the risk of fuel theft or misuse as the city strengthens its controls over fuel inventory.

**Unimplemented application controls increased opportunity for fuel misuse.** The Office of Fleet Services failed to implement system settings to limit the amount of fuel pumped into vehicles/equipment. The system configuration was set to allow most vehicles/equipment to fuel up to 99 times per day, to allow users to pump fuel after entering erroneous odometer readings, and to allow users to dispense more fuel than the recorded capacity of the vehicle. Configuring the system to limit the amount of fuel dispensed per fueling and per day and to check the validity of consecutive odometer readings reduces the opportunity for theft by making it more difficult for users to dispense fuel into a vehicle other than the one designated by the key card. Setting the system to check the validity of odometer readings also helps to ensure that vehicle use data are accurate, which can allow fleet services management to identify underused equipment and to calculate miles per gallon per vehicle to flag potential problems.

We recommended the commissioner of public works identify all application controls available in FuelFocus, analyze the impact of these on fuel activity and implement as many as possible to reduce the risk of fuel misuse. The fleet services director responded that the office has updated the profile of each active fleet unit to:

- set the “maximum fueling per day” parameter to 2 - 5
- check the parameter “Deny fuel if tries exceeded”
- deny fuel when the entered odometer reading fails the system validity check
- deny fuel that exceeds the capacity set for the vehicle

**Weak operator access controls increased opportunity for fuel misuse.** We identified more than 3,600 user IDs in FuelFocus that did not match the list of current employees. We also noted inconsistent naming conventions and varying ID types recorded in FuelFocus. These control weaknesses increase the risk of unauthorized access to fuel and decrease fleet service’s ability to track who is dispensing fuel. For example, we identified multiple fuel transactions recorded to former employees, including $66,500 in fuel dispensed using a retired employee’s ID.

We recommended the commissioner of public works review all operator IDs and remove all non-essential accounts. We also recommended that the department standardize employee names and user IDs to match the corresponding Oracle records and establish a periodic review of user accounts, after the initial cleanup. The fleet services director responded that the office had obtained a master listing of all active employees and has updated employee names and user IDs using a standardized naming convention, and plans to review and update the list monthly.

**FuelFocus contains inaccurate, unreliable user and vehicle information.** We observed patterns in transactions, corroborated by some available video footage, indicating that users input IDs not assigned to them when dispensing fuel or fueled a vehicle other than the one associated with the assigned fuel key. Besides providing opportunity for theft of fuel, these control weaknesses could result in inaccurate charges to departments. Public works was unable to provide video covering all of the time periods we requested. In some cases, cameras at the location were not functioning and in some cases footage was not retrievable due to a system memory error. We made recommendations to strengthen physical security at the fueling sites, including evaluation of the current CCTV infrastructure. The Department of Public Works agreed to ensure installed video surveillance is functioning property at all sites and to increase physical security at these sites.

**We estimate the payback period for new technology would be less than two years.** Based on the Ryder Fuel Services estimate that as much as 3% of a company's fuel budget is lost to theft and the city's fiscal year 2012 fuel consumption of $10.7 million, we estimate that improved controls could yield $320,000 in annual savings. Fleet services pilot tested RF Vehicle ID technology in 2011, but decided not to implement the system due to cost. According to management, 600 police vehicles are already equipped with the device. Based on the 2011 AssetWorks proposal, we estimate costs of about $545,000 to equip the remaining 2,540 vehicles in the city fleet with the RF Vehicle ID, purchase the additional software module and licenses, and for the first year of maintenance and support. The proposal identified annual maintenance costs of about $3,200.

Similar to the RF Vehicle ID, proximity keys, magnetic strip cards, and biometric identification systems are technological devices to identify the employee who is accessing fuel. A proximity key transmits data via radio frequency, a magnetic strip card stores data like a credit card, and a biometric system stores and matches individual physical characteristics, such as a finger print, palm scan or retina scan. The most cost effective solution could be to transition the current proximity key fuel cards that are used to identify vehicles to instead identify employees. This option would not necessarily eliminate entry of invalid employee ID because it is possible for employees to share the cards. It would, however, strengthen controls by eliminating the possibility of employees entering arbitrary information into the key pad.

Generally accepted government auditing standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

If you have questions you may call Damien Berahzer at 404/330-6806, or you may reach me at 404/330-6804. We appreciate staff's courtesy and cooperation throughout the audit.