



Office of the
Inspector General
Commonwealth of Massachusetts

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Municipal Fuel Management
Advisory

February 2010

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Dear Municipal Official:

The attached report is an advisory to assist municipalities in preventing and detecting fraud, waste, and abuse in the use of fuel (gasoline, diesel, etc.) for their motor vehicle fleets. This advisory is based on our review of municipal fuel management systems and audits and findings from around the nation.

Our advisory recommends that municipalities review current practices for compliance with M.G.L. c.30B, the Uniform Procurement Act, and determine whether opportunities exist to improve monitoring and control activities in fuel management.

Please keep in mind that the comments and recommendations in this advisory should not be viewed as addressing all possible issues or concerns regarding municipal fuel management systems. Also, not all the recommendations may be applicable to your current situation. The main purpose of the advisory is to encourage a thoughtful review of current and future municipal fuel usage practices, policies and procedures and ensure that vulnerabilities are addressed.

If you have any questions, please do not hesitate to contact my office.

Sincerely,

A handwritten signature in black ink that reads "Gregory W. Sullivan".

Gregory W. Sullivan
Inspector General

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Background

Jurisdictions are facing increasing fuel¹ costs, decreasing staff, and tighter budgets making the efficient and effective management of an expensive commodity like fuel all the more important. According to a 2007 survey by the Federal Highway Administration (FHWA) the number of vehicles used by governments around the nation is at an all time high.

Local governments must maintain a greater number of vehicles with fewer resources available to support adequate oversight of fuel procurement and fuel use. The potential for fuel theft and abuse of fuel policies increases when oversight decreases and may increase in today's economic climate. Employees may misappropriate fuel and rationalize it as a means to offset furloughs, salary cuts, or an increased workload created by layoffs and resource reductions. The key in preventing fraud and abuse is limiting the opportunities for it to occur. Many jurisdictions unwittingly provide opportunities by having limited control systems and limited oversight. Controls and oversight are important for maintaining staff accountability and managing a fuel budget to better ensure that taxpayer money is spent wisely.

The purpose of this advisory is to assist jurisdictions in developing effective controls and oversight for the purchasing of fuel and fuel use.

¹ For the purposes of this advisory, fuel refers to motor vehicle fuel such as gasoline, diesel, etc.)

Purchasing Fuel

All municipal fuel purchases are subject to the Uniform Procurement Act, Massachusetts General Law Chapter 30B (M.G.L. c.30B). Jurisdictions surveyed by this Office obtain fuel by:

- 1) Using a credit card or fleet management card system for purchases from private service stations;
- 2) Using contracts with local private gasoline/service stations for vehicle fueling;
- 3) Purchasing fuel in bulk and maintaining fueling stations.

In this Opinion of this Office, all purchases of fuel, including those using credit cards or fleet management cards are subject to competitive procurement under M.G.L. c. 30B. This means that a jurisdiction subject to M.G.L. c. 30B cannot purchase fuel from any vendor or “gas” station. A jurisdiction may only use a vendor or gas station chosen through a competitive process. Thresholds for procurement should be based on total estimated yearly fuel purchases for the jurisdiction and not be based on total purchases/transactions for individual vehicles or individual departments if the source of fuel for multiple departments will be the same.

Using Credit Cards

A jurisdiction that uses credit cards for fuel purchasing should consider using a “gas” vendor card or a vehicle fleet management card such as Wrights Express, the Commonwealth’s vendor under statewide contract VEH84 – Fuel Card and Fuel Management Services.² There are many vendors who offer this type of fleet card and most major gasoline companies (i.e., Mobil, Shell, Hess, Gulf, etc) offer gas cards. Using these types of cards is a form of control because they limit what can be purchased and, in the case of gas cards, where the purchase can be made. Gas cards

² Gas credit cards are usually issued by a particular gasoline company/franchise and may only be used at stations owned, operated, or licensed by the particular company. Fleet cards are usually issued by third-party vendors and can be used at many different gas stations like credit cards such as Visa®, Mastercard® etc. Fleet cards are usually restricted to purchases that can be made at a gas station only and the vendor may provide various detailed purchase/usage reports to the cardholder.

provide control since purchases can be restricted to fuel only thereby excluding purchases of services, supplies, and incidentals from a convenience store attached to the station. As another form of control, if a jurisdiction competitively procures fuel from a particular franchise in its community then it can use the gas card associated with that franchise to restrict employee purchase locations (a purchase made at another location could be flagged for review) and the monthly credit card statement may act as a transaction and usage log.

Fleet cards can be used at different franchises like other credit cards but their purchasing power can be restricted by the cardholder similar to gas cards. When using fleet cards a jurisdiction must ensure that purchases are made only at franchises selected competitively through M.G.L. c. 30B.

Using standard credit cards such as Visa® and MasterCard® creates opportunities for cardholder abuse because they may be used at many locations for a wide variety of goods and services. Credit card use requires more rigorous review and oversight of purchases than typical invoicing unless the credit card company can accommodate purchase restrictions (i.e., can only be used at gas stations or can only be used for fuel purchases). Credit card companies may be able to do this based on vendor and purchase codes. However, if it cannot be restricted, then card use must be strictly monitored. Like fleet cards, a jurisdiction must ensure that purchases are made only at franchises or stations selected competitively through M.G.L. c. 30B.

Regardless of the credit card type used, purchases should be restricted to fuel only and should be monitored regularly as any other purchase made by a jurisdiction. A diligent procurement or audit official should never pay an invoice or bill without verifying that the purchase was authorized and the good or service was received.

To facilitate a review, credit card users should be required to obtain and submit receipts for purchases. Reconciliation should be done by staff in the municipal accountant or auditor's office or other independent office and should never be conducted by the user or within the user's department. Separation of duties is at the heart of a sound internal control plan. Non-fuel purchases should be flagged and reviewed for propriety with

policies and compliance with M.G.L. c. 30B. If a violation of M.G.L. c. 30B is discovered, a jurisdiction should seek a review by legal counsel to determine whether vendor payment may be made. Non-fuel purchases could include the purchase of a service (oil change, flat repair, tune up, etc.), supplies (motor oil, brake fluid, etc.), parts (battery, filters, etc.), or convenience store purchases (food and grocery items).

As additional control measures, when distributing credit cards, a jurisdiction should consider whether the credit cards should be assigned to an individual or to a vehicle. Credit limits on these cards should be low and, if possible, dollar limits for individual transactions should be set (for example, a vehicle with a 15 gallon fuel tank could have a limit set based on the total cost of a tank fill-up.) A jurisdiction should also understand what fees, interest rates, and penalties apply to the credit cards.

Lastly, the use of credit, procurement (P-cards), or gas cards raises unique municipal finance issues regarding the carrying of short term debt, finance charges, and, in some cases, prepayment concerns. Prior to using any credit or other type of card, a jurisdiction should contact the Division of Local Services at the Department of Revenue or check the Department's website for information to ensure that the use of these cards is appropriate under municipal finance law.

Using Fleet Management Cards

Fleet cards are similar to credit cards and, like gas cards, are only valid for fuel and vehicle maintenance services. Other benefits associated with these fleet cards include, but are not limited to, the following:

- 1) Fleet card vendors may be able to provide external monitoring and reporting. For example, the vendor may be able to provide miles-per-gallon (MPG) use reports, variance reports (identifying "red flags" like multiple transactions in a day, fuel type not matching vehicle type) and other reporting not available through other credit cards.
- 2) Many fleet cards do not carry user fees and transaction fees, like other credit cards. Fees are typically paid by the vendor/franchise from which the fuel purchase is being made. All fee and surcharge arrangements should be identified in contract documents.

- 3) Some fleet cards provide per gallon fuel discounts if purchases are made at affiliated vendors/franchises.
- 4) The card vendor can filter out any sales and fuel taxes that are not applicable to a local government before an invoice for payment is made.
- 5) Many card vendors provide daily transaction reporting through their websites.

Again, all fuel purchases, including those made with fleet cards, are subject to competitive procurement under M.G.L. c. 30B.

Using a Local Franchise or Service Station Contract

Jurisdictions with low fuel use or that lack municipal storage tanks/fuel pumps might contract with a local service station for fuel and/or services. M.G.L. c. 30B applies to these procurements based on the total applicable dollar thresholds and contract term length.

Under this type of contract, the vendor usually invoices the jurisdiction for purchases. A jurisdiction should develop a control system with the vendor to ensure that only government vehicles operated by public employees from your jurisdiction are allowed to purchase fuel under the contract.

A jurisdiction should also use routine contract management and oversight practices to ensure that billed fuel purchases are accurate and that the correct price is paid for the quantity purchased. To facilitate this process, employees should obtain receipts after fueling and provide them to the appropriate independent reviewer in your jurisdiction. Employees should also maintain monthly vehicle fuel logs. At least a sample of these logs should be collected at the end of each month for reconciliation with receipts and vendor invoices.

Bulk Fuel Purchasing – Using a Municipal Fueling Station(s)

A jurisdiction may determine that purchasing bulk fuel is the most cost effective and efficient procurement method based on the volume used. For bulk fuel purchasing, two levels of oversight are needed: fuel acquisition cost oversight and fuel use

management. In both cases, there is a fundamental need for complete and accurate data and proactive monitoring.

Historically there has not been much concern about controlling and monitoring fuel use because of the formerly low cost of fuel. Some jurisdictions considered oversight more expensive than the fuel itself and so not an effective use of limited resources. However, because of increasing fuel costs, heightened security concerns and raised awareness about the environmental impact of fuel use, control and management of fuel has been increasing. Unfortunately, there are limited oversight resources available in most jurisdictions and, although more expensive, fuel may not be viewed as a commodity whose use can be monitored to achieve cost savings. Jurisdictions must work to ensure that systems and actions reflect current economic, environmental, and security reality.

To purchase bulk fuel, many jurisdictions use the Commonwealth's wholesale fuel contract while others use collective purchasing contracts or enter into their own contracts with wholesale suppliers. Regardless of how the fuel is purchased, there are three key controls that should be used.

- 1) The quantity of fuel delivered should be monitored. Quantities reported on delivery slips should be compared to fuel gauges on storage tanks. If storage tanks do not have gauges (or the measuring system is outdated), a jurisdiction should investigate purchasing a new measurement device. Also, as with all calibrated equipment, gauges and other measuring devices, they should be maintained properly and periodically recalibrated for accuracy per the manufacturer's specifications. A jurisdiction must also comply with all applicable federal and state laws and regulations that may require the installation of monitoring devices.
- 2) The measurements obtained from the storage tanks can also be used to verify fuel usage. Discrepancies can be investigated to determine a cause. Causes may include theft, leaks, or other problems with storage tanks. Taking the total amount of fuel on hand after the last delivery and subtracting the amount on hand immediately before the next delivery should provide the amount of fuel used during that same period. This difference can be compared to reporting from a fuel management system and/or employee usage reports.

- 3) The cost of fuel should be tested for accuracy. All bulk fuel purchasing contracts should be based on a pricing structure whether it be a fixed or variable (based on an index) cost contract. A fixed price is simplest to monitor as the price is locked into a per gallon price for a specific time period and this price can be compared to the price invoiced by the wholesaler. However, fixed rate pricing for a volatile commodity carries significant risk as you are “playing the market.” In 2008, many municipalities entered into fixed price contracts at \$4.00 or more per gallon. With rising prices, the municipalities considered this a reasonable risk. However, when prices dropped back into the \$2.00 per gallon range, the municipalities were still contractually obligated to pay the higher prices at \$4.00 or more per gallon. If the price is based on an average wholesale price or other indication (index), you must know the source of the indication to verify its reasonableness and integrity. You must also be able to independently obtain and verify a price based on an indication from a source other than the distributor. Needless to say, the pricing structure for any contract should conform to an acceptable and readily understood industry formula. More information on the use of a fuel index or price adjustment clause in fuel contracts can be found in the Office of the Inspector General’s Procurement Bulletin, v.14 n.2 (June 2008), p.2.

Contracts should also identify any other charges that may impact pricing and/or be invoiced by the wholesaler such as delivery charges, environmental fees, etc. It is important to note that a vendor cannot charge any fees, surcharges, etc. unless these are included in the contract.

Managing Fuel

There are a variety of ways to monitor fuel use, some are more accurate and costly than others. A basic, low cost method is the use of a lock and key at the municipal fueling station (gas pump). Some jurisdictions still rely on this method to control access to pumps. A manual log entry system to track pump access is used in conjunction with the lock and key. Either a staff member is assigned the responsibility of maintaining the log or the employee using the pump is required to make the log entry. This is a simple method but it does not provide for adequate accountability, security, or control.

At a minimum, logs should provide an audit trail for a third party review regardless of who maintains the log. The keys to the pump locks should be tightly controlled to ensure that spare keys are not used, that key copies have not been made, and that only authorized employees can use the keys. Ideally, the keys should be held by the designated fleet administrator, fuel manager or supervisor, and employees should have to obtain keys from that person. Monitoring fuel supplies without a control system is impossible.

Monitoring pumps is difficult because it may not be practical to staff pumps 24 hours per day even though fuel is often available 24 hours per day, 365 days a year. Also, gas pumps are often located at a distance from an office facility or placed at a more remote location making direct observation difficult.

For these reasons, most bulk fuel purchasers that maintain their own gas pumps use an electronic or computer based key, card or transponder based fueling system that captures fueling data and requires the entry of personal identification numbers (PINS) and other information, such as an odometer reading, before fueling is permitted. Such safeguards are vital to controlling costs, keeping staff accountable, and maintaining security. These systems enable jurisdictions to do, at least, the following:

- Create access controls through PIN numbers.
- Record and track transactions.
- Restrict access based on specified criteria.

- Provide varied reporting capabilities.
- Offer vehicle management and maintenance scheduling capability.
- Maintain fuel expense and budget tracking.

This Office strongly recommends the use of an automated system for those jurisdictions not already using one and encourages those with systems in use to investigate upgrading or replacing their systems as technological advances may greatly improve the controls and oversight provided by older systems. This Office reviewed a number of fuel system audits from around the nation that identified significant reductions in fuel use after a jurisdiction installed these types of fueling systems. The audits attributed this lower usage to a reduction in fuel misuse, theft, and a new awareness by employees of their fuel consumption. Arguably, with significant consumption reductions, fuel systems may pay for themselves. However, no matter how sophisticated the system, it does not replace the need to monitor, review, and audit activity.

“Red Flags”

The following indicators of problems with fuel accountability have been identified by the Inspector General’s Office from its audits and reviews and from those of other oversight agencies nationwide. A jurisdiction should verify that it does not exhibit these indicators and is not currently vulnerable to the misuse outlined here.

Fueling Process Vulnerabilities

- Multiple fueling transactions during the same day may indicate the fueling of a personal vehicle in addition to an authorized vehicle. An employee could manipulate odometer reading entries during fueling to provide a cover for the unauthorized transaction. For example, the employee completes two 10 gallon transactions – one for each vehicle - but enters odometer readings from only the authorized vehicle. A fuel use report might identify lower than normal miles per gallon (MPG) for that vehicle but would not necessarily identify a theft. The fuel administrator should question the low MPG and any multiple transactions on the same day.
- Abnormal fuel amounts could indicate a problem. For example, in one Massachusetts community, the fuel administrator discovered an employee theft because the employee pumped 29 gallons during one transaction presumably into the municipal vehicle assigned to the employee. However, the administrator knew that the assigned municipal vehicle only had a 15

gallon capacity fuel tank. A fueling limit based on vehicle tank capacity and/or a comparison of transaction amounts to vehicle capacity might identify a possible theft.

- Employees can arrange for sequential fueling where a personal or unauthorized vehicle is fueling at the same time as an authorized vehicle. This turns two transactions into one thereby eliminating an obvious red flag. An MPG report would still detect lower than average MPG for the authorized vehicle based on the odometer entry.
- Sequential fueling can also be used to fuel multiple authorized vehicles on one fueling key or card even though all vehicles have been assigned a card/key. This enables the employee to use a key/card from one of the authorized vehicles for personal or unauthorized use. An MPG report could identify a problem with the authorized vehicle and the timing of transactions made with the other key/card could be a red flag.
- Employees may fuel assigned vehicles often for smaller amounts to hide fuel theft. Frequent small transactions may discourage scrutiny and could hide periodic misuse of fuel or the assigned vehicle or fuel skimming.
- An employee may skim fuel during a transaction by using gas cans or by fueling directly into personal equipment being transported by the employee such as lawnmowers, snowmobiles, jet-skis, etc.

Personnel Vulnerabilities

- Unmonitored use of credit and fleet cards allowed for personal and/or unauthorized purchases.
- Unsupervised municipal personnel selling fuel to other employees and to the public.
- Access to security cameras allowed employees to turn the cameras off before fueling or allowed employees to disable cameras or leave the cameras in disrepair.
- Employees disabled vehicle odometers to make it more difficult to monitor fuel use.
- Lack of documentation allowed employees to claim that personal vehicles were used for business purposes as justification for obtaining municipal fuel.
- Lack of monitoring allowed employees to “adjust” odometer entries during fueling to enter false readings rather than actual readings. This would negate any possible MPG red flags in system reports.

Control Vulnerabilities

- Multiple vehicles and/or employees assigned to the same system key or card provided opportunity for abuse because of a confused audit trail.
- Many pieces of equipment assigned “miscellaneous” keys making visual monitoring of usage reports unproductive because specific equipment or vehicles cannot be tracked.
- Using fueling keys or cards assigned to employees on leave or vehicles used infrequently or seasonally.

Recommendations

Oversight

- Monitor, review, and audit transactions for accuracy and reasonableness.
- Fuel administrators should fully understand all system and reporting functions and be able to generate detailed system reports efficiently.
- Develop routine reporting to identify duplicate transactions, fuel use per vehicle, and weekend, night, and holiday transactions. Investigate whether an employee's shift can be coded into the system. A transaction outside of the shift period could be a red flag. For example, why would a first shift employee be accessing fuel during the second or third shifts?
- Spot check employee timesheet reporting against time of fuel station transactions.
- Review all "by-pass" transactions where the fueling station was accessed without the need for entry of required codes and where master or management override codes were used.
- Fuel management system data should be used routinely to monitor fuel use and vehicle performance. For example, periodically audit, on a sample basis, the performance of individual vehicles by comparing vehicle activity to MPG reporting to determine reasonableness and efficiency of work performed and vehicle performance.
- Use fuel management system to "flag" when routine maintenance work is required. If the flag is not removed, then fuel access can be denied. This can ensure fleet maintenance.
- Spot check actual vehicle odometer readings against odometer readings for that vehicle that have been entered into the fuel management system for the same vehicle.
- Develop a routine report by fuel type (gasoline vs. diesel and for different grades/octane types of gasoline.) Verify that only employees assigned to vehicles that use "special" fuel types use these types (for example high-octane gasoline.) Additionally, these same employees should not be using other types of fuel. For example, a building inspector with a vehicle that uses regular 87 octane unleaded fuel should not be reported as pumping premium (91 octane) unleaded, diesel, or other fuel types unless pre-authorized by the system administrator for a specific purpose.

Controls

- Have written fuel use and fuel transaction policies in place and provide annual training/refresher on the rules.
- Limit fueling station access to daytime hours or limit evening use to essential use only (with specific codes).
- Every municipally owned vehicle, piece of equipment and gas can, should be assigned a unique fueling key or card.
- Different staff people, ideally in different units or departments, should order fuel, reconcile fuel deliveries, manage fueling systems/stations, and audit/review fuel use and/or purchases.
- Control fuel use for take-home vehicles. Have a written policy in place and determine whether fuel use for commuting with take home vehicles should be allowed.
- Place limits by day, week, etc. on how much fuel can be obtained on one card or vehicle. Set fueling limits by vehicle type, tank capacity, job title or whatever parameters would assist control efforts.
- Access to fuel as a form of reimbursement for an employee's business use of a personal vehicle should not be allowed. The employee should be reimbursed under your jurisdiction's expense reimbursement policy.
- Do not use a fuel management system in conjunction with credit or other cards for outside fuel purchases. This creates control issues and makes proper accounting for fuel use and vehicle performance difficult.

Security

- Deactivate keys and cards for inactive, retired, or terminated employees and for inactive or decommissioned vehicles.
- Use pump locks in addition to system codes for after-hours use. Maintain rigid key and access code control for pump locks. Do not allow sharing of keys or codes.
- Eliminate fuel keys or cards that have had little or no use recorded.
- Deactivate lost or stolen keys and cards.
- Security measures such as cameras should monitor fueling stations and access to fueling system information and equipment should be limited and maintained behind locked doors.
- Periodically audit fueling keys and cards to verify that the person and/or vehicle that had been assigned the key/card still maintains possession of and

control over the key/card. This is similar to asset checks to test whether employees assigned cellular telephones, laptop computers, etc. retain possession.

- Lock out from system access a key or card where the PIN number is entered incorrectly three times or more.
- Consider requiring password, PIN number and/or other identification codes to be changed periodically.

Conclusion

Fuel is expensive and may continue to increase in price. As budgets tighten, lowering commodity costs through more effective purchasing or reducing use can lessen budget strain and perhaps save jobs. In California, one jurisdiction found that tightening fuel controls reduced consumption in the first year by an amazing 41 percent. Controls not only discourage fraud and abuse but can also lessen waste. For example, employees might think twice about leaving the engine idling for long periods if they believe fuel consumption is monitored.

Controls may take many forms and have many layers. At a minimum, your jurisdiction should know how much fuel it is paying for, whether the price is accurate and who on staff is using the fuel supply, when they use it and whether this use appears reasonable. As a form of internal control, jurisdictions need to question red flags of possible misuse, review these flags and routinely audit activity. The effective monitoring of fuel use is important for financial, environmental and security concerns.

For these reasons, this Office recommends that all jurisdictions that dispense their own fuel have a computerized fuel management system that can meet current needs and create an effective control environment. Jurisdictions with aging management systems should consider replacing these systems or, if possible, upgrade their capability.

This Office also recommends that jurisdictions that use credit cards, fleet management cards, or contract purchasing establish adequate monitoring and oversight to ensure that only legitimate purchases are paid for at a fair and agreed upon price.

Lastly, this Office recommends that you use the red flags identified in this report to test the level of risk faced by your jurisdiction. Your jurisdiction should verify that adequate control and oversight is in place to eliminate the risk posed by a lack of controls. This Office also suggests that your jurisdiction review and implement, where applicable, the recommendations made in the report.