Fuel Management Audit

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County Auditor's Introduction

To: Chair Madrigal; Commissioners Wendt, Smith, Shiprack, and McKeel; Sheriff Staton; District Attorney Underhill; Director Swackhamer; Manager Vanderzanden

- We are presenting the report on our Fuel Management Audit in this alternative format.
- In general, we found that the County is using the best fuel management practices based on the volume and risks associated with each system.
- Improvements need to be made in systems to detect potential fraud or abuse, and to obtain accurate odometer readings and complete fuel transaction details.
- Daily use of price information could help with invoice accuracy and contract management, as well as analyzing fuel purchasing options.
- Management has been responsive to suggestions during the audit and cooperative with the audit team.

Steve March, County Auditor

Fuel Management Audit Objectives

1. Review controls that would reduce the risk of potential fraud or abuse.

2. Review fuel purchasing for compliance with best practices and contract terms.

Background

Fuel is a major expense for any fleet and a mission-critical asset that represents 21% of the County's Fleet cost. Monitoring fuel usage and costs is essential.

- Fuel is a liquid asset at risk for fraud or abuse.
- Fuel prices are volatile.

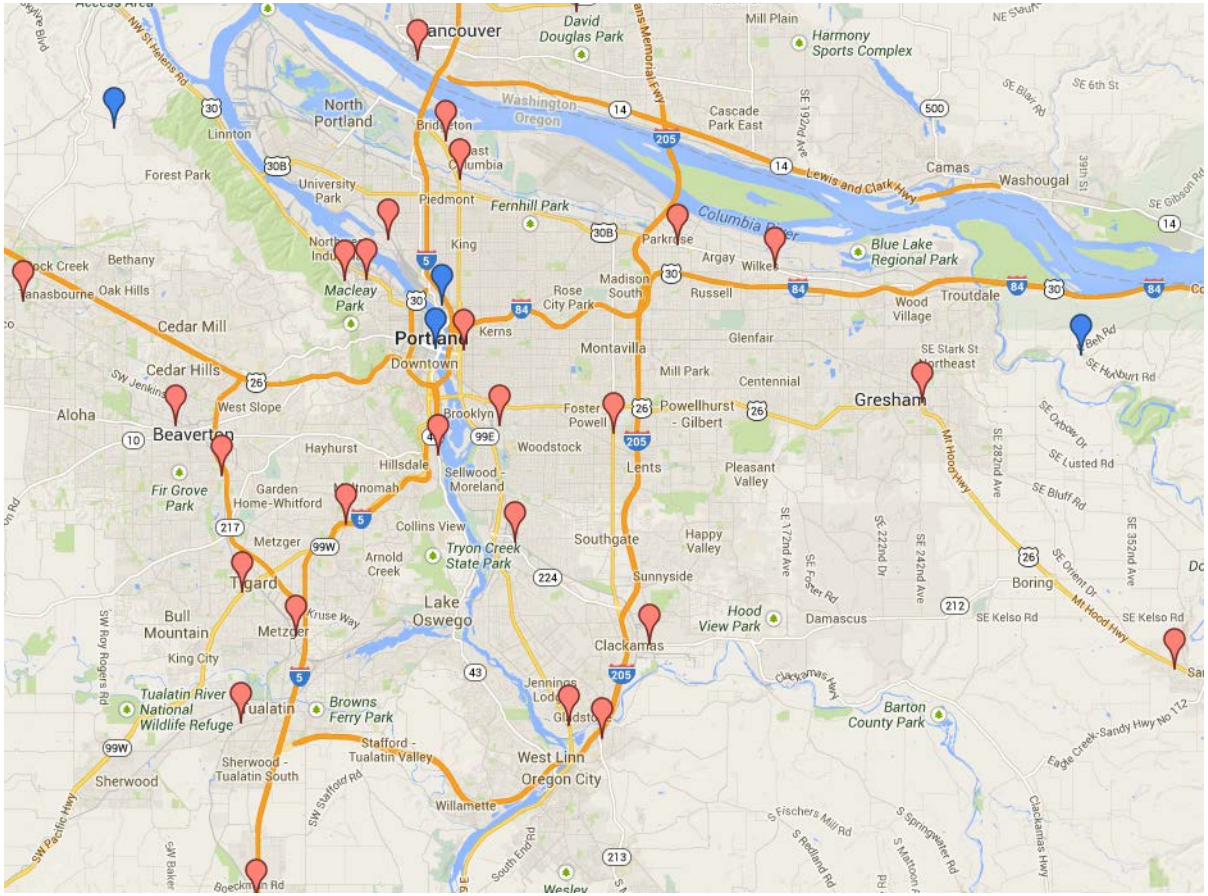
Multnomah County Fleet Services maintains a fleet of over 700 vehicles and specialized equipment.

- County departments depend on the fleet to serve residents.
- Fleet includes about 620 vehicles allocated to departments, about 80 vehicles in motor pool, as well as heavy equipment, such as pavement grinders.

How County Employees Obtain Fuel

Sources	Reasons for Use	Fuel Usage by Source Sept. 2013: 29,595 gallons
Bulk Fuel • District Road Shops • Blanchard & Motor Pool	• Provide cost savings • Meet unique district road shop needs • Potential source in event of emergency	District Road Shops 2,886 gal (10%) Blanchard & Motor Pool 8,149 gal (27%)
Commercial Cardlock Stations • Current vendor is PetroCard	• Extensive 24/7 network: Fuel when and where doing business • Controls with real-time data	17,150 gal (58%)
Portland CityFleet (City of Portland)	• For some vehicles in pilot project with CityFleet to provide fleet maintenance services	1,119 gal (4%)
Other Sources	• Help officers maintain cover	291 gal (1%)

Where County Employees Obtain Fuel

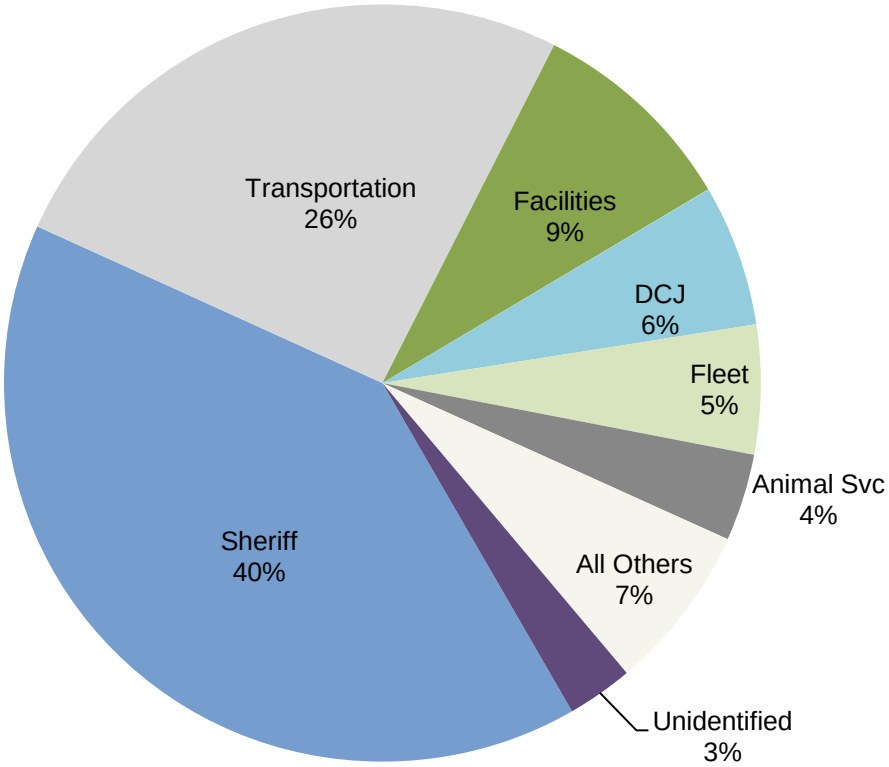


- Cardlock Locations
  - Fuel obtained at 60 locations in Oregon and Washington during review period
  - 91% of fuel transactions took place in Portland and Gresham
- County Bulk Fuel Locations
  - Bulk sites on both east and west of river
  - Remote road shops in Districts 1 and 5

Sample of location data from County bulk fuel and PetroCard transaction details for September-November 2013

Fuel Usage by Department

(estimated 350,000 gallons/year)



Source: Fleet Focus for September-November 2013; auditor estimate based on 3 months usage

Audit Objective 1: Review controls that would reduce the risk of potential fraud or abuse.

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- Fuel management systems are used to maintain, control, and monitor fuel consumption and stock.
- Include system controls designed to
  - **Prevent** potential fraud or abuse
  - **Detect** potential fraud or abuse

Preventive Controls

Best Practices

- Preventive controls involve
  - Physical security of fuel sites
  - Use of hardware to prevent unauthorized access to fuel
- Best practice controls evolve with new generations of technology.

What the County Does

Fuel Management System Generations	Generations the County Uses	
First generation— Padlock and paper log of fuel dispensed	Bulk fuel at Skyline and Springdale District Road Shops (10% of fuel used)	
Second generation—Electronic controls that require vehicle and driver identification to obtain fuel		
Third generation— The above, but connected to a PC used to report on fillings and input fleet information	Bulk fuel at Blanchard and Downtown Motor Pool (27% of fuel used)	
Fourth generation— The above, but connected to central internet server with data available in real time	Commercial Cardlock Stations (58% of fuel used)	Portland CityFleet (4% of fuel used) Real-time data not currently available to County

District Road Shops

- Most of the fuel is used in road equipment, much of which is stored at these two remote district road shops.
- 10% percent of total fuel usage is from these district road shops.
  - District 1 Skyline Road Shop in Northwest Portland
  - District 5 Springdale Road Shop in Corbett

Road shop equipment
Source: County Building & Property Data

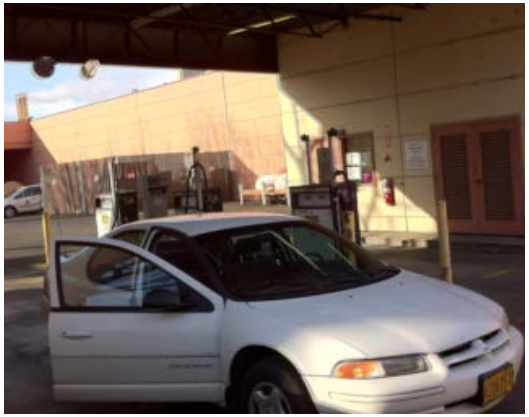
Bulk fuel pump at Skyline Road Shop
Source: Auditor's Office

What the County Does

Best practices in preventive controls	Bulk Fuel – District Road Shops (First Generation)	
Location physically secure?	Yes	Road Shop sites are gated and locked at night, and breakers to pumps are turned off.
Authorized employee ID required?	No	Employees use manual log for employee identification.
Automatic vehicle ID input?	No	Employees record vehicle ID in manual log.
Automatic odometer input?	No	Employee manually inputs vehicle odometer readings. We found inaccuracies.
Automatic fuel type & quantity input?	No	Pump electronically tracks fuel used, but this is recorded manually in log.
Usage data automatic to Fleet?	No	Logs are sent to Fleet monthly and manually input into Fleet control system.

Blanchard and Motor Pool

- The downtown motor pool site provides fuel for County programs downtown and on the west side of the river.
- The Blanchard site provides fuel close in on the east side of the river.
- These two bulk fuel sites made up 27% of total fuel usage.
- Employees enter their pin and the vehicle chip key into kiosk to obtain fuel.



Blanchard bulk fuel site
Source: Auditor's Office

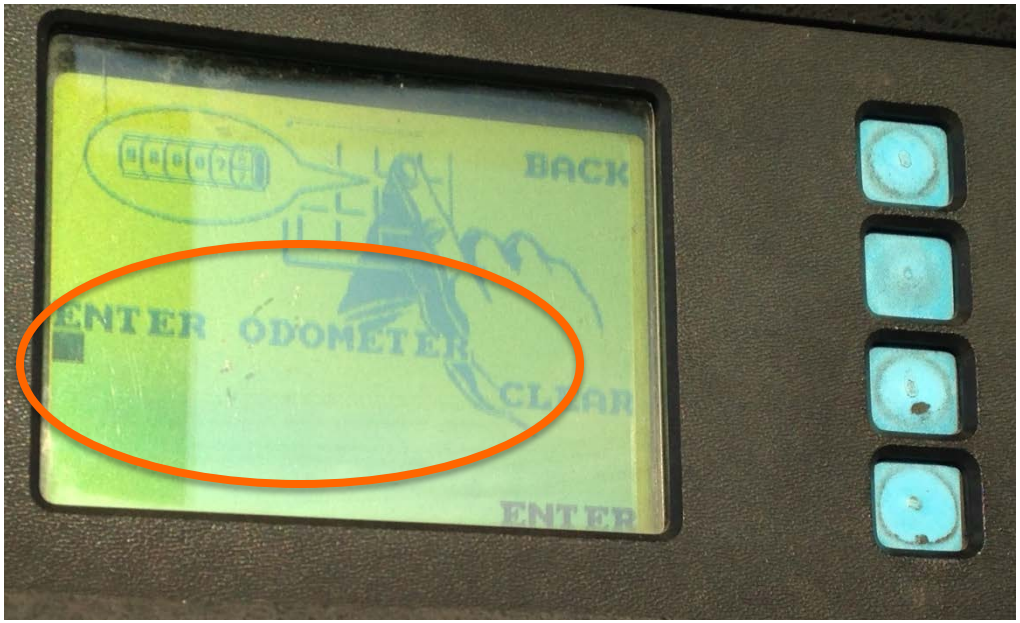
Kiosk to obtain fuel
Source: Auditor's Office

What the County Does

Best practices in preventive controls	Bulk Fuel - Blanchard & Motor Pool (Third Generation)	
Location physically secure?	Yes	Blanchard site gated at night; Motor Pool site monitored by security company.
Authorized employee ID required?	Yes	Unique employee ID number is required to obtain fuel.
Automatic vehicle ID input?	Yes	Fleet vehicles have chip keys that must be inserted into the pump to obtain fuel.
Automatic odometer input?	No	Employee manually inputs vehicle odometer readings. We found inaccuracies.
Automatic fuel type & quantity input?	Yes	Pump electronically tracks fuel used. Motor Pool has regular; Blanchard has regular and diesel.
Usage data automatic to Fleet?	Yes	Data including quantity, employee, vehicle, and mileage available on demand and downloaded weekly for upload to Fleet control system.

Commercial Cardlock Stations

- Provide 24/7 access to fuel across the County; critical access for employees working at night or on weekends.
- 58% of total fuel used.
- To obtain fuel, employees enter data including the vehicle odometer reading (shown at right).
  - It is possible to enter a 0 and still obtain fuel.



Kiosk at PetroCard affiliate prompting odometer entry
Source: Auditor's Office

What the County Does

Best practices in preventive controls	Commercial Cardlock Stations (Fourth Generation)	
Location physically secure?	NA	Facilities are used 24/7; County does not own fuel until it is pumped into vehicles.
Authorized employee ID required?	Yes	Unique employee ID number is required to obtain fuel.
Automatic vehicle ID input?	Yes	Fleet vehicles have vehicle fueling cards that must be swiped at the pump to obtain fuel.
Automatic odometer input?	No	Employee manually inputs vehicle odometer readings. We found inaccuracies.
Automatic fuel type & quantity input?	Yes	Pump electronically tracks fuel used.
Usage data automatic to Fleet?	Yes	Data including quantity, employee, vehicle, and mileage available on demand and downloaded weekly for upload to Fleet control system.

Fuel for some vehicles in pilot project with CityFleet

- Vehicles must have a device called a CANceiver installed.
  - Average cost $540 each.
  - Records odometer and other vehicle information when fuel nozzle inserted into tank.
- 4% of fuel usage for month of September 2013.
- County is exploring additional use of CityFleet.

Odometer and other vehicle data uploaded when fuel nozzle inserted into tank

Source: Public domain image

What the County Does

Best practices in preventive controls	Portland CityFleet (Fourth Generation)	
Location physically secure?	Yes	City bulk fuel sites are gated.
Authorized employee ID required?	No	Control is a vehicle installed CANceiver.
Automatic vehicle ID input?	Yes	CANceiver technology allows electronic recording of vehicle ID when fuel nozzle inserted into the vehicle.
Automatic odometer input?	Yes	CANceiver technology allows electronic recording of odometer reading when fuel nozzle inserted into vehicle.
Automatic fuel type & quantity input?	Yes	Pump electronically tracks fuel used.
Usage data automatic to Fleet?	No	Portland has been sending summary data to County, but no usage details; therefore, usage data not included in Fleet control system.

What We Found

- Fleet uses current fuel preventive control technology to meet County needs at most locations.
  - In our opinion, it may not be feasible to upgrade the district road shop pumps due to their remote locations and the unique usage at these two bulk fuel sites.
- Physical and preventive controls are not sufficient in themselves to reduce the risk of potential fraud or abuse. Detective controls are also needed.

Detective Controls

Best Practices

Detective controls that monitor and detect potential fraud include a complete system to generate reports.

- All fuel-related data should be warehoused in the same system.
- System should generate exception reports, for example
  - Number of fillings per day and gallons per day
- All transactions monitored and audited to include, for example
  - Trends in miles per gallon (MPG) per vehicle (key indicator of potential fraud or abuse)
  - Fillings by source and location
  - Fillings by department

What the County Does

- Fleet use Fleet Focus management software from AssetWorks that contains all fuel transaction data from the County's bulk and cardlock stations. However, does not include Portland CityFleet data. (Note: City of Portland also uses Fleet Focus.)
- Odometer readings needed to calculate MPG on a vehicle:
  - 30% of vehicles (200 out of 600) did not have odometer readings
  - Even more had inaccurate readings, which prevents the ability to calculate MPG on a vehicle.
  - Also, odometer readings in district road shop logs and CityFleet fuel transactions are not being input into Fleet Focus.

What the County Does

- Monitoring has not been systematic.
  - Monitoring has consisted of spot checking fuel usage reports.
  - In our opinion, Fleet Focus could provide the data needed to detect potential fraud or abuse. We generated reports using three months of fuel usage data from Fleet Focus, such as
    - Total fuel usage by vehicle
    - Number of fillings per day and gallons per day
    - Fueling by location and day of the week
    - Miles per gallon, for vehicles with accurate odometer entries
- Fleet has not fully utilized available reports.
  - Available reports from Fleet Focus
  - Additional PetroCard reports, such as fuel summaries showing usage trends

What We Found

- Although Fleet Focus can generate the information needed to monitor fuel usage, it is not being fully utilized and management cannot detect potential fraud or abuse.

What We Recommend

- Improve system controls to detect potential fraud or abuse.
  - Fleet should explore and implement additional monitoring reports from Fleet Focus and PetroCard systems.
  - To calculate MPG per vehicle, Fleet should hold departments responsible for entering accurate odometer readings.
  - Fleet should input CityFleet fuel transaction details into Fleet Focus, and input odometer readings from district road shop logs, along with the detailed usage data now being input.

Objective 2: Review fuel purchasing for compliance with best practices and contract terms.

Audit Objective 2: Review fuel purchasing for compliance with best practices and contract terms.

Best practices include

- Effective fuel management that balances factors including cost control with fuel accessibility.
- Having multiple fueling options.
- Fleets typically purchase fuel via contracts tied to Oil Price Information Service (OPIS) indices.

What the County does

- County uses various contracting methods
  - Commercial cardlock: Five-year requirements contract with PetroCard; ends in 2016
  - Bulk Fuel: State pricing agreement with Don Thomas Petroleum; ends November 30, 2014
  - Portland Fleet: Intergovernmental agreement for pilot with Portland CityFleet from 1/1/2013; new IGA anticipated July 1, 2014

PetroCard

- County requirements agreement; terms include
  - Prices per gallon based on OPIS daily unbranded average for Portland area, plus or minus OPIS differential.
  - Vendor will offer the County any price reductions offered to other customers.
  - Use of sustainable fuel grades (biodiesel and ethanol blend for regular).

- Receipt and invoice calculations are reviewed by both Fleet staff and the Administrative Hub.
  - The County does not verify invoice accuracy of per gallon price based on the contract terms.

Don Thomas Petroleum

- State pricing agreement; terms include
  - Price per gallon based on OPIS prices plus mark-up and delivery charges.
  - Use of sustainable fuel grades (biodiesel and ethanol for regular).
  - Bulk fuel is ordered as needed for the County's four bulk fuel sites.
- Quantity is approved by Fleet staff, and Receipt and invoice calculations are reviewed by both Fleet staff and the Administrative Hub.
  - The County does not verify invoice accuracy of per gallon price based on the contract terms.

CityFleet

- The County's intergovernmental agreement with the City of Portland Fleet Shops to provide services for 250 County Fleet vehicles. The County purchase of fuel at City bulk fuel sites is for vehicles that have installed CANceivers.
- Cost is City prices plus 14 cents a gallon overhead charge plus cost of the CANceiver at an average of $540.
- County is exploring additional use of CityFleet.
- The County has not verified billings to the agreement because the City has not provided the County with detailed fuel transactions (only a total charge per vehicle for fuel purchased).

What We Found

- County follows best practice to have multiple fueling options, and departments are utilizing all options.
- Contract management responsibilities are not clearly specified.
- Contract monitoring is not occurring.

What We Recommend

- Verify accuracy of vendor fuel billings:
  - Obtain and use daily OPIS prices to verify vendor invoices to contract terms.
  - Obtain transaction details from City to verify invoices to agreement terms.
- Clarify contract management responsibilities of Fleet and the Administrative Hub to ensure contracts are monitored. Hub should review prior and future billings for accuracy.
- Continue providing multiple fueling options to meet County needs.

Summary of Recommendations

Summary of Recommendations

1. Improve system controls to detect potential fraud or abuse.
   a. Fleet should explore and implement additional monitoring reports from Fleet Focus and PetroCard systems.
   b. To calculate miles per gallon per vehicle, Fleet should hold departments responsible for entering accurate odometer readings.
   c. Fleet should input CityFleet fuel transaction details into Fleet Focus, and input odometer readings from district road shop logs, along with the detailed usage data now being input.

Summary of Recommendations, continued

2. Verify accuracy of vendor fuel billings:
   a. Obtain and use daily OPIS prices to verify vendor invoices to contract terms.
   b. Obtain transaction details from City to verify invoices to agreement terms.
3. Clarify contract management responsibilities of Fleet and the Administrative Hub to ensure contracts are monitored. Hub should review prior and future billings for accuracy.
4. Continue providing multiple fueling options to meet County needs.

Our office identified several fuel management issues during the audit, but did not make recommendations about them because:

- Fleet management has started taking corrective actions.
  - Management has instituted new practices to reconcile bulk fuel inventory to Fleet Focus and to track fuel dispensed from the County's mobile fuel truck.
  - Management will investigate whether the County's participation in the State of Oregon's pricing agreement with PetroCard could provide the County with a better deal.
  - Management has started reviewing and cleaning data in Fleet Focus, for example, removing obsolete data in users.

Conduct of Audit
&
Audit Reporting

Methodology

- Review best practices for fuel management
- Analyses of
  - Fuel and vehicle data from Fleet Focus and PetroCard systems
  - Fuel vendor contracts and invoices
  - Purchase card and other incidental fuel purchase sources
  - Financial data from the County's enterprise system (SAP)
- Interviews with
  - Fleet manager and staff
  - Administrative Hub staff
  - Internal clients
- Site visits to observe fuel process and controls

Scope

- Included fuel usage only for Fleet vehicles.
- Detailed testing was for the three-month period of September, October, and November 2013.

Generally Accepted Government Auditing Standards

We conducted this performance audit in accordance with generally accepted government auditing standards. Those 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 objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Audit Reporting

This presentation is our formal report to the Board of County Commissioners on the results of our audit of the County's fuel management system. It meets our reporting requirements under

- County Code for reporting audit results to the Board of County Commissioners and
- Government Auditing Standards for reporting results of performance audits.

Formal Response from Management

Fuel Management Audit // Formal Response From Management

To: Auditor March; Chair Madrigal; Commissioners Wendt, Smith, Shiprack, and McKeel; Sheriff Staton; District Attorney Underhill; Director Swackhamer

From: Garret Vanderzanden, Fleet Manager 

The Department of County Assets and the Fleet Services Program thank the Auditor's Office for the time invested reviewing Fleet Fuel Management. The activities of the audit and the resulting recommendations have provided concrete action items that can be implemented to improve our oversight of this mission-critical commodity.

We agree that system controls can and should be improved to ensure that potential fraud or abuse related to fuel consumption is identified and addressed. We have begun working with our external card-lock fuel provider, PetroCard, our partners at CityFleet, and with our internal fuel management software, Fleet Focus, to identify consistent and regular reporting. This reporting will be monitored on a scheduled basis to ensure potential issues are identified and investigated. A specific area of focus will be odometer readings input by fuel users given that this data directly influences fuel economy reporting and has a trickle down effect impacting fraud detection and carbon dioxide emission reduction goals.

We also agree that contract management can be strengthened. This will include collaboration with our Admin Hub support staff on implementing clearly defined responsibilities related to verifying accuracy of vendor invoices based on contract terms. We will also be working closely with our fuel suppliers, Petrocard, Don Thomas Petroleum and CityFleet, to ensure that data being provided on invoices meets contract requirements.

Fuel has been noted in this report as a mission-critical asset by the Auditor's Office. The importance of this commodity is also recognized across Multnomah County. Fleet Services is committed to providing cost-effective and relative ease of access during normal operations and during emergency response. We agree with the Auditor's Office that multiple fueling options should continue to be provided. We are in addition working with our internal County partners and with CityFleet to evaluate options for additional fueling sites to ensure this access is not compromised.

Thank you again for the effort taken to provide this review and subsequent recommendations. We will continue to provide updates to the Auditor's Office as we enhance our Fuel Management program.