OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

AUDIT REPORT

Highway Contract Routes – Miles per Gallon Assessment

May 27, 2014

Report Number NO-AR-14-008

OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

HIGHLIGHTS

May 27, 2014

Highway Contract Routes – Miles per Gallon Assessment

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BACKGROUND:

The U.S. Postal Service contracts for transportation on over 15,000 highway contract routes (HCR) by identifying miles to be driven and negotiating a base operating rate per mile. Fuel is a major component of HCR total costs. The Postal Service negotiates annual fuel allotments based on miles per gallon (MPG), considering past suppliers' MPG contracts, and general vehicle and route type. In fiscal year (FY) 2012, HCRs used over 242 million gallons of fuel, costing about $926 million.

Our objective was to assess MPG used in the HCR program.

WHAT THE OIG FOUND:

We found the Postal Service's average MPG for HCRs was as much as 2.2 MPG below industry averages and as much as 4.1 MPG below industry leaders. This occurred because the Postal Service has no procedures in place to ensure contracting officers consider industry averages and specific vehicle classifications when determining MPG, nor does it document why MPG for some suppliers are below industry averages. Further, it does not have a comprehensive strategy to ensure that HCR contractors either use the most fuel-efficient vehicles in the industry or absorb the cost of using less efficient vehicles instead of passing that cost on to the Postal Service.

We determined the Postal Service incurred unnecessary fuel costs of about $48.3 million annually for FYs 2012 and 2013 and could avoid costs of about $48.3 million annually if it contracts for future fuel gallons based on at least industry MPG averages. Further, if the Postal Service uses industry advanced fuel-efficient practices, it can reduce its carbon footprint, conserve non-renewable energy resources, and save an additional $46.7 million annually in fuel costs.

Finally, establishing HCR MPG below the industry average results in excessive annual fuel allottments. This can create an environment for fraud, waste, and abuse. The risk is that suppliers may use excess gallons for non-Postal Service operations, which is prohibited. Consequently, we made several referrals to the Office of Investigations for supplier contracts with low MPG patterns.

WHAT THE OIG RECOMMENDED:

We recommended the vice president, Supply Management, develop procedures to ensure industry MPG averages and more specific vehicle classifications are used to determine allotted HCR fuel gallons. We also recommended the vice president, Supply Management, in coordination with the chief sustainability officer and suppliers, develop a comprehensive strategy for the use of advanced fuel-efficient technology in vehicles and equipment.

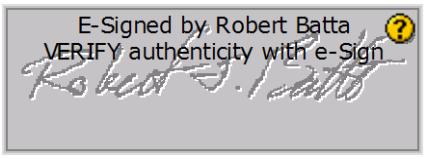
Link to review the entire report

OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

May 27, 2014

MEMORANDUM FOR: SUSAN M. BROWNELL
VICE PRESIDENT, SUPPLY MANAGEMENT

THOMAS G. DAY
CHIEF SUSTAINABILITY OFFICER



FROM: Robert J. Batta
Deputy Assistant Inspector General
for Mission Operations

SUBJECT: Audit Report – Highway Contract Routes – Miles per Gallon Assessment
(Report Number NO-AR-14-008)

This report presents the results of our audit of Highway Contract Routes – Miles per Gallon Assessment (Project Number 13XG012NO001).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact James L. Ballard, director, Network Processing and Transportation, or me at 703-248-2100.

Attachment

cc: Corporate Audit and Response Management

TABLE OF CONTENTS

Introduction

This report presents the results of our audit of Highway Contract Routes (HCR) – Miles per Gallon (MPG) Assessment (Project Number 13XG012NO001). This report is the third in a series that responds to a request from the postmaster general to review the HCR Voyager Card Program. Our objective[1] was to assess MPG used during the HCR contracting process. Management uses MPG to establish authorized contract fuel gallons for suppliers. See Appendix A for additional information about this audit.

The U.S. Postal Service contracts for highway transportation through a competitive bid process by establishing the miles to be driven and negotiating the operating cost per mile. It negotiates fuel gallons with suppliers by dividing the miles driven by the gallons submitted to identify the established MPG, considering general vehicle[2] and route[3] type. The total cost includes the negotiated fuel costs, which are a major cost component of the HCR contracts.

The Postal Service uses two methods to pay for highway contractor fuel:

- The Voyager Card Program, which uses fuel cards issued under the General Services Administration's (GSA) SmartPay2® Program.[4] This program is used in about 21 percent of all HCRs and accounts for about 74 percent of HCR fuel expenditures. The Voyager Card Program enables suppliers to purchase fuel directly from retail locations and some bulk fuel sites. The Postal Service makes payments directly to U.S. Bank's Voyager Fleet Services Program for these charges.

- The Fuel Price Indexing (Indexing) Program, which about 79 percent of HCRs use but which accounts for only 26 percent of HCR fuel expenditures. This method is usually used for smaller routes, box delivery routes, and HCRs unable to administer the Voyager Card Program. The Postal Service pays a set monthly fuel amount based on the annual authorized fuel gallons for routes that use the Indexing Program.

HCR fuel use in fiscal year (FY) 2012 was over 242 million gallons at a cost of about $926 million; therefore, ensuring that contracts include the correct number of fuel gallons based on the most economical MPG is crucial in controlling fuel costs in both the Voyager Card and the Indexing fuel procurement programs.

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[1] Our announced audit objective was to assess the operational effectiveness of the HCR Voyager Card Program, but we modified it to focus on setting contracted fuel gallons. We used MPG as a performance measurement and included indexed contracts.
[2] Postal Service HCR suppliers use a range of vehicles from light passenger types to heavy-duty tractor trailers.
[3] Some routes have many stops in urban areas and others use the highways to travel across the country.
[4] Federal agency purchase card programs operate under a government-wide GSA SmartPay2 master contract. Agency purchase card programs must comply with the terms of the contract and task orders under which the agency placed its request for purchase card services.

Conclusion

We found the Postal Service's average MPG for HCRs was as much as 2.2 MPG below industry averages[5] and as much as 4.1 MPG below industry leaders.[6] The Postal Service has certain processes for negotiating allotted gallons based on past MPG information, as well as general vehicle and route type. However, it has no procedures to ensure contracting officers consider industry MPG averages and specific vehicle classifications to determine MPG, nor does it have procedures to document why some suppliers' MPG are below industry averages. Further, it does not have a comprehensive strategy to ensure HCR contractors are either using the most fuel-efficient vehicles in the industry or absorbing the costs of using less efficient vehicles instead of passing these costs on to the Postal Service.

We determined the Postal Service incurred unnecessary fuel costs for HCRs of about $48.3 million annually for FYs 2012 and 2013, and could avoid costs of about $48.3 million annually if it bases contracts for future fuel on at least industry MPG averages. Further, if the Postal Service uses advanced fuel-efficient practices and leading technology that are common in the industry, it can reduce fuel costs by as much as an additional $46.7 million annually, reduce its carbon footprint, help meet its sustainability goals, and conserve non-renewable energy resources. Excessive fuel allottments also create an environment for potential fraud, waste, and abuse as suppliers may use excess gallons for non-Postal Service operations. See Appendix B for additional details on monetary impacts.

Considering Industry Averages and Vehicle Classifications in Miles per Gallon Determinations

MPG Averages. The Postal Service's average MPG for HCRs was as much as 2.2 MPG below industry averages[7] as shown in Table 1.

[5] The vehicle group includes vans and long-haul trucks and uses the indexing fuel program (see Table 1).
[6] Calculated using Postal Service tractor long haul under the Indexing Program average MPG of 6.1 (see Table 1) compared against the projected industry leading MPG used in our analysis of 10.2 MPG (see Appendix B).
[7] They were below industry averages for the two vehicle types the Postal Service uses, based on the type of fuel payment program and type of travel.

Table 1. Comparing Industry MPG Standards to Actual Contracted Postal Service HCRs

Postal Service Grouping		Voyager Card Fuel Program			Indexing Fuel Program		
Vehicle Group	Type of Travel	Industry MPG	HCR MPG	Difference in Miles	Industry MPG	HCR MPG	Difference in Miles
Tractor	Highway/Long Haul	6.7	6.4	(0.3)	6.7	6.1	(0.6)
	Urban/Short Haul	6.5	6.2	(0.3)	6.5	6.1	(0.4)
Vans	Highway/Long Haul	10.8	8.8	(2.0)	10.8	8.6	(2.2)
	Urban/Short Haul	9.1	8.0	(1.1)	9.1	8.2	(0.9)

Source: Environmental Protection Agency (EPA) - Smartway. Postal Service Transportation Contract Support System (TCSS) data.

Differences in MPG for all vehicle classes, route types, and fuel programs ranged from 0.3 to 2.2 MPG below the industry average. Since HCR suppliers travel over 1.5 billion miles annually and consume over 242 million gallons of fuel, incremental improvements in MPG could significantly lower the Postal Service's fuel costs. For example:

- A heavy-duty vehicle driven for 75,000 miles with an MPG increase of only 0.5 can reduce fuel costs by about $3,790 annually.
- By comparison, a light-duty vehicle (passenger vehicle) under the same scenario reduces fuel costs by only $230 annually.

Most HCR contracts included MPG allowances that were below industry averages. Specifically, our analysis indicated that over 4,400 HCR contracts were below MPG industry standards by vehicle type (tractors and vans), as shown in Table 2. On the other hand, over 2,000 contracts with either tractors or vans used MPG that were in line or above industry averages.[8]

[8] In summary, there are about 15,500 HCRs, of which about 6,400 are tractors and vans. The remaining HCRs were out of or audit scope as they contained equipment other than tractors or vans. Refer to the Objective, Scope, and Methodology section in Appendix A of this report for details on the HCR universe and our analysis.

Table 2. HCR Contracts With Below Industry MPG by Vehicle Type

HCR Contracts Below Industry MPG	HCR Contracts with Tractors	HCR Contracts with Vans
Less than 1 MPG	854	1,013
1-2 MPG	212	1,330
2-3 MPG	27	532
3-4 MPG	29	312
4-5 MPG	1	99
Over 5 MPG	6	21
Total	**1,129**	**3,307**

Source: TCSS and EPA data.

This occurred because the Postal Service does not have comprehensive policies and procedures requiring the use of industry averages for MPG when negotiating fuel gallons in HCR contracts. The Postal Service uses existing contract data of similar suppliers from TCSS to negotiate MPG and contracted fuel gallon allowances. This practice relies only on the historical MPG data of the Postal Service's contracted suppliers. In addition, the Postal Service does not have adequate processes in place to require documentation justifying why some suppliers have lower MPG or why the MPG are lower than industry averages. Establishing MPG below industry averages results in overstated (excess) fuel gallons and the additional fuel can create an environment for fraud, waste, and abuse. The risk is that suppliers may use excess gallons for non-Postal Service operations.[9]

By using MPG below industry averages, we estimate the Postal Service incurred unnecessary fuel costs for HCRs of about $48.3 million annually for FYs 2012 and 2013, and could avoid costs of about $48.3 million annually if it negotiates future contracted fuel gallons based on at least industry MPG averages. See Appendix B for additional details on monetary impacts.

Vehicle Classifications. The Postal Service's vehicle weight classifications are broad and do not capture specific gross vehicle weight to determine MPG, which is the normal practice in the transportation industry. We reviewed the Postal Service's vehicle grouping in the TCSS and noted the general groupings of HCR medium "vans" and heavy "tractors" were not in line with the industry practice of using a gross vehicle weight rating (GVWR).

Table 3 shows examples of vehicle classifications[10] and the large MPG differences among them.

[9] We identified patterns of low MPG for an HCR supplier or contracts with very low MPG individually and communicated this to the Office of Investigations.

[10] These examples of averages do not consider the impact of type of travel or "duty cycle" that we used for our analysis.

Table 3. Industry Classifications With Average Industry MPG

Vehicle Group	Medium-Duty "Vans"					Heavy-Duty "Tractors"					
Industry Vehicle Classification	3	4	5	6 (LTTL)[11]	6 (TL)	7 (LTTL)	7 (TL)	8A (LTTL)	8A (TL)	8B (LTTL)	8B (TL)
Average Industry MPG	10.2	9.3	8.4	8.0	7.7	7.6	7.7	6.3	6.3	6.0	5.9

Source: EPA *Truck Carrier Partner 2.0.12 Tool: Technical Documentation 2012 Data Year*.
Note: In the table above, industry MPG were calculated from member participants in an EPA study. Data were provided in widely used Department of Transportation (DOT) classifications and excluded information on duty cycle.

In 2013, the Postal Service established general MPG guidance for its transportation contracting teams to use to negotiate MPG. For medium-duty vehicles or vans, it established guidance of 8.5 average MPG, covering vehicle classifications 3 through 6 in Table 3. For heavy-duty vehicles or tractors, it established guidance of 6.3 average MPG, covering vehicle Class 7 through Class 8B in Table 3.

While this guidance can help improve MPG, it does not accurately reflect MPG across all vehicle classifications. By using expanded vehicle classifications, the Postal Service could more accurately determine MPG and potentially negotiate contracts with fewer gallons using higher MPG, based on vehicle classification. For example, if the Postal Service heavy-duty groupings are separated into industry classifications, the Class 7 vehicles' MPG may increase from 6.3 to 7.6 MPG. See Appendix C for a pictorial view of vehicle weight classifications the transportation industry uses and respective MPG expectations.

Further Increasing Miles per Gallon With Best Practices in Line With Industry Leaders

The Postal Service's average MPG for HCRs was as much as 4.1[12] MPG below industry leaders. This occurred because the Postal Service has not adopted a comprehensive strategy to ensure HCR contractors are using the most fuel-efficient vehicles in the industry to further increase MPG, reduce fuel costs, and conserve non-renewable energy resources.[13] In addition, it does not ensure that HCR suppliers are absorbing the costs of less efficient investments themselves instead of passing them on

[11] This EPA research divided Class 6 through Class 8 by GVWR, truck load (TL), and less-than truck load (LTTL), and made additional separations in Class 8 at 33,001-60,000 GVWR for Class 8a and greater than 60,000 GVWR for Class 8b.
[12] Calculated using Postal Service tractor long haul under the Indexing fuel program average MPG of 6.1 (see Table 1) compared to the 10.2 MPG projected industry leading MPG used in our analysis (see Appendix B).
[13] In 2009, the U.S. Postal Service Office of Inspector General (OIG) recommended the Postal Service develop and implement a comprehensive fuel consumption strategy for HCRs that included industry best practices. At the request of Postal Service management in April 2013, the OIG closed the prior fuel consumption strategy recommendations as "not implemented" due to the Postal Service's financial condition, despite the documented financial benefits over the long run, even when factoring in investment of capital expenditures.

to the Postal Service via the use of lower MPG and higher gallon allotments in the contracting process. Since 2008, the Postal Service has reduced fuel use for HCRs by eliminating trips. If the Postal Service strives to lead the way in reducing its carbon footprint, it must further reduce HCR transportation fuel consumption, since it is a major component of the Postal Service's greenhouse gas (GHG)[14] emissions.

Fuel-Reduction Efforts. We reviewed the Postal Service's 2012 *Sustainability Report*, which states their goals for reducing transportation petroleum fuel use for contracted transportation[15] is 20 percent by FY 2020. However, it only reduced contracted transportation fuel by less than 1 percent from 2008 through 2012. This occurred because the Postal Service's fuel consumption and sustainability strategy for contract transportation vehicles has been reducing HCR trips and miles resulting from the decline in mail volume. While the Postal Service has reduced highway contract miles by about 100 million since 2008, network optimization alone will not be enough to reach the fuel reduction goal. Postal Service officials acknowledge they can only cut so many trips and miles before jeopardizing network operations. Therefore, increased MPG should be part of a comprehensive sustainability strategy.

Adoption of Advanced Fuel-Reduction Technologies Needed. The Postal Service must embrace new transportation technological industry best practices. Some leading practices include using aerodynamic equipment, upgrading to low resistance tires and lower weight aluminum wheels[16] and adopting the next generation of advanced trucks. As discussed in Appendix D, vehicle manufacturers are developing new technologies and model options that reduce fuel use, such as the "SuperTruck" shown in Figure 1.

[14] The Postal Service's 2012 *Sustainability Report* shows that 44 percent of the Postal Service's total GHG emissions are related to contracted transportation.

[15] Contract transportation, as referenced in the Postal Service's *Sustainability Report*, includes HCR, air, and rural route carriers who deliver mail using their own vehicles. In 2012, the Postal Service's contracted vehicles consumed nearly 575 million gallons of petroleum, representing over 73 percent of the Postal Service's total petroleum requirements for transportation.

[16] Low rolling resistance tires are either single, wide, or energy efficient, dual tires. There are three types of wheels (rims); steel, low-weight steel, and aluminum, with decreasing weight, respectively. The less weight the rim holds, the better the fuel economy. A single wide tire and wheel (rim) is lighter than two standard tires and wheels. Single wide tires have lower rolling resistance and aerodynamic drag.

Figure 1. Cummins and Peterbilt Motors Company "SuperTruck"

Source: Cummins and U.S. Department of Energy (DOE) - Energy Efficiency and Renewable Energy.[17]

Industry-leading transportation companies with similar sustainability goals are incorporating advanced technologies. These companies are participating in private and public sector collaborations, such as the 21st Century Truck Partnership (21CTP), the EPA's SmartWay Partnership, and the DOE-sponsored SuperTruck Program. Further, the next generation of heavy-duty vehicle technologies will enter the market in 2015 and provide additional MPG improvements and fuel-saving opportunities. See Appendix D for examples of industry best practices.

We determined that, by implementing a comprehensive fuel consumption strategy, the Postal Service could ensure HCR supplier contractors use industry-leading technologies to reduce fuel use by about 500 million gallons over 10 years, save an additional $46.7 million annually, and reduce GHG emissions.[18] See Appendix B for additional details on monetary impacts.

Recommendations

We recommend the vice president, Supply Management:

1. Ensure that the best value determination process in Highway Contract Route negotiations includes use of industry miles per gallon averages for the proposed equipment or properly justifies and documents why lower than industry average MPG amounts are used.

2. Use vehicle classifications that are more in line with industry standards to establish more precise miles per gallon for determining authorized gallons for highway contract routes, based on vehicle type and gross weight.

[17] The demonstration tractor-trailer achieved a 54 percent increase in fuel economy during testing in the fall of 2012, averaging nearly 10 MPG under real world driving conditions by U.S. Xpress Enterprises Inc. drivers.
[18] This is a long-range strategy to reduce fuel use and costs while ensuring overall best value for the Postal Service. This may require overall changes in contracting practices, such as extending the contract period to cover the payback period, including fuel-efficient vehicles and alternate fuel vehicles.

We recommend the vice president, Supply Management, in coordination with the chief sustainability officer:

3. Develop a comprehensive and cost-effective strategy, in coordination with highway contract route suppliers, for using advanced fuel efficient technology in vehicles and equipment and periodically review that strategy, as necessary, to account for continuous, evolving changes in technology.

Management's Comments

Management agreed with the findings and recommendations, but disagreed with the monetary impact calculations. Below is a summary of management's responses to our recommendations.

Regarding recommendation 1, management stated they would incorporate industry MPG as a benchmark in the price analysis and contract negotiation processes. The target completion date is September 30, 2014.

Regarding recommendation 2, management agreed to incorporate industry vehicle classifications and industry average MPG information for use in contract negotiations and assessing authorized gallons for HCRs. The target completion date is September 30, 2014.

Regarding recommendation 3, Supply Management and the Office of Sustainability are actively working with HCR suppliers to promote alternative fuel use and implement fuel-efficient technology equipment to improve its sustainability and reduce costs. Management agreed to develop a comprehensive and cost-effective strategy for using evolving industry technology. The target completion date is January 31, 2015.

Regarding our monetary impact methodology, management stated the report does not provide analytical support that using industry MPG would result in $96.6 million in cost avoidance over a 2-year period. The Postal Service noted using vehicles that achieve high MPG may increase a supplier's overhead and total contract costs. Management also stated the report does not provide specific data to support conclusions that using industry advanced fuel-efficient practices will save $46.7 million annually. They stated while they support the use of sustainable practices and technology, suppliers' investments in these technologies will impact costs and may increase the Postal Service's total contract cost. Management stated they will continue to work with suppliers and explore various options to enhance sustainability while exercising prudent cost controls.

See Appendix E for management's comments in their entirety.

Evaluation of Management's Comments

The OIG considers management's comments responsive to the recommendations and corrective actions should resolve the issues identified in the report.

Regarding management's comments on our monetary impact calculations, our approach and methodology is sound. We explained and provided the full monetary impact analysis, including our assumptions and calculations, to management on several occasions and they did not request additional information or raise any concerns during the audit. We also considered offset purchase costs for advanced equipment totaling over $657 million. Finally, our report clearly addresses return on investment opportunities resulting from reducing fuel use for contracted surface transportation by about 500 million gallons over 10 years (or about 50 million gallons annually).

The OIG considers all recommendations significant, and therefore requires OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions are completed. These recommendations should not be closed in the Postal Service's follow-up tracking system until the OIG provides written confirmation that the recommendations can be closed.

Appendix A: Additional Information

Background

The Postal Service's HCR fuel use in FY 2012 was over 242 million gallons at a cost of about $926 million. Therefore, ensuring that contracts include the correct amount of contract fuel gallons based on the most economical MPG is crucial in controlling fuel costs in both the Voyager Card and the Indexing fuel procurement programs.

The Postal Service Network. The Postal Service has one of the largest transportation and logistics networks in the world, reaching every community, town, and city in the U.S. It relies on an extensive network of contract partners to move mail primarily by highway and air.[19]

Postal Service mail volumes have declined by almost 54 billion pieces, or 25 percent, since 2007. This dramatic drop in mail volume has made it challenging for the Postal Service to efficiently operate, fund, and sustain its transportation network. Declining mail volume has led to significant excess capacity in the transportation network, which provided opportunities to consolidate trips and optimize the network. The Postal Service has undertaken several initiatives since 2008 to optimize its network by reducing the number of miles traveled and fuel consumption for transporting mail by HCR and air.

Negotiating MPG and Allotted Fuel Gallons for HCR Contracts. Each HCR is negotiated and awarded or renewed individually about every 4 years. The Postal Service contracts for highway transportation through a competitive bid process by establishing the miles to be driven and negotiating a reasonable operating cost per mile. Fuel costs are negotiated as a separate[20] cost within the total contract and are a major cost component of HCR contracts. The Postal Service negotiates fuel gallons with suppliers by dividing the miles driven by the gallons bid to establish an MPG, considering general vehicle and route type. During the bidding process, the contracting officer will examine MPG and other cost information to determine whether the bid is reasonable and calculate a total cost to consider within the context of cost per mile.

Before beginning negotiations, transportation contract specialists review a Representative Cost Worksheet (called a Scratch Sheet), which is produced in the TCSS[21] using existing contract data. The Postal Service has issued general guidance to contract specialists on a target MPG for tractor-trailers of 6.3 and straight trucks (vans) of 8.5.

[19] Contract transportation also includes rail and water. Additionally, the Postal Service contracts with rural route carriers to deliver mail using their own private vehicles.
[20] Fuel costs are identified on Line 6 of Postal Service (PS) Form 7468A, Highway Transportation Contract – Bid or Renewal Worksheet. Based on the fueling locations provided by the HCR supplier on the Fuel Purchase Form (HC 131), the contracting officer will determine cost.
[21] TCSS is used to manage transportation contracts and related activities and produces PS Form 7468A, based on similar records, also known as Scratch Sheets.

HCR Fuel Payment Methods. When the Postal Service awards or renews an HCR contract, it requires all suppliers to participate in the Fuel Management Program, which provides contract guidance for HCR suppliers to obtain fuel and receive reimbursement.[22] The Postal Service uses two fuel management payment methods for HCR suppliers: the Voyager Card Program and the Indexing Program.[23] The Voyager Card Program enables the supplier to purchase fuel from retail locations and some bulk sites and the Postal Service makes payment directly to U.S. Bank's Voyager Fleet Services Program. In contrast, the Indexing Program allows the Postal Service to include fuel as part of the regular contract monthly payment. The amount reimbursed per gallon is indexed to published regional prices.

Objective, Scope, and Methodology

This audit is the third in a series that assesses MPG used during the HCR contracting process.[24] To address our objective, we obtained, assessed, and analyzed Postal Service computerized data on HCR and fuel gallons. We also reviewed industry literature, prior OIG reports, and Postal Service documents; spoke with Postal Service management and staff; and discussed MPG for the trucking industry with other federal agencies.

For our analysis, we used the Postal Service's classification of tractors and vans. We calculated an industry standard MPG for this audit and compared it to the Postal Service's actual contracted MPG. We identified about 6,400 HCRs with tractors and vans, which was the basis of our analysis of MPG for the Postal Service. HCRs generally cover highway transport of mail and equipment between plants; however, HCRs also cover "box deliveries" (such as delivery service to mailboxes under a HCR), water service, trailer leasing, and other contracts that use cars, four-wheel drive vehicles, and other transportation. These HCRs were "out-of-scope" as they did not contain a van or tractor. Further, the variation in fuel economy of medium- and heavy-duty vehicles, due to duty cycle (route of travel, such as distance and highway versus city and other conditions) on performance-related specifications, makes it difficult to set uniform fuel economy standards. In light of these varying limitations, we took contract data and separated the two major vehicle classifications (for more on this, see Appendix C) — tractors and vans — for each contract. We calculated MPG based on contract miles and fuel gallons and performed additional separations of data, based on average length of trips and the type of fuel program. To compare these results, we surveyed industry literature, white papers, academic studies, and government-sponsored studies. We obtained the figures from database information the EPA accumulated from truck fleets managed and operated by over 3,000 industry members.

[22] As stated under Clause 2.2.8 in the Terms and Conditions.
[23] A small portion of indexing is still done manually.
[24] Our announced audit objective was to assess the operational effectiveness of the Voyager Card Program, but we modified it to focus on setting contracted fuel gallons. We used MPG as a performance measurement and included indexed contracts.

Our methodology also included an analysis of "green technologies," specifically fuel-efficient equipment. To determine the economic impact of these advanced technologies, we identified the best possible MPG by reviewing the studies noted above. We identified evolving technologies in the transportation industry, reviewed the DOE-sponsored SuperTruck Program for feasibility and figures, and compared the results of DOE studies with Postal Service data.

We assessed the reliability of TCSS for comparing results to contract information and determined that the data were sufficiently reliable for the purposes of this report. We noted limitations and errors and used compensating steps to overcome them, including data corrections and exclusions and comparative testing. Our assessment included testing column totals with other data summaries to ensure the data capture was complete and reasonable. We compared data on a contract-by-contract basis in TCSS to our downloaded data and noted two significant error types with the data that required compensating steps. They were more accurate when aggregated. Although this action rendered vehicle counts unreliable, they were not within the scope of this audit and were not required to calculate MPG.

We compared these calculated values to comparable industry benchmarks using primarily EPA data and benchmarks. We calculated diesel fuel costs using nationally published average retail prices from the U.S. Energy Information Administration. We used what is considered the best industry survey of this data and compared those results to ranges built on our own survey of industry literature. We found the results of the data to be acceptable for our conclusions; however, given the limitations in Postal Service classifications within TCSS, these averages are not meant to be authoritative.

We conducted this performance audit from February 2013 through May 2014, in accordance with generally accepted government auditing standards and included such tests of internal controls, as we considered necessary under the circumstances. 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. We discussed our observations and conclusions with management on April 7, 2014, and included their comments where appropriate.

Prior Audit Coverage

The OIG issued four reports[25] addressing the Voyager Card Program. The reports covered ways to reduce fuel consumption and weak controls over the HCR fuel card including changes to the policy documents and identification of overages.

Report Title	Report Number	Final Report Date	Monetary Impact (in millions)
Voyager Card Program for Highway Contract Routes – Unidentified and Unrecovered Fuel Overpayments	NO-MA-14-001	10/30/2013	$9.9

Report Results:
The OIG estimated that about $9.9 million in fuel overpayments to HCR suppliers were not properly identified and recovered by the Postal Service for fuel year 2009-2010. Failure to collect these overpayments occurred because the Voyager Card Program reconciliation process was not reasonably conducted and documented. We recommended the Postal Service immediately reconduct the 2009-2010 fuel year Voyager Card reconciliation in accordance with the pooling and reconciliation requirements of the Fuel Management Program and the current reconciliation methodology. Further, the OIG recommended validating and documenting the results of 2009-2010 fuel overpayment determinations and collecting these overpayments. Management agreed to evaluate the 2009-2010 fuel year reconciliations for any anomalies and disagreed with the monetary impacts. Managers also stated they would initiate recoveries of funds resulting from the evaluation of the 2009-2010 fuel year reconciliations.

[25] The Government Accountability Office (GAO) also issued a report titled *U.S. Postal Service: Vulnerability to Fluctuating Fuel Prices Requires Improved Tracking and Monitoring of Consumption Information* (Report Number GAO-07-244, dated February 16, 2007). The GAO recommended improved tracking and monitoring of transportation fuel consumption data.

Report Title	Report Number	Final Report Date	Monetary Impact (in millions)
High-Risk Voyager Policy and Procedure Changes for Highway Contractor Routes	NO-MA-13-003	3/22/2013	None
Report Results: The OIG identified recent and proposed policy changes that could increase risk of fraud, waste, and abuse. We recommended the Postal Service reverse the changes made or provide justification for pooling across all contracts. Further, the OIG recommended the restatement of the previous language in the Fuel Management Program document, restricting the use of fuel for non-postal purposes, and continued notification of suspicious or fraudulent circumstances involving HCR suppliers to the OIG. Management agreed to revert to the 2011 Fuel Management Program language and reinstate the restriction on fuel use for non-postal purposes, including the notification of suspicious or fraudulent circumstances involving HCR suppliers.			
Management of the Highway Contract Route Voyager Card Program	NL-AR-11-003	6/7/2011	$108
Report Results: The Postal Service did not always ensure that HCR suppliers purchased only authorized grades of fuel or remained within the contract limitations on the number of fuel gallons purchased. We recommended that fuel purchases be more closely monitored, apply pooling, in accordance with established requirements, and perform all outstanding reconciliations. These recommendations were closed as of March 2013 with caveats that we will be revisiting these issues during current and future Voyager Card Program audit work. Management generally agreed with our findings and recommendations.			

Appendix B: Monetary Impact

We estimate the Postal Service could have avoided unnecessary fuel costs of $96.6 million for FYs 2012 and 2013. The Postal Service could avoid costs of about $190.1 million over the next 2 years by including industry MPG averages and implementing a strategy to ensure that, in the future, contractors use those fuel-efficient vehicles most in line with industry leaders (see Table 4).

Table 4. Monetary Impacts

Recommendation	Impact Category	Amount
1	Questioned Costs[26]	$96,630,944
1	Funds Put to Better Use[27]	96,630,944
3	Funds Put to Better Use	93,487,116
Total Funds Put to Better Use		$190,118,060
Total Monetary Impact		**$286,749,004**

Source: OIG analysis.

The standard OIG practice for calculating funds put to better use employs a 10-year cash flow methodology, discounted to present value by applying factors published by Postal Service Headquarters Finance. To be conservative in our cost-savings estimate, we projected savings over 2 years because of the Postal Service's financial condition and its plans to restructure operations. We applied the factors listed in Table 5.

Table 5. Rates by Type

Rates by Type	Factor
Risk Factor, Sustaining-High (A)	3.50%
Cost Of Capital (B)	3.10%
Discount Rate (A+B)	6.60%
Fuel Cost Escalation Rate	1.40%

Source: Decision Analysis Report factors, dated November 18, 2013.

[26] Unnecessary, unreasonable, or unsupported costs.
[27] Funds that could be used more efficiently by implementing recommended actions.

Monetary Impacts by Recommendation

Table 6. Recommendation 1 – MPG Averages

Duty Cycle	Tractors	Vans	Total	Per Year
Indexing Contracts – 2 Years[28]				
Highway/Long	$ 7,253,501	$ 2,266,697	$ 9,520,198	-
Urban/Short	6,630,436	21,234,432	27,864,868	-
Total	**$13,883,937**	**$23,501,129**	**$37,385,066**	**$18,692,533**
Voyager Contracts – 2 Years				
Highway/Long	$53,383,946	$ 2,544,686	$55,928,632	-
Urban/Short	19,076,328	21,580,669	40,656,997	-
Sub-Total	**$72,460,274**	**$24,125,355**	**$96,585,629**	**$48,292,814**
Offset[29]			(37,339,751)	(18,669,875)
Total			**$59,245,878**	**$29,622,939**
Total – Questioned Costs			**$96,630,944**	**$48,315,472**
Total – Funds Put to Better Use			**$96,630,944**	**$48,315,472**

Source: OIG analysis.

As reflected in Table 6, we estimate the Postal Service incurred unnecessary fuel costs for HCRs of about $48.3 million annually for FYs 2012 and 2013. Further, it can avoid costs of about $48.3 million annually if management negotiates future contracted fuel gallons based on at least industry MPG averages.

We segmented the HCR vehicle and contract information by fuel program, vehicle classification, and duty cycle by contract using TCSS data as of April 2013. We compared the contracts to industry averages[30] to calculate excess contracted gallons and calculated the value of those gallons using the U.S. Energy Information Administration's national diesel rack price.

[28] OIG policy limits each impact type to 2 years. We calculated a 2-year period of impact and applied it to both questioned costs (historic) and funds put to better use (future impact) for a total of 4 years of impact, as most HCR contracts are for a 4-year period.
[29] We estimated an offset for unused but authorized gallons that can arise under the Voyager Card Program. As such, we eliminated the uncertainty under the program as to whether gallons were purchased up to the authorized limit. Situations where unauthorized use may occur and go undetected because of excessive authorized gallons and no overage.
[30] We used industry averages from the EPA's database, which were unique in our research because the data were segmented by duty cycle and vehicle class.

Table 7. Recommendation 3 – Industry MPG Leader Best Practices

Analysis Factor Step	Total	Per Year
10 years[31] net present value[32] (A)	$1,469,177,805	-
Cost[33] (B)	657,398,400	-
Net 10-year savings (A-B)=(C)	811,779,405	-
2 years of 10 (20%) claimable[34] (C*20%)	162,355,882	-
Impact claimed[35] in prior report[36] (2 years)	68,868,766	-
Net Funds Put to Better Use	**$93,487,116**	**$46,743,558**

Source: OIG analysis.

As reflected in Table 7, we determined the Postal Service could save $46.7 million annually over the next 2 years by negotiating with HCR supplier contractors to use industry leading technologies.

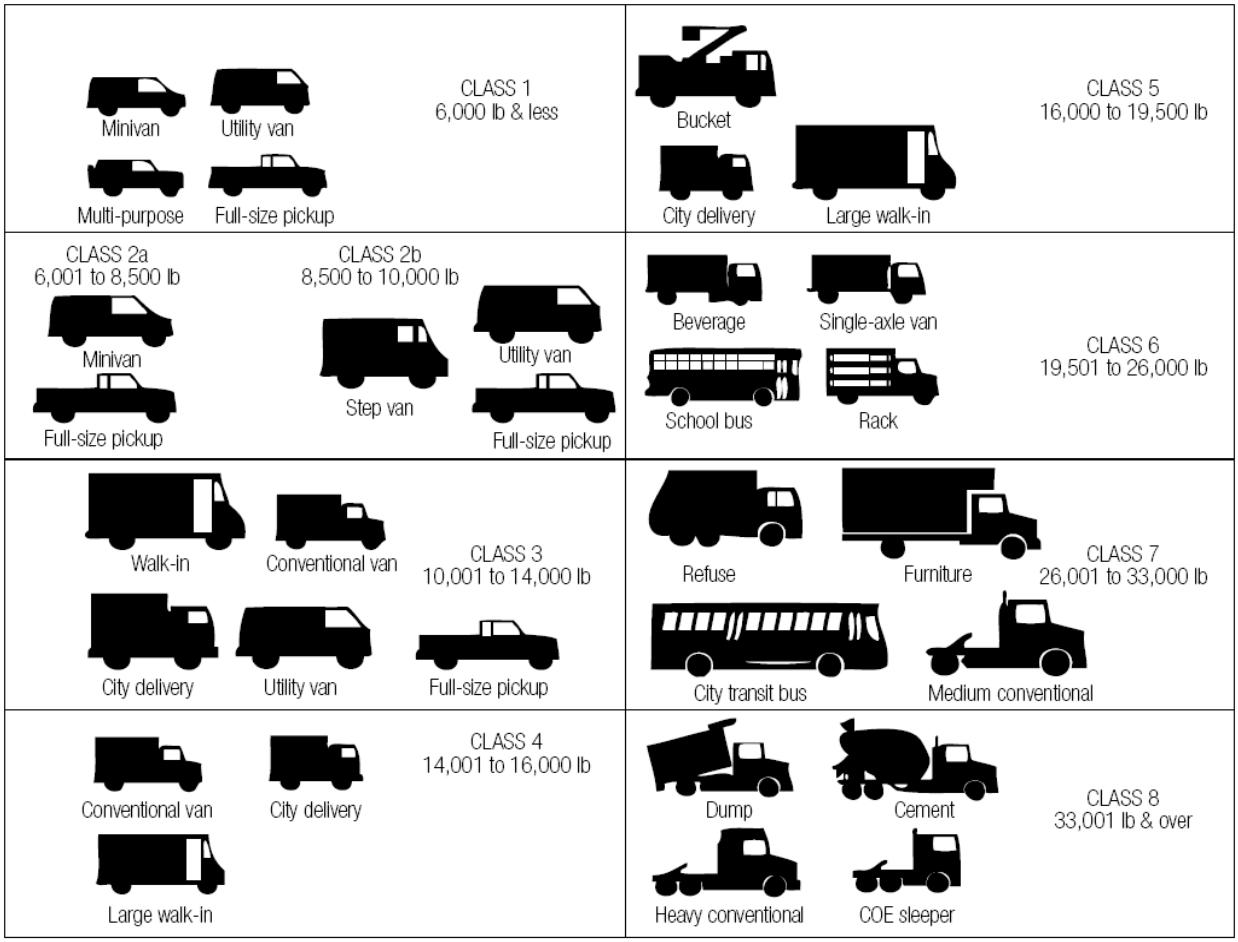
We concluded the Postal Service can achieve the best in fuel management practices and sustainability by embracing the emerging technologies as exemplified in the DOE SuperTruck Program. The most recent and authoritative expectations for 2015 release dates of the SuperTruck Program MPG[37] range from 10.17 to 10.43. We used the lower end of these projections for our analysis. We also used the industry long-haul MPG (6.7 MPG, see Table 1) as the Postal Service's base figure to ensure no overlap with recommendation 1. Calculations include both fuel programs and use contracted gallons from TCSS from April 2013.

[31] The OIG calculations assumed a 10-year life, excluded incremental operating and maintenance costs associated with the technologies, and assumed that the entire incremental cost will pass through via the vehicle cost line. HCR suppliers may use higher discount rates and shorter vehicle life estimates in their internal cost-benefit calculations when considering fuel-saving technologies. Results will vary depending on the input assumptions used and the contract negotiations.
[32] Discounting begins factoring at 2 years as data is FY 2013 and SuperTruck release is FY 2015.
[33] Cost is neither escalated nor discounted. It estimates a $56,400 incremental cost on 11,656 HCR tractors using the best available TCSS data.
[34] OIG policy dictates claiming only 2 years of monetary impact.
[35] OIG policy dictates that the same impact dollar cannot be claimed twice.
[36] A prior report, *Fuel Management Consumption Strategies for Surface Network Operations* (Report Number NL-AR-09-010, dated September 30, 2009) claimed impact for advanced aerodynamic equipment, which will be standard equipment in SuperTrucks. The Postal Service never implemented the recommendations in the report were and they were closed as "Not Implemented."
[37] DOE *SuperTruck Program Benefits Analysis*, dated December 20, 2012 (see the Market Penetration Analysis).

Appendix C: Industry Standard for Vehicle Classifications

Industry practice[38] is to group vehicles based on the DOT classification system (see Figure 2).

Figure 2. Vehicle Classification



Source: U.S. DOT – National Highway Traffic Safety Administration.

[38] Following passage of the Energy Independence and Security Act of 2007, the National Research Council appointed a committee to assess fuel economy technologies for medium- and heavy-duty vehicles. It recommended that any regulation of medium- and heavy-duty vehicle fuel consumption use normalized fuel consumption by the payload, use the calculation of gallon/ton-mile-the load-specific fuel consumption as the metric, and use an average (or typical) payload, based on national data representative of the class and duty cycle of the vehicle.

Appendix D: Fuel Consumption Best Practices

Research reveals that equipment selection may be the most controlled variable within a fleet and the most important variable driving overall cost reduction. A company's goal in selecting equipment should be to drive down fuel and maintenance costs while increasing residual value. With many new models and advanced technologies offered, fleet managers have many opportunities to choose equipment that will help them achieve their sustainability goals.

Green initiatives became an important topic of discussion in the transportation industry after fuel price volatility appeared in the early 21st Century. Many leading companies routinely assess whether to take initiatives to increase the sustainability of their vehicle fleets. It is widely acknowledged in the industry that by moving a company's fleet toward increased sustainability, a fleet manager can expect to see significant economic and environmental benefits. Sustainability in fleet management enhances economic and environmental performance.

Vehicle and green manufacturers are positioning products to provide companies with new technologies and model options that improve sustainability. Leading transportation companies have made significant progress in reaching their sustainability goals. FedEx is using advanced vehicle technologies to reduce fuel use and reports it has already achieved the 20 percent improvement in fuel efficiency that was targeted for 2020. Another example is Walmart, which is using newer tractors, improved aerodynamics, nitrogen in tires, and auxiliary power units. In 2005, Walmart set a goal of doubling the fuel efficiency of its truck fleet to 13 MPG by 2015. Walmart moved its MPG up to 7.1 from 5.9 in 2005. In a 2013 report, Walmart stated it improved another 10 percent over 2011.

Recent advances in the heavy-duty trucking industry have been driven by cooperation within the transportation industry. Many of these leading best practices can be traced back to the 21CTP, which is a cooperative research and development partnership including four federal[39] agencies, many industry[40] partners, and national laboratories.

Some industry leading best practices and strategies to improve fuel economy and reduce GHG emissions include:

- Improving aerodynamics by installing gap fairings, side skirts, and other improvements (this was a prior OIG recommendation).

- Reducing idle time by using shore power, training drivers, and installing an alternate power source.

[39] The DOE, DOT, U.S. Department of Defense, and EPA.
[40] As early as 2010 this included Allison Transmission, ArvinMeritor, British Aerospace Electronic Systems (BAE Systems), Caterpillar, Cummins Inc., Daimler Trucks, North America (which includes Freightliner), Detroit Diesel Corporation, Eaton Corporation, Honeywell International, Navistar, Mack Trucks, NovaBUS, Oshkosh Truck, Pacific Car and Foundry Company (PACCAR), and Volvo Trucks North America.

- Upgrading to low rolling resistance tires — “super single” tires — in conjunction with lower weight aluminum wheels.

- Using alternative fuel or power sources, such as hybrids, micro-turbines, fuel cells, Compressed Natural Gas (CNG)[41] or Liquefied Natural Gas, propane, and biodiesel.[42]

- Educating drivers to improve fuel economy by as much as 30 percent. Efficient driver behavior includes controlling speed (this was a prior OIG recommendation), braking, proper shifting, minimizing engine idling, and conducting pre-trip vehicle inspections (tire inspections and tire pressure maintenance were part of prior OIG recommendations). Training can be enhanced with a Global Positioning System (GPS) and telematics (using GPS was a prior OIG recommendation).

As part of the 21CTP, the EPA developed and implemented "SmartWay" in 2004. This program identifies current and emerging technologies that create fuel-efficient tractor-trailer combinations. Thousands of carriers, shippers,[43] and manufacturers are members or affiliates of this highly successful voluntary efficiency program. The California[44] EPA Air Resources Board passed regulations based on the SmartWay Program.

Since 2004, the DOE has focused much of its 21CTP effort on four SuperTruck projects to create the next generation of tractor-trailers by 2015. The SuperTruck Program is a cross-cutting, collaborative industry cost-shared research and development effort sponsored by the DOE's Vehicle Technologies Program and supported by the Advanced Combustion Engine R&D, Vehicle and Systems Simulation and Testing, and Materials Technology subprograms. The four competitively selected industry SuperTruck project teams are headed by Cummins Inc., Daimler Trucks North America LLC, Navistar Inc., and Volvo Technology of America, Inc. These industry teams make up over 90 percent of the heavy-truck market and collectively matched a government investment of $138 million, largely the result of the America Recovery and Reinvestment Act of 2009. The DOE estimates that, for 2015[45] market entry, advances in technology will yield a 51 percent reduction in fuel use for Class 8 vehicles and a 47 percent reduction for Class 6 vehicles. These estimates appear to be reasonable given the Cummins, Inc. team expects to complete its work by April 2014. Its test truck's initial road test already averaged 9.9 MPG on U.S. Route 287 using SAE International's test standards.

[41] The Postal Service is exploring the use of CNG and other alternative fuels for contract vehicles, but noted that modifications for vehicles and pumping stations would be a major obstacle.
[42] Excluding contract vehicles, the Postal Service manages one of the nation's largest vehicle and alternative fuel capable fleets, including recent testing of new diesel engines and electric vehicles.
[43] The Postal Service is not listed as actively participating.
[44] See also the Hybrid Truck Users Forum sponsored in part by CALSTART.

Appendix E: Management's Comments

UNITED STATES POSTAL SERVICE

May 20, 2014

JUDITH LEONHARDT

SUBJECT: Response to Draft Audit Report Highway Contract Routes – Miles Per Gallon Assessment (Report Number NO-AR-14-DRAFT)

Thank you for providing the Postal Service with the opportunity to review and comment on the subject draft report. Management generally agrees with the findings and recommendations associated with the Highway Contract Routes – Miles Per Gallon Assessment Audit Report.

Monetary Impact: Management disagrees with the $286,749,004 of monetary impact calculated by the Office of the Inspector General (OIG). The OIG report concludes but does not provide analytical support that use of industry miles per gallon would result in $96.6 million in cost avoidance over a two year period. There could be cost avoidance if suppliers use vehicles that achieve high miles per gallon; however, the use of such vehicles may increase a supplier's overhead and may impact the total price that we pay for our contracts.

The report also concludes if the Postal Service uses industry advanced fuel-efficient practices, it can reduce its carbon footprint, conserve non-renewable energy resources, and save an additional $46.7 million annually in fuel costs. The report does not provide specific data to support these conclusions regarding potential savings in fuel costs. The report cites general examples, such as the adoption of advanced fuel reduction technologies such as aerodynamic equipment, upgrading to low resistance tires and aluminum wheels and adoption of the next generation of advanced trucks. The Postal Service supports use of sustainable practices and technology and acknowledges the impact of such practices on the environment. However, supplier's investment in these technologies will have a cost impact and may be reflected in higher prices to the Postal Service in cost lines other than the fuel. We will continue to work with our suppliers and explore various options that enhance sustainability while exercising prudent cost control.

OIG Audit Recommendations:

We recommend the vice president, Supply Management:

Recommendation 1: Ensure that the best value determination process in Highway Contract Route negotiations includes use of industry miles per gallon averages for the proposed equipment or properly justifies and documents why lower than industry average miles per gallon amounts are used.

Management Response: The Postal Service agrees to incorporate the use of industry miles per gallon as a benchmark in the price analysis process and will use this information during the contract negotiations. Results of the miles per gallon analysis and negotiations will be reflected in the award recommendation along with other elements of the total price. A communication will be issued to contracting officials within the Surface Transportation Category Management Center providing guidance on this process for implementation starting fiscal year 2015.

Target Implementation Date: September 2014

Responsible Manager: Manager, Surface Transportation Category Management Center

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Washington DC 20260

Recommendation 2: Use vehicle classifications that are more in line with industry standards to establish more precise miles per gallon for determining authorized gallons for Highway Contract Routes, based on vehicle type and gross weight.

Management Response: Management agrees with this recommendation. The Postal Service will incorporate information in our solicitations that include industry classifications with average industry miles per gallon (similar to that contained in the OIG report at Table 3). This information will be used in contract negotiations and in the assessment of the authorized gallons for highway contract routes. This information will be included within the communication indicated within recommendation 1 above.

Target Implementation Date: September 2014

Responsible Manager: Manager, Surface Transportation Category Management Center

We recommend the vice president, Supply Management, in coordination with the chief sustainability officer:

Recommendation 3: Develop a comprehensive and cost-effective strategy, in coordination with highway contract route suppliers, for using advanced fuel efficient technology in vehicles and equipment and periodically review that strategy, as necessary, to account for continuous, evolving changes in technology.

Management Response: Management agrees with this recommendation. Supply Management and the Office of Sustainability are actively working with highway contract route suppliers to promote alternative fuel usage as well as implement fuel efficient technology equipment on both new and existing service in order to improve its sustainability and reduce costs. A comprehensive and cost-effective strategy will be developed for the use of industry evolving technology.

Target Implementation Date: January 2015

Responsible Manager: Manager, Surface Transportation Category Management Center in coordination with Manager, Energy Initiatives.

This report and management's response does not contain proprietary or sensitive business information that may be exempt from disclosure pursuant to the Freedom of Information Act. If you have any questions about this response, please contact Susan Witt at (202) 268-4833.

Susan M. Brownell
Vice President, Supply Management

Thomas G. Day
Chief Sustainability Officer

cc: Corporate Audit Response Management