



Office of Inspector General | United States Postal Service

Audit Report

Postal Vehicle Service Fuel Cost and Consumption Strategies

Report Number NL-AR-18-003 | January 3, 2018



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Highlights

Objective

Our objective was to evaluate the effectiveness of Postal Vehicle Service (PVS) fuel cost and consumption strategies.

The PVS fleet moves mail between U.S. Postal Service processing facilities, inner-city delivery offices, and local businesses and mailers. The usual travel distance is about a 50-mile radius of their Postal Service location. The PVS fleet currently consists of 2,152 cargo vans, 1,799 tractors, and 375 spotter vehicles.

What the OIG Found

We found that PVS fuel cost and consumption strategies could be improved. Specifically, the Postal Service does not have a specific PVS plan for reducing its reliance on petroleum-based fuels or integrating technologies such as telematics, which collects, records, and transmits vehicle data to improve fuel efficiency.

The Postal Service has initiatives such as Zero Based Reviews, Dynamic Route Optimization, and Enterprise Transportation Analytics in place to reduce PVS miles driven. However, the Postal Service does not have a specific plan for how it will reduce the PVS fleet's reliance on diesel fuel, reduce greenhouse gas (GHG) emissions, and increase the use of alternative fuels. The Postal Service also did not include a petroleum-based fuel target for the PVS fleet in its fiscal year (FY) 2016 *Strategic Sustainability Performance Plan*.

The Postal Service is planning to replace 2,517 PVS vehicles (2,141 cargo vans and 376 spotters) during FYs 2018 and 2019. Management considered Alternative Fuel Vehicles (AFV) for those replacements, but decided not to purchase any AFVs because the additional cost of Compressed Natural Gas (CNG) vehicles could not be recovered within the projected vehicle useful life of eight years. However, our analysis determined that the Postal Service, on average, uses PVS vehicles for about 13 years.

We identified 433 PVS vehicles which are beyond their service life at seven Postal Service sites that offer the best opportunity for a CNG purchase. The vehicles assigned to these sites consume between 297,000 to 516,000 diesel gallons annually and are within a five-mile radius of a public CNG fueling

station. By purchasing 433 CNG replacement vehicles at these locations, the Postal Service has an opportunity to annually reduce petroleum use by about 2.5 million gallons and GHG emissions by 5,253 metric tons.

We assessed the financial viability of purchasing CNG vehicles. If the Postal Service replaces the 433 PVS vehicles which are beyond their service life with CNG vehicles, we estimate it could recover its CNG equipment costs in year eight of a 15-year project period. These vehicles would also reduce diesel fuel costs by about \$21 million at the seven PVS sites based on the Energy Information Administration's diesel price projections.

Additionally, the Postal Service plans to install global positioning system (GPS) tracking devices on PVS vehicles without telematics technology. Integrating GPS and telematics technologies would provide accurate fuel consumption, speed, idling, braking and acceleration rates, and engine diagnostics for each vehicle. According to management, they did not consider procuring and installing telematics devices because of limited resources and other competing initiatives.

In FY 2017, Fleetmatics conducted a Postal Service pilot involving 100 non-PVS vehicles at the Pittsburgh Vehicle Maintenance Facility to demonstrate the benefits of telematics. The study's results were projected to the universe of 4,200 administrative vehicles and identified a cost savings opportunity of about \$6.5 million annually. Based on industry research, we concluded that installing telematics on the 4,326 PVS vehicles and changing driver behavior could reduce fuel usage by 25 percent and result in about \$7.7 million in funds put to better use for FY 2019.

Telematics can also help to improve fuel data accuracy. We identified incomplete and inaccurate PVS fuel data. Specifically, we determined there were 182 vehicles in the FY 2017 Postal Service study, *Viability of CNG-Fueled Vehicles Versus Diesel that* had no fuel consumption recorded because of manual data entry errors in capturing and recording information. In addition, one cargo van had over 892,000 gallons of fuel recorded with no associated fuel cost. Based on an average of 6.3 miles per gallon, this vehicle would have traveled over 5.6 million miles in one year.

What the OIG Recommended

We recommend management develop a plan including annual targets to reduce the PVS fleet's reliance on petroleum-based fuels and GHG emissions and increase the use of alternative fuels. Management should also reevaluate their *Viability of CNG-Fueled Vehicles Versus Diesel* PVS fuel assessment for alternative fuels by considering high-fuel usage vehicles sites within the proximity of public CNG refueling.

In addition, we recommend management evaluate the benefits of telematics in conjunction with GPS information on all PVS vehicles to provide accurate vehicle fuel consumption, speed, idling, braking and acceleration rates, and engine diagnostics.

Transmittal Letter



OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

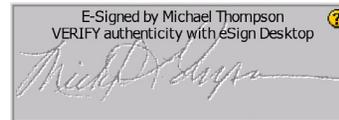
January 3, 2018

MEMORANDUM FOR: KEVIN MCADAMS
VICE PRESIDENT, DELIVERY OPERATIONS

THOMAS G. DAY
CHIEF SUSTAINABILITY OFFICER

SUSAN M. BROWNELL
VICE PRESIDENT, SUPPLY MANAGEMENT

ROBERT CINTRON
VICE PRESIDENT, NETWORK OPERATIONS



FROM: Michael L. Thompson
Deputy Assistant Inspector General
for Mission Operations

SUBJECT: Audit Report – Postal Vehicle Service Fuel
Cost and Consumption Strategies
(Report Number NL-AR-18-003)

This report presents the results of our audit of the Postal Vehicle Service Fuel Cost and Consumption Strategies (Project Number 17XG022NL000).

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Daniel Battitori, Director, Transportation, or me at 703-248-2100.

Attachment

cc: Postmaster General
Corporate Audit Response Management

Results

Introduction/Objective

This report presents the results of our self-initiated audit of Postal Vehicle Service (PVS) fuel cost and consumption strategies (Project Number 17XG022NL000). Our objective was to evaluate the effectiveness of the PVS fuel cost and consumption strategies.

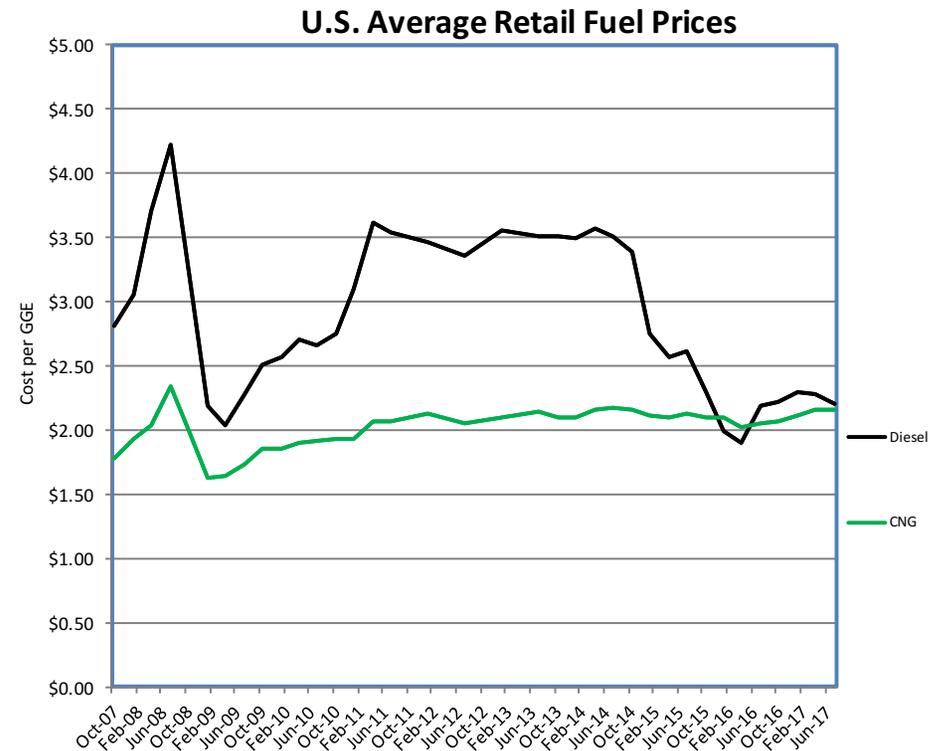
Background

The U.S. Postal Service has a PVS fleet to move mail between Postal Service processing facilities, inner-city delivery offices, and local businesses and mailers. PVS is primarily used for distances within a 50-mile radius of their Postal Service location.¹ The PVS fleet currently consists of 2,152 cargo vans², 1,799 tractors³, and 375 spotters⁴ and consumed about 19 million gallons of diesel fuel in fiscal year (FY) 2016.

Fuel can be one of the most unstable costs businesses manage because of diesel fuel price instability (see Figure 1). Domestic and global events affect fuel prices, including natural disasters, disruption of or reduction in supply, increased taxes, market performance, geopolitical events, and new technology⁵.

An increase in the price of diesel fuel significantly increases fuel costs and impacts the Postal Service's financial, operational, and strategic performance. The price of diesel fuel increased from \$1.998 per gallon in February 2016 to \$2.597 in January 2017. The EIA projects the price of diesel to increase to \$3.27 per gallon in five years (2021) and \$3.59 per gallon in 10 years (2026) based on real prices. This contrasts with the price of Compressed Natural Gas (CNG), which has remained relatively constant since 2010 and is forecasted by the EIA to maintain a more stable price than diesel.

Figure 1. Fuel Price Instability U.S. Average Retail Diesel and Compressed Natural Gas Fuel Prices October 2007 to July 2017



Source: U. S. Department of Energy, EIA.
Monthly data graphed, but labels are for every four months due to the number of data points.

1 PVS uses Postal Service vehicles and drivers as well as highway contract routes (HCR), which are contracted transportation.
2 Cargo vans are 5-, 7-, or 9-ton trucks used to transport bulk mail between Processing and Distribution Centers (P&DC), Processing and Distribution Facilities (P&DF), Airport Mail Centers (AMC), stations and branches, and associate offices. Spotters are used to move trailers within a Bulk Mail Center yard operation.
3 Tractors are large trucks consisting of an engine and cab section designed to tow a semi-trailer or trailer to transport bulk mail between P&DCs, P&DFs, AMCs, stations and branches, and associate offices.
4 Spotters are vehicles used to move trailers within a Postal Service yard operation.
5 While many industries are exploring alternative fuel vehicles, the Energy Information Administration (EIA) concluded in its long-term outlook that diesel remains the dominant fuel for trucks despite increasing use of alternative fuels.

The Energy Policy Acts of 1992⁶ and 2005⁷ require the Postal Service to reduce reliance on petroleum-based fuels, reduce greenhouse gas (GHG) emissions, and increase Alternative Fuel Vehicle (AFV) purchases.

The Postal Service also adopted Executive Orders (EO) 13693⁸ and EO 13514⁹. EO 13693 requires agencies to reduce fleet-wide, per-mile GHG emissions from agency fleet vehicles by 30 percent by 2025. EO 13514 and the Energy Independence and Security Act of 2007 (EISA)¹⁰ require agencies to reduce fleet petroleum use by 20 percent by FY 2015 compared to a FY 2005 baseline. The Postal Service developed the FY 2016 *Strategic Sustainability Performance Plan* to meet these requirements.

Finding #1: Postal Vehicle Service Plan for Alternative Fuel Vehicles

We found that the Postal Service does not have a specific plan for reducing the PVS fleet's reliance on petroleum-based fuels, reducing GHG emissions, and increasing AFV purchases. This occurred because the Postal Service did not have a petroleum-based fuel target for the PVS fleet in its FY 2016 *Strategic Sustainability Performance Plan*. As a result, the Postal Service could miss opportunities to replace parts of its PVS diesel fleet with AFVs.

Specific Postal Vehicle Service Plan

The Postal Service is planning to replace 2,517 PVS vehicles (2,141 cargo vans and 376 spotters) during FY's 2018 and 2019. Although there was no specific plan for its PVS fleet, the Postal Service conducted an analysis to consider acquiring AFVs to replace a portion of its PVS fleet. As a result of the analysis, the Postal Service decided not to purchase any AFVs because of the additional cost of CNG vehicles and because a return on investment (ROI) would be longer than the eight-year useful life of the vehicle¹¹. However, the Postal Service, on

average, uses these vehicles for about 13 years. The Postal Service analysis took an "all or nothing" approach in this study and focused only on financial viability issues and not sustainability opportunities.

Postal Vehicle Service Fuel Target

The Postal Service manages a fleet that consists of about 228,000 delivery, transportation, and administrative vehicles. The sustainability goals cover the entire Postal Service fleet and not just the PVS fleet, which is about 2 percent of the entire Postal Service fleet. Additionally, the FY 2016 *Strategic Sustainability Performance Plan* did not establish specific fuel goals or targets for any Postal Service vehicles. The goal to reduce petroleum fuel use by 20 percent by 2015 was not reached, but instead there was a 17.7 percent increase. In addition, the fleet per-mile GHG emissions goal was a 30 percent reduction by 2025, from a FY2014 baseline of 1,133.6 grams of carbon dioxide equivalent per mile. In FY 2016 the Postal Service was at 1,165 grams of carbon dioxide equivalent per mile, which is 2.8 percent increase.

Compressed Natural Gas Opportunities

Without a specific plan for PVS vehicles, we concluded the Postal Service is missing opportunities to replace PVS vehicles with AFVs. We identified seven sites located within a five-mile radius of a CNG fueling station and the PVS vehicles assigned to those sites used between 297,000 to 516,000 diesel gallons annually.¹² At these seven sites, there are 180 cargo vans, 18 spotters, and 235 tractors for a total of 433 PVS vehicles which are beyond their service life and could be replaced with AFVs. We concluded that the purchase of AFVs to replace the existing PVS vehicles at these seven sites will increase the use of CNG and reduce the Postal Service's diesel fuel gallons by over 2.5 million annually (see [Table 1](#)).

6 Public Law No. 102-486 (10/24/1992).

7 Public Law No. 109-58 (08/08/2005).

8 EO 13693, Planning for Federal Sustainability in the Next Decade. The Postal Service is an independent establishment of the Executive Branch and therefore does not have to meet the requirements set forth in EOs 13514 and 13693 issued by the White House.

9 EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance 2009.

10 Public Law No: 110-140 (12/19/2007).

11 The Postal Service conducted a study, *Viability of Compressed Natural Gas-Fueled Vehicles Versus Diesel*, and used an eight-year vehicle useful life to determine the ROI.

12 We initially identified 17 PVS sites in our analysis criteria and later reduced this to seven because of CNG fueling station vehicle access.

Table 1. FY 2016 High Usage Diesel PVS Sites With Access to CNG Station

PVS Site	Diesel Gallons	Number of Cargo Vans	Number of Spotters	Number of Tractors	Total Vehicles	CNG Stations Within 5-Mile Radius of PVS Sites
ST. LOUIS, MO P&DC	515,790	12	3	44	59	1
CHICAGO, IL P&DC	424,889	46	4	51	101	1
DENVER, CO P&DC	349,690	13	2	44	59	2
ATLANTA, GA P&DC	332,810	9	1	38	48	2
MARGARET SELLERS, CA P&DC	321,866	34	2	15	51	1
SEATTLE, WA P&DC	310,947	38	2	17	57	1
OAKLAND, CA P&DC	297,755	28	4	26	58	1
TOTAL	2,553,747	180	18	235	433	9

Source: U.S. Postal Service Office of Inspector General (OIG) analysis of Postal Service fuel data usage in FY 2016.

We assessed the financial viability of purchasing CNG vehicles. If the Postal Service replaces the 433 PVS vehicles which are beyond their service life with CNG vehicles, we estimate it could recover its CNG equipment costs in year eight of a 15-year project period. The Postal Service would also reduce diesel fuel costs by about \$21 million at the seven PVS sites¹³ based on the EIA's diesel price projections. While we normally use a 10-year cash flow to assess benefits, in this audit we used 15 years because of the service life of the existing PVS fleet¹⁴ (see [Table 2](#)).

¹³ This is represented as Net Cash Flow in Table 2.

¹⁴ While the Postal Service's estimated service life for tractors, spotters and cargo vans is eight years, the actual service life based on our analysis of the current PVS fleet is between 11 and 20 years for tractors, 13 and 25 years for cargo vans, and about 11 years for spotters.

Table 2. Cash Flow Projections¹⁵

		Capital Investment ¹⁶	Reduced Diesel Costs	Discounted Cash Flow ¹⁷			
Project Year	FY	Cash Outflow	Potential Fuel Savings ¹⁸	Net Cash Flow	Cumulative Net Cash Flow	Present Value of Cash Flow	Cumulative Present Value of Cash Inflow
0	2018 ¹⁹						
1	2019	\$4,350,000	\$1,075,024	-\$3,274,976	-\$3,274,976	-\$3,198,844	-\$3,198,844
2	2020	\$4,350,000	\$1,353,226	-\$2,996,774	-\$6,271,750	-\$2,859,063	-\$6,057,907
3	2021	\$4,290,000	\$1,564,960	-\$2,725,040	-\$8,996,790	-\$2,539,379	-\$8,597,286
4	2022		\$1,815,061	\$1,815,061	-\$7,181,729	\$1,652,079	-\$6,945,207
5	2023		\$1,935,218	\$1,935,218	-\$5,246,511	\$1,720,498	-\$5,224,709
6	2024		\$2,031,713	\$2,031,713	-\$3,214,798	\$1,764,297	-\$3,460,412
7	2025		\$2,242,410	\$2,242,410	-\$972,388	\$1,901,994	-\$1,558,417
8	2026		\$2,368,024	\$2,368,024	\$1,395,636	\$1,961,847	\$403,429
9	2027		\$2,470,434	\$2,470,434	\$3,866,071	\$1,999,112	\$2,402,542
10	2028		\$2,498,755	\$2,498,755	\$6,364,826	\$1,975,025	\$4,377,566
11	2029		\$2,602,266	\$2,602,266	\$8,967,093	\$2,009,025	\$6,386,591
12	2030		\$2,768,955	\$2,768,955	\$11,736,047	\$2,088,018	\$8,474,610
13	2031		\$2,904,009	\$2,904,009	\$14,640,057	\$2,138,954	\$10,613,564
14	2032		\$3,059,676	\$3,059,676	\$17,699,732	\$2,201,221	\$12,814,785
15	2033		\$3,065,189	\$3,065,189	\$20,764,922	\$2,153,924	\$14,968,709
TOTAL		\$12,990,000	\$33,754,922	\$20,764,922		\$14,968,709	

Source: OIG analysis of Postal Service fuel data usage in FY 2016.

¹⁵ We are not reporting monetary impact because of the eight-year payback period and we only considered CNG capital equipment cost and potential savings from diesel fuel. We did not include maintenance costs, labor costs, or CNG infrastructure costs in our cash flow analysis as these costs are minimal, and the CNG fueling stations are within five miles of the seven PVS sites. Additionally, the Department of Energy assumes CNG costs analysis model they are identical between CNG and diesel vehicles.

¹⁶ We applied the Postal Service's estimated increase associated with CNG equipment cost for cargo vans and spotters of \$30,000 per vehicle.

¹⁷ We used the 2.38 percent discounted rate that the Postal Service used in its study in our cost benefit analysis.

¹⁸ While the Postal Service applied an average CNG price of \$2.10 to its analysis, we applied a constant price of \$2.15 per GGE, which is a conservative approach based on average historical pricing trends.

¹⁹ 2018 is project year "0," which will provide the Postal Service the opportunity to assess, plan, and implement.

We also identified the environmental effects of purchasing CNG vehicles. According to the Environmental Protection Agency (EPA), the combustion of fossil fuels such as gasoline and diesel to transport people and goods is the second largest source of CO2 emissions, accounting for about 27 percent of the total U.S. GHG emissions. By converting the 433 vehicles to CNG, the Postal Service has an opportunity to reduce petroleum use by about 2.5 million gallons and GHG emissions by about 5,253 metric tons annually (see Figure 2).

Figure 2. Potential GHG Emission Reductions



Source: Clean Energy Emissions Calendar.

Recommendation #1:

Chief Sustainability Officer, in coordination with the Vice President, Network Operations, the Vice President, Delivery Operations, and Vice President, Supply Management develop a plan including annual targets to reduce the Postal Vehicle Service fleet's reliance on petroleum-based fuels, reduce greenhouse gas emissions, and increase the use of alternative fuels.

Recommendation #2:

Vice President, Delivery Operations, in coordination with the Chief Sustainability Officer, Vice President, Network Operations, and the Vice President, Supply Management reevaluate their *Viability of Compressed Natural Gas (CNG)-Fueled Vehicles Versus Diesel PVS* fuel assessment for alternative fuels by considering high fuel usage vehicles sites within proximity of public CNG refueling.

Finding #2: Telematics Technology

The Manager, Surface Transportation, plans to install global positioning system (GPS) tracking devices on new PVS vehicles without telematics technology because of limited resources and other competing initiatives. If the Postal Service employed telematics on PVS vehicles, it could reduce fuel costs by about 25 percent annually. This estimated reduction was based on information collected from industry research studies that include Fleetmatics, Frost and Sullivan, Telogis, Tom Tom, Trapeze, and the Postal Service pilot at the Pittsburgh Vehicle Maintenance Facility (VMF).

Global Positioning System Without Telematics

The Postal Service FY 2016 *Strategic Sustainability Performance Plan* established a fleet management goal and strategy to collect and use agency fleet operational data by deploying vehicle telematics. The plan also stated the Postal Service will experiment with the cost and value of telematics with current vehicle acquisitions in FY 2017, and develop targets and metrics based on financial analysis. The Manager, Surface Transportation, stated the Postal Service currently only plans to use GPS devices to collect time, date, and location data.

Telematics Not Considered

The Manager, Surface Transportation, explained that they did not consider procuring and installing telematics devices because of limited resources and other competing initiatives such as Zero-Based Reviews, Dynamic Route Optimization, and Enterprise Transportation Analytics.

Benefits of Telematics

The integration of GPS and telematics into Postal Service vehicles would provide accurate fuel consumption, speed, idling, braking and acceleration rates, and engine diagnostics for each vehicle. Telematic devices collect, record, and transmit vehicle operational data. These devices plug into the vehicle's dashboard computer and transmit the data directly from the vehicle to a web-based reporting platform. These benefits were highlighted in a Postal Service pilot and industry studies:

- In FY 2017, Fleetmatics performed a Postal Service pilot involving 100 non-PVS vehicles at the Pittsburgh VMF to demonstrate the benefits of telematics. This pilot identified a cost savings opportunity of about \$6.5 million annually for the facility. The pilot included a wide range of vehicles such as administrative, plant maintenance, VMF vehicles, and two-ton cargo vans. The pilot identified three areas where improvements could be made:
 - Vehicle utilization could be improved by 21 percent by identifying vehicles not being driven at least 75 miles a week.
 - Harsh driving could be improved by 50 percent by monitoring aggressive acceleration and braking.
 - Miles per gallon could be improved by 10 percent by reducing speeding.
- Industry research studies²⁰ also support the use of telematics and have concluded that:
 - Telematics can measure idling by assessing whether a vehicle is running but not moving which reduces fuel efficiency.

- Frequent harsh braking and accelerating can waste an extra three miles per gallon of fuel, endanger the driver and the public, result in early wear and tear of brakes, increase maintenance costs, and emit pollution.
- Excessive speeding has a negative impact on fuel consumption. Driving even slightly over the speed limit for a prolonged period of time can drastically reduce fuel efficiency.

Based on the industry studies, savings ranged from 5 percent to 77 percent by reducing idling, harsh braking and speeding (see Table 3).

Table 3. Potential FY 2019 Telematics Savings

Telematics Features	Savings Estimated by Industry	Percentages Used to Calculate Savings
Idling	10 to 68%	10%
Harsh Braking	5 to 77%	5%
Speeding	10 to 15%	10%
Total Potential Annual Savings		25%

Source: OIG analysis using industry research studies including Fleetmatics, Frost and Sullivan, Telogis, Tom Tom, Trapeze, and the Postal Service pilot at the Pittsburgh VMF performed by Fleetmatics.

The General Services Administration (GSA), in coordination with AT&T, offers telematics technology to all federal agencies including the Postal Service. [Table 4](#) identifies the different features that GSA telematics devices offer compared to GPS devices.

²⁰ Research companies include Fleetmatics, Frost and Sullivan, Telogis, Tom Tom, Trapeze, and the Postal Service Pittsburgh VMF pilot performed by Fleetmatics.

Table 4. AT&T Telematics Features

EO Reporting Requirement	GPS Tracking Only	Vehicle Diagnostics
Speed	X	X
Location Data	X	X
Idling	X	X
Utilization	X	X
Maintenance		X
Fuel consumption		X
Emissions ²¹		X

Source: GSA AT&T telematics contract number GS-30F-CA051.

We were conservative in calculating potential savings resulting from the use of telematics by using the lower ranges. Based on the FY 2016 PVS fuel cost of \$35.9 million, we estimated the potential savings could be about \$9 million. We then obtained the device and data plan pricing from the GSA telematics contract for federal fleets to determine the implementation costs²² (see Table 5).

Table 5. FY 2017 System Costs of AT&T Telematics on GSA Schedule

After Market Telematics Device/ Plan BPA Number: GS-30F-CA051	GPS Tracking Only	GPS Tracking and Vehicle Diagnostics	Cost Difference
Device (per unit)	\$100.00	\$100.00	\$0.00
Installation (per unit)	\$46.55	\$46.55	\$0.00
Data plan and web access (per month)	\$10.00	\$12.00	\$2.00
Total cost year 1	\$266.55	\$290.55	\$24.00
Total cost years 2-5	\$120.00	\$144.00	\$24.00
Onsite installation (per installer/day)	\$142.50	\$142.50	\$0.00

Source: GSA AT&T telematics contract number GS-30F-CA051.

²¹ Emissions vary by year, manufacturer, make & model.

²² GSA AT&T telematics contract number GS-30F-CA051.

After implementation costs, we concluded that installing telematics on the 4,326 PVS fleet vehicles could result in about \$7,718,392 savings for funds put to better use for FY 2019.

Other Benefits of Telematics

We also identified incomplete and inaccurate PVS fuel data. For example, one cargo van had over 892,000 gallons of fuel recorded with no associated fuel cost. Based on an average of 6.3 miles per gallon, this vehicle would have traveled over 5.6 million miles in one year. Our review of the fuel data determined there were 182 vehicles in the FY 2017 Postal Service's *Viability of CNG-Fueled Vehicles Versus Diesel* study with no fuel gallons recorded. This was due to manual data entry errors that were identified from our review of the fuel data and subsequent discussions with the Manager, Vehicle Maintenance Facility from Pittsburgh. Telematics can enhance fuel data accuracy.

Recommendation #3:

Vice President, Delivery Operations, in coordination with the Chief Sustainability Officer, Vice President, Network Operations, and Vice President, Supply Management evaluate the benefits of telematics in conjunction with Global Positioning System information on all Postal Vehicle Service vehicles.

Management's Comments

Management disagreed with the findings, recommendations, and monetary impact of \$7.7 million of funds put to better use from implementing telematics technology. Management said there were significant issues raised during the exit conference that were not adequately considered prior to releasing the final draft version of the report. They also indicated that the report focused on only 2 percent of the vehicle fleet and exaggerated the savings.

Regarding recommendation 1, management said they developed an annual Strategic Sustainability Performance Plan as outlined by Executive Order (EO) 13693. They noted they are not required to comply with the EO, but do comply because of their commitment to reduce energy consumption and reliance on foreign fuels. Management also said that establishing activities for 2 percent

of the vehicle fleet has minimal potential benefits and detracts from projects with significant opportunities to reach national sustainability goals. In addition, management added that lack of an annual target for the PVS fleet does not limit them from implementing fuel reduction strategies.

Regarding recommendation 2, management said the OIG's financial analysis only considered the cost difference of fuel and an estimated cost of the CNG option price for a new vehicle. Management noted the analysis did not include the impact of increased labor costs for driving to commercial fuel stations, the extended amount of time required to fuel vehicles, the increased frequency of fueling based on limited fuel capacity, and the risk that the sole commercial fueling station may be unavailable. In addition, they stated that they performed their own analysis during 2017, and determined CNG vehicles do not provide an acceptable cash flow during the project vehicle life. Finally, management said they already have contracts for cargo vans and spotters and a revaluation of the CNG option has no value at this time.

Regarding recommendation 3, management said they performed an extensive amount of research on different types of GPS and vehicle data transfer/communication systems, often referred to as telematics and will continue to do research in this area to find viable solutions for the Postal Service vehicle fleet. In addition, they said that our analysis significantly misrepresented the financial benefit for the PVS vehicle fleet, noting that two of the three fuel saving capabilities in this report can be obtained without incurring the monthly costs associated with telematics. Management said their vehicles are currently capable of limiting idle and vehicle speed capabilities and the only fuel reduction feature would be harsh braking. Telematics' ability to reduce harsh braking is not achievable and only attainable by changing operator driving styles. Finally, management said that telematics may provide data of this type, but capturing fuel savings is completely unrealistic. See [Appendix B](#) for management's comments in their entirety.

Evaluation of Management's Comments

During the exit conference management told the OIG there were significant issues that the OIG had not adequately considered in the draft report. These issues were the OIG not considering the Postal Service's CNG versus diesel vehicles analysis and the extreme overstatement and impossible PVS telematics savings identified. After the exit conference, we verified and told management that the CNG versus diesel vehicles analysis included in the audit report was the same one they brought up in the exit conference. We also explained that we obtained the identified telematics savings from using telematics industry standards for fleet management.

Regarding recommendation 1, while the OIG agrees that the PVS vehicle fleet is 2 percent of the entire fleet, it should have a specific target for reducing fuel consumption. Without specific vehicle group targets for over 4,300 PVS vehicles there will be no significant importance placed on each vehicle group and none of the oversight required for reducing fuel consumption. Additionally, the Postal Service has not met the EO targets for reducing their reliance on petroleum-based fuels and has increased its fuel usage by almost 3 percent in FY 2016. Finally, any progress towards reducing fuel consumption by any amount should be seen as a positive impact.

Regarding recommendation 2, we said during the exit conference that we did not perform a financial analysis and were not reporting any monetary impact for this recommendation. We disagreed with the results of the Postal Service's CNG versus diesel vehicles analysis. While their analysis identified no opportunities to replace any part of the vehicle fleet with CNG vehicles, we identified opportunities to reduce fuel consumption by using existing public CNG fueling stations close to PVS sites. Additionally, we noted there were additional CNG stations beyond those the OIG identified. We also discussed the fact that the Postal Service's CNG versus diesel vehicle analysis used inflated labor costs, mileage, and drive time to access CNG fueling stations. The Postal Service analysis was also missing specific fuel data, which made the data incomplete. Finally, management used an inconsistent cash flow period for the projected vehicle life for CNG and diesel vehicles. Management used an

Eight-year useful life for new CNG vehicles as a basis for projecting their 10-year cash flow analysis and a 13-year cash flow analysis for new diesel vehicles. Management should have been consistent with the cash flow period to ensure a balanced projected life comparison. In conclusion, the purchase of diesel replacement vehicles is scheduled to take place in FYs 2018 and 2019, which still allows the Postal Service an opportunity to reduce diesel fuel consumption and avoid the volatility of diesel fuel prices.

Regarding recommendation 3, the OIG disagrees with management's claim that they performed an extensive amount of research on the various types of GPS and telematics solutions. During the exit conference, management indicated they researched 10 years ago. Management's assertion that telematics capabilities are the same today as ten years ago is inaccurate. With advancements in technology, telematics is now considered a best practice for commercial vehicle fleets and the federal government. The EO requires all federal fleets to install telematics on new light- and medium-duty vehicles to help reduce fuel consumption.

When the Postal Service does not use telematics it is unable to identify adverse operator driving behavior. In addition, telematics provides accurate and real-time data the Postal Service does not currently have, such as eliminating the need to manually input vehicle mileage and service hours. Finally, in the FY 2016 *Strategic Sustainability Performance Plan*, management had a goal and strategy to deploy vehicle telematics for its FY 2017 vehicle acquisitions. However, management did not install telematics in the new cargo vans and spotter vehicles and offered no reason for this change in plans.

All recommendations require OIG concurrence before closure. Consequently, the OIG requests written confirmation when corrective actions are completed. Recommendations 1, 2, and 3 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.

Appendices

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Appendix A: Additional Information

Scope and Methodology

The scope of this audit was all PVS vehicles and fuel consumption data for FY 2016. To accomplish our objective, we:

- Reviewed and analyzed total PVS cost of fuel, hours of operation, miles driven, routes, PVS vehicles type, and expenses to understand PVS operations.
- Interviewed Fleet Management, Sustainability, Transportation Services, Fuel Program, PVS Operations, and Budget group personnel to determine fuel purchasing and consumption strategies (including adopting CNG equipment) and identify policies and procedures.
- Reviewed the Decision Analysis Report for the purchase of new vehicles to replace aged PVS to determine if the Postal Service included a plan for replacing those vehicles with newer fuel-efficient vehicles or alternate fuel vehicles.
- Analyzed the Postal Service's *Viability of CNG-Fueled Vehicles Versus Diesel* study to understand the scope of its assessment.
- Conducted a cost-benefit analysis on the viability of purchasing CNG trucks using an ROI payback of 15 years to determine financial viability.
- Analyzed FY 2016 PVS diesel fuel data to identify high PVS fuel usage site opportunities.

- Created a visual map to identify what CNG public stations were available within a five-mile radius of the PVS sites.
- Researched, analyzed, and determined possible fuel savings and other benefits resulting from using telematics.
- Researched the purchase and use of CNG vehicles and identified environmental benefits.
- Identified any Postal Services applications used to manage and monitor fuel for the PVS fleet.

We conducted this performance audit from June 2017 through January 2018, 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 December 1, 2017, and included their comments where appropriate.

We assessed the reliability of PVS data by extracting fuel and vehicle data from the Solutions Enterprise Asset Management and comparing it to fuel data from the Fuel Asset Management System. We validated the fuel data and compared it to data the Postal Service provided. We determined that the data were sufficiently reliable for the purposes of this report.

Prior Audit Coverage

Report Title	Objective	Report Number	Final Report Date	Monetary Impact (in millions)
<i>Fuel Consumption and Cost Risk Mitigation</i>	Determine whether the Postal Service is positioned to mitigate risks associated with increased fuel consumption and projected diesel fuel cost increases	NL-AR-17-004	4/24/2017	\$163

Appendix B: Management's Comments



December 19, 2017

LORI LAU DILLARD

SUBJECT: Postal Vehicle Service Fuel Cost and Consumption Strategies
(Report Number NL-AR-18-DRAFT)

Thank you for providing the Postal Service (USPS) with an opportunity to review and comment on this report to evaluate the effectiveness of the Postal Vehicle Service (PVS) fuel cost and consumption strategies. While this report identifies options that have some opportunity to reduce both fuel consumption and fuel cost, it fails to consider significant cost impacts in its financial analysis. It is even more troubling in that these significant issues were raised during the exit conference and were not adequately considered prior to releasing the final draft version of this report. It is our opinion this report was finalized in haste to report exaggerated savings instead of performing a proper valid financial analysis.

The USPS owns and operates a fleet of over 230,000 vehicles with a vehicle operating cost of approximately \$1.7 billion dollars annually. The USPS is fully engaged with identifying opportunities to reduce vehicle related costs both now and in the future. This report limits its focus to 2,517 PVS vehicles (2% of the fleet) and uses a novice level of knowledge and financial experience to make the following recommendations. Therefore, the USPS does not agree with the findings, the recommendations, nor the monetary impact in this report.

The USPS provides the following responses to the recommendations listed in the draft audit report.

We recommend the Chief Sustainability Officer, in coordination with the Vice President, Network Operations, the Vice President, Delivery Operations, and Vice President, Supply Management:

Recommendation 1:

Develop a plan including annual targets to reduce the Postal Vehicle Service fleet's reliance on petroleum-based fuel, reduce greenhouse gas emissions, and increase the use of alternative fuels.

Management Response to Recommendation 1:

Management disagrees with this recommendation. As indicated in this report, the USPS develops an annual Strategic Sustainability Performance Plan as outlined by Executive Order (EO) 13693. Even though the USPS is not required to comply with

475 L'ENFANT PLAZA SW
WASHINGTON DC 20260

this EO, it does comply as a demonstration of its commitment to reduce energy consumption and reliance on foreign fuels. Establishing additional activities focused on only 2% of the vehicle fleet with minimal potential benefits detracts from projects with much more significant opportunities to reach our national sustainability goals. Furthermore, the lack of an annual target for the PVS fleet in no way limits the USPS from implementing fuel reduction strategies when they become available. In short, this recommendation offers little value but to create unrealistic goals.

We recommend the Vice President, Delivery Operations, in coordination with the Chief Sustainability Officer, the Vice President, Network Operations, and the Vice President, Supply Management:

Recommendation 2:

Reevaluate their *Viability of Compressed Natural Gas (CNG)-Fueled Vehicles Versus Diesel* PVS fuel assessment for alternative fuels by considering the replacement of high fuel usage sites within proximity of public CNG refueling.

Management Response to Recommendation 2:

Management disagrees with this recommendation. The financial analysis presented in this report considers only a projected cost difference of fuel and an estimated cost of the CNG option price for a new vehicle. The analysis does not provide for cost impacts for increased labor cost for transporting vehicles to commercial fueling stations, the extended amount of time required to fuel vehicles, the increased frequency of fueling based on limited fuel capacity and, most importantly, the risk factor in case the sole commercial fueling station may become unavailable. This could potentially impact mail delivery for thousands of customers. While this financial analysis has no validity, the primary reason for disagreeing with this recommendation is the fact that the USPS has performed its own analysis during 2017 and has determined CNG vehicles to not provide an acceptable cash flow during the project vehicle life. It should also be noted that contracts for both cargo vans and spotters have been issued, and further reevaluation of the CNG option has no value at this time.

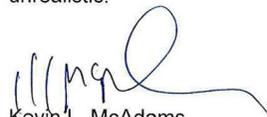
Recommendation 3:

Evaluate the benefits of telematics in conjunction with Global Positioning System information on all Postal Vehicle Service vehicles.

Management Response to Recommendation 3:

Management disagrees with this recommendation. The USPS has performed an extensive amount of research on different types of GPS and vehicle data transfer/communication systems generally referred to as telematics. While research will continue in this area to find viable solutions for the USPS fleet, this recommendation is disagreed with due to the significant misrepresentation of financial benefit for the PVS vehicle fleet. Two of the three fuel savings capabilities listed on this report can be obtained without the monthly cost associated with telematics. Vehicle computer systems on the types of vehicles listed in this report already have the capability of limiting idle and vehicle speed. The only possible fuel

reduction feature listed on this report limited to telematics, would be of harsh braking. The elimination of harsh braking is not accomplished by telematics alone and is only attainable by changing operators' driving styles. Telematics may provide data of this type but the capture rate of fuel savings is completely unrealistic.



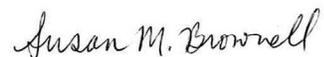
Kevin L. McAdams
Vice President
Delivery Operations



Thomas G. Day
Chief Sustainability Officer



Robert Cintron
Vice President
Network Operations



Susan M. Brownell
Vice President
Supply Management

cc: Manager, Corporate Audit & Response Management



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1735 North Lynn Street
Arlington, VA 22209-2020
(703) 248-2100