Global Positioning System Technology for Highway Contract Routes

Audit Report

September 21, 2012

OFFICE OF
INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

HIGHLIGHTS

September 21, 2012

Global Positioning System Technology for Highway Contract Routes

Report Number NL-AR-12-009

BACKGROUND:

This report presents the results of our audit on Global Positioning System (GPS) technology for highway contract routes (HCR).

The U.S. Postal Service initiated a GPS program for selected HCRs in November 2010 to have visibility of mail during transport. The program required that all 'long-haul' routes (over 50 miles) provide tracking information every 30 minutes during transport. As of April 2012, about 960 routes were included in the program. About $3.3 billion is spent on all contracted highway transportation per year.

Our objective was to assess the U.S. Postal Service's GPS strategies for contracted highway transportation routes.

WHAT THE OIG FOUND:

Opportunities exist for the Postal Service to improve and expand the use of GPS for HCRs. We found the GPS program was capturing limited data and not providing useful reports for highway transportation route management. This occurred because of inadequate planning and implementation and limited highway transportation route contractor participation requirements. Additionally, insufficient system reporting capabilities and inadequate data retention requirements were contributing factors. Consequently, the program was not being used and had not achieved its intended results even though it cost at least $1.6 million. We also determined the program could potentially include additional routes; provide maximum use of actionable reports with enhanced data analytics; use real-time alerts and enhanced geo-fencing (or assigning geographical borders); and include fuel analysis and route optimization information. There are also opportunities for integration with existing systems for enhanced transportation management.

WHAT THE OIG RECOMMENDED:

We recommended the Postal Service improve existing GPS functionality by updating and reinforcing policies and procedures; improving the monitoring and validation process to ensure supplier compliance; and reviewing and updating standard system reports to facilitate monitoring of supplier compliance and performance. We also recommended adding more HCRs and reporting capabilities to include exception reporting, establishing adequate GPS data retention policies, and exploring an end-to-end GPS platform with full-range functionality.

Link to review the entire report

September 21, 2012

MEMORANDUM FOR: DAVID E. WILLIAMS
VICE PRESIDENT, NETWORK OPERATIONS

SUSAN M. BROWNELL
VICE PRESIDENT, SUPPLY MANAGEMENT

JOSEPH CORBETT
ACTING CHIEF INFORMATION OFFICER
 AND EXECUTIVE VICE PRESIDENT

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

E-Signed by Robert Batta
VERIFY authenticity with e-Sign
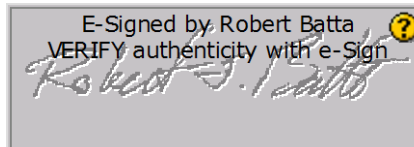
SUBJECT: Audit Report – Global Positioning System Technology for
Highway Contract Routes
(Report Number NL-AR-12-009)

This report presents the results of our audit of Global Positioning System Technology
for Highway Contract Routes (Project Number 12XG015NL000).

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

Attachments

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Introduction

This report presents the results of our audit of Global Positioning System (GPS) Technology for Highway Contract Routes (HCRs) (Project Number 12XG015NL000). Our objective was to assess the U.S. Postal Service's GPS strategies for HCRs. This self-initiated audit addresses operational risk. See Appendix A for additional information about this audit.

The Postal Service's transportation network includes nationwide transportation between cities and major facilities. The Postal Service typically uses contracted highway transportation (known as HCR transportation) with private contractors for this purpose. Individual Postal Service areas typically control HCRs and Postal Service transportation managers at the area and local levels are responsible for continually reviewing these routes to balance on-time service standards with costs. There were over 15,500 HCRs in fiscal year (FY) 2011, traveling about 1.6 billion miles at a cost of over $3.3 billion.

The Postal Service initiated a GPS program for selected HCRs in November 2010 to have visibility of mail during transport. Under this GPS mandate, selected 'long-haul' HCRs (routes traveling 50 miles or more) were required to provide certain GPS tracking information every 30 minutes while hauling mail. The required GPS tracking data was limited and included the supplier's name, route number, trip number, location, origin or destination facility, action (status), date, and time. About 960 routes are included under the GPS mandate.[1]

Conclusion

Overall, opportunities exist for the Postal Service to improve and expand the use of GPS to provide visibility under its $3.3 billion HCR program. We found the GPS program was capturing limited data primarily due to contractor non-compliance and, as a result, was not providing useful reports for HCR management.[2] This occurred because of inadequate planning and implementation, limited HCR contractor participation requirements,[3] insufficient system reporting capabilities, and inadequate data retention requirements. Consequently, the program was not being used and had not achieved its intended results of providing mail visibility during transport, even though the Postal Service spent at least $1.6 million on it.

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[1] The 963 active GPS routes as of April 24, 2012, were extracted from the HCR Tracking Module. This number fluctuates on a month-to-month basis, based on operational changes due to consolidations and adjustments, termination of routes, and peak season.

[2] The Postal Service has stated that the system reports are not useful because the level of compliance has been low; therefore, data has been very limited. They advised that they need to address the significant non-compliance issues before they can address other system issues and ensure the system is used to its fullest capabilities.

[3] The Postal Service advised that the initial intent of the GPS program was to track mail while in-transit for contracted routes traveling 50 miles or more (long-haul routes) and to look at expanding beyond those long-haul routes after the system was functioning as intended. The Postal Service advised that they see the value of potential expansion of the program to cover additional HCRs, but there is no plan to expand the program until compliance with the initial phase significantly improves.

Once compliance improves and the GPS program is operating as intended, opportunities to expand the program will exist, including additional HCRs; providing maximum use of customized and actionable reports with enhanced data analytics, proactive real-time alerts, enhanced geo-fencing[4] and actionable exception reporting; and including fuel analysis and route optimization information. There is also the opportunity to integrate the GPS with existing systems, such as Surface Visibility (SV)[5] which would allow for validation of time and mileage on routes, reduction in the need for route surveys, and enhanced scheduling and performance at Postal Service facilities.

Existing Global Positioning System Program not Functioning as Intended

The Postal Service's existing GPS capability and supporting infrastructure for HCRs is limited in data and reporting capabilities primarily due to contractor non-compliance and the program has not achieved its intended results more than 18 months after implementation.[6] Specifically, we found:

- The Postal Service did not adequately plan and implement the GPS program since it did not implement adequate controls to mitigate the potential impact of significant non-compliance by suppliers and to effectively monitor and ensure supplier compliance to meet program goals.

- The GPS program was intended to provide near real-time visibility of mail for long-haul transportation routes and; accordingly, covers less than 1,000 of the approximate 15,500 HCRs.

- Contractors are not consistently complying with GPS data reporting requirements resulting in incomplete tracking data and information.

- The GPS offers basic tracking functionality and offers standard reports and functionality could be maximized by using customized real-time, actionable data and reports in a user-friendly format.[7]

- The Postal Service's HCR data retention policies do not require maintenance of detailed data beyond 120 days for historical analyses and for future HCR planning, contract renewal, and contractual or legal challenges by contractors.

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[4] A feature in a software program that uses the GPS or radio frequency identification to define geographical boundaries. A geo-fence is a virtual barrier and geo-fence programs allow an administrator to set up triggers so that when a device crosses a geo-fence and enters (or exits) the boundaries defined by the administrator, an alert is sent. The Postal Service has stated that the current system provides a geo-fencing function that it can use to identify when a truck enters a yard or is waiting for a dock door when they have complete and reliable tracking data. An expanded function of geo-fencing is the use of alerts for entry to, or exit from, a zone along a transportation route.
[5] Scanner technology designed to capture real-time data at the handling unit, container, and trailer levels using mail processing equipment and wireless hand-held scanners within Postal Service facilities.
[6] The Postal Service pointed out that the overarching issue is compliance, based on contract and operational issues, such as service changes and detours.
[7] The Postal Service believes that the current system has the capability to provide real-time and actionable data and reports, but has been dramatically hampered by the significant supplier non-compliance issues.

<u>Limited Planning and Implementation</u>. The Postal Service did not develop an overall strategic framework and operational plan for using GPS technology.[8] When it designed and implemented the program, the primary focus was to meet the basic stated goal of locating mail in transit on long-haul HCRs. Further, the Postal Service did not develop extensive and written GPS policies and procedures, define specific roles and responsibilities for the program, provide effective training and re-training, or develop a plan to specifically address GPS program issues (including compliance) after the system was rolled out. We also found the Postal Service has not tracked supplier GPS-related costs in summary and these total costs are unknown and are not being monitored.[9] Our review of 48 contracts under the GPS program identified one-time set-up costs and recurring monthly service fees. We also found that some contracts, identified as contracts falling under the GPS mandate, have no GPS requirement language in the HCR contract, while others do not break out or identify GPS costs separately.

<u>Limited Number of HCRs in the Program</u>. Although the Postal Service has over 15,500 HCRs, the scope of the GPS program was limited, with concentration on longer haul transportation. Therefore, only the following four types of HCRs fell under the initial phase of the program, as was intended:

- Inter-Cluster Routes — Long-haul transportation from one processing and distribution center to another.

- Hub and Spoke Operation (Surface Transfer Center) Routes — Long-haul transportation to and from mail consolidation and redistribution facilities.

- Inter-Network Distribution Center (NDC) Routes — Long-haul transportation from one NDC to another NDC.

- Mail Transport Equipment Center Routes – Long-haul transportation to and from centers designated to receive, store, ship, examine, sort, pack, and condemn mail transport equipment.

The intended GPS program scope limitation resulted in the existing GPS requirements covering less than 1,000 out of more than 15,500 HCRs.

<u>Lack of Contractor Compliance</u>. Suppliers in the GPS program are required to supply information along their transportation route every 30 minutes, including date, time, and location information.[10]

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[8] The Postal Service could research and perform benchmarking of best practices and identify the potential benefits of comparing similar GPS programs, which could result in a system capable of providing more useful telemetric data and one that operates utilizing a uniform platform.
[9] The Postal Service advised that, when the program was initiated and for contracts where the GPS requirement was added mid-term of the contract, it needed to negotiate the cost (which is documented in each contract file). For renewals and new awards, the cost for GPS is included in the offered rate and is not broken out. Supply Management stated there is no requirement for them to track or monitor the HCR costs of the GPS program separately.

As of January 2012, the following contractor compliance rates were identified:[11]

- Twenty-two percent of the routes were 90 percent or above compliant.
- Thirty-nine percent of the routes were between 50 and 89 percent compliant.
- Fifteen percent of the routes were between 1 and 49 percent compliant.
- Twenty-four percent of the routes were 0 percent compliant.

In addition, we found no documented evidence of monitoring and enforcement of the 95 percent compliance threshold. Further, the Postal Service has yet to address what constitutes acceptable compliance. If a supplier provides any information on a specific route, they are considered compliant.[12]

We determined that data gaps existed because the Postal Service has not actively monitored or enforced HCR suppliers' compliance with reporting requirements or developed a process to effectively address the significant gaps.[13] Further, field personnel are not tasked with monitoring performance or compliance with the GPS mandate; therefore, a record of non-compliance is not maintained in the contract files.[14]

Limited Functionality and Reporting Capability. The Postal Service approved the following six standard reports to enhance the visibility of mail while in-transit and manage the GPS program:

- *Current Trips Report.*
- *Past Trips Report.*
- *Supplier Performance Report.*
- *Facility Performance Report.*
- *Key Performance Indicators Report.*
- *Compliance Report.*

With the exception of the *Past Trips Report* (which shows the movement and location of a vehicle and leaves a detailed trail), the information in these reports for the intended field users is redundant and is available through other Postal Service systems, such as

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[10] The Postal Service started using an addendum to HCR contract terms and conditions around April 2011 for contracts renewed or awarded after that date. The addendum states that "[c]ompliance to the requirement must reach a minimum of 95 percent success rate (accurate data transmitted to and received by the Postal Service)." No further guidance was provided to HCR suppliers or Postal Service operational or contracting personnel as to the 95 percent success rate.

[11] Management stated that the compliance rates are currently higher than they were in January 2012.

[12] The Postal Service stated that initial compliance reports measured whether there were any pings on a route. They advised they will modify compliance reports to measure 'expected' pings vs. 'actual pings.'

[14] All suppliers for whom the Postal Service contractor has email information on file receive a weekly compliance report by default. Suppliers are able to opt in and receive an additional daily compliance report by request.

[14] The Postal Service stated that, based on the significant level of supplier non-compliance, it made the decision to address contract non-compliance at the national level initially, although HCR performance issues are typically monitored at the facility level. They advised that compliance monitoring will be transitioned to the field for monitoring HCR performance measurements using the *Contract Route Irregularity Report* process.

the Transportation Information Management Evaluation System and SV. See Appendix C for more details on the 'standard reports' available in the HCR Tracking Module.

Further, the Postal Service could maximize use of the GPS once compliance issues are appropriately addressed and take advantage of enhanced exception reporting, which could include dashboard functionality and the use of proactive alerts to allow the system to serve as a surface transportation management tool. The HCR Tracking Module contains a significant amount of data. As a result, the responsibility of identifying exceptions/problems is placed on Postal Service plant supervisors, who are busy with their daily duties. These types of reports, if actively used, would allow management to focus on specific HCR supplier behavior, if needed.

In addition, reports which summarize HCR compliance over an extended period, such as 30 days,[15] are not available through the HCR Tracking Module and must be requested as an 'ad hoc' report through its contractor at an additional cost to the Postal Service. Some Postal Service officials stated that the standard reports do not present information in an actionable and summary (or dashboard) format.

Inadequate Data Retention. The Postal Service has not established adequate and documented data retention policies for the HCR Tracking Module. GPS data transmitted from suppliers is only retained in an active online status in the HCR Tracking Module for 120 days.[16] The contractor and the Postal Service advised that the data retention period was greatly influenced by the extremely large volume of data, noting that to store 120 days' worth of data would equal 30 million records. The lack of historical data impacts the ability to use the data for trending, analysis, and long-range HCR planning and route improvement. Further, short-term data retention may not address any anticipated contract or legal actions that HCR suppliers may take in response to any Postal Service contract action, including documenting an objective basis for their decision as to why they took action against a particular supplier.[17]

Overall, we determined that the limited data collection, reporting capabilities, and data retention impacted the effectiveness of the GPS program and resulted in end users (mainly field transportation personnel) not using reports and tracking data to monitor the movement of mail and improve the contracting process. Further, the Postal Service was not able to provide any information on whether the HCR Tracking Module was being used in the field by area and plant personnel. Our discussions with management at headquarters revealed that the HCR Tracking Module, as designed, does not track access to the "module" itself. There was no information at the Postal Service to gauge how the HCR Tracking Module was used, by whom and for what purpose, and how often. The only information we were able to determine from Postal Service

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[15] The Network Operations and Supply Management practice of reviewing HCR reporting compliance is to use a 30-day review period to obtain a reasonable pattern of HCR supplier reporting activity.

[16] They do have 2 years' worth of tables with status of trips stored, but no breadcrumb (geographical location trail derived from ping transmission) details of trips by suppliers. It is possible to see up to 2 years of compliance, but no ping data detail.

[17] The Postal Service is looking at its data retention of the HCR tracking data. They advised they are considering requiring retention of the first and last record for 10 years and will archive the tracking data at a data warehouse.

Headquarters was that about 245 people in the field were granted authorized access to the HCR Tracking Module.

To assess whether the system was being used, we conducted an electronic survey of the 245 field personnel with access to the HCR GPS Tracking Module.[18] Of the 245 survey questionnaires we sent to authorized field system users, we received 102 responses.[19] Our survey revealed that a majority of the 'authorized users' of the HCR Tracking Module in the field were not accessing the system or using the reports to track mail or manage HCRs.[20] Of the 102 users that responded:

- Ninety-five percent reported that they log into the HCR Tracking Module on occasion or never.

- Ninety-three percent indicated that they do not use any of the HCR Tracking Module reports.

- Ninety-three percent reported that they do not use the system to track mail, which was the primary intention of the program.

Overall, we concluded the Postal Service spent $1.6 million on implementing and maintaining the HCR GPS initiative, which did not achieve its intended benefits by not providing effective visibility into mail during long-distance transport.[21] See Appendix B for additional information about the monetary impact.

Future Global Positioning System Opportunities Should be Considered

Various opportunities exist to enhance GPS technology at the Postal Service for HCR transportation. Once the GPS program is functioning as intended, the Postal Service should consider expanding the number of HCRs in the program and developing an end-to-end,[22] single-source GPS platform and back-office accountability for enhancing HCR planning and management. The single-source GPS platform could increase route efficiency, improve service, and control contract costs by:

- Maximizing the use of customized, actionable reports augmented with available advanced data analytics with proactive real-time alerts, enhanced geo-fencing, and

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[18] A separate report of the survey results was issued to Postal Service management *Survey of System Users of the Global Positioning System for Highway Contract Routes* (Report Number NL-MA-12-001, dated August 14, 2012).
[19] In addition to the 102 responses, 12 respondents advised us via email that they have not used the HCR Tracking Module or that their responsibilities have changed. We received a 46.5 percent response rate to our survey when including these emails.
[20] The Postal Service explained that the field survey results on the use of the data and reports were impacted by low supplier compliance based on contract and operational issues.
[21] The Postal Service believes that low supplier compliance and the resulting limited data significantly impacted overall program results and the effectiveness of the program to date.
[22] An end-to-end platform would involve the Postal Service purchasing no equipment or incurring any up-front costs and instead paying a monthly fee for generating reports, providing some analysis, and distributing the reports to the Postal Service.

actionable exception reporting on speed, fuel usage, and potential unproductive use of time.

- Incorporating the GPS as part of a larger technology solution.[23]

Further, since GPS is not a core function of the Postal Service — an expanded program covering most HCRs and enhanced technological functionality — vendors could manage this system, giving the Postal Service a greater ability to focus on its core functions.

Reporting Opportunities. With enhanced reporting, the Postal Service could isolate HCR supplier activities that may require referral for further management, contract, or investigative activities. Management stated that 'raw' GPS data alone is typically insufficient for contract actions and other evidence and development are necessary. With actionable, robust customized reports from GPS, augmented with advanced data analytics, the Postal Service could easily identify 'actionable exceptions' for follow-up and resolution. These reports could include real-time alerts, enhanced geo-fencing and actionable exception reporting on speed, fuel usage, and potential unproductive use of time. These reports, coupled with outcome-oriented management, could increase the visibility and efficiency of contracted surface transportation, reduce costs, and enhance transportation management and contracting capacity.

Integrating GPS into Other Postal Service Tracking Processes. The Postal Service has an opportunity to optimize its transportation data collection capabilities with enhanced GPS capabilities. Specifically, it could expand visibility under the SV program. SV technology was designed to capture real-time data at the handling unit, container, and trailer levels using mail processing equipment and wireless handheld scanners within Postal Service facilities. The SV system does not track mail during transportation and only captures when transportation enters and leaves the facility. Enhanced GPS capabilities would expand tracking opportunities for more efficient and effective management. Those opportunities include:

- Validating mileage and estimated travel times used for contract negotiation purposes.

- Reducing the need to conduct HCR route surveys since actual route data would be available for the process.

- Enhancing scheduling and performance requirements at Postal Service facilities based on on-time performance data.

- Determining routes to explore for consolidation and route optimization.

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[23] The Postal Service advised that there have been discussions between Network Operations and Information Technology of opportunities to expand technology solutions using GPS data. One expanded solution currently being explored is using GPS to more accurately capture trailer departures and arrivals.

- ▪ Determining with greater accuracy supplier performance with regard to on-time performance and helping assist in resolving supplier disputes.

<u>Other Opportunities</u>. The Postal Service could also take advantage of other potential benefits under a broad-based GPS program covering contracted transportation. GPS contractors offer a wide range of services. Through research of GPS vendors,[24] we found they could provide hardware, installation, repairs, software, training, advanced analytics, and exception reporting; and, if desired, an operations center. Either the vendor providing the Postal Service with an end-to-end solution and all the required reports for its contracted transportation fleet could manage it entirely or it could have any degree of Postal Service involvement desired. As GPS is not a core transportation function of the Postal Service, so this technology could be substantially outsourced and require limited Postal Service involvement in its day-to-day management and maintenance. This would allow the Postal Service to concentrate on contracted transportation management and removing costs from the transportation network.

Recommendations

We recommended the vice president, Network Operations, in coordination with the vice president, Supply Management:

1. Update and reinforce policies and procedures for the highway contract route Global Positioning System program with employees and suppliers, including re-training personnel as necessary and designating necessary resources at plants to ensure they have an understanding of their roles, responsibilities, and accountability.

2. Improve the monitoring and validation process for compliance to ensure the timely entry of all contract service changes in the field, termination of contracts not meeting compliance requirements, and the use of Global Positioning System compliance as criteria for future contract awards.

We recommend the vice president, Network Operations:

3. Continue to review and update the standard reports available in the Highway Contract Route Tracking Module so compliance and supplier performance can be monitored or reviewed without a contractor preparing special 'ad hoc' reports.

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[24] As reported in our prior GPS audit, we conducted research and discussions with four large GPS vendors who indicated their ability to provide the required end-to-end functionality on a scale required by the Postal Service for its fleet. See *Global Positioning System: End-to-End Platform and Actionable, Robust Reports Needed to Achieve Goals and Potential Return on Investment* (Report Number DR-MA-11-003, dated September 30, 2011).

We recommend the vice president, Network Operations, in coordination with the acting chief information officer and executive vice president:

4. Expand the Global Positioning System (GPS) program to include additional highway contract routes where feasible and explore an end-to-end GPS platform using industry best practices that includes a full-range of functionality and reports covering applicable contracted transportation.

5. Re-evaluate data retention requirements of the Highway Contract Route Tracking Module, including the type of data retained, and for how long to include consideration of potential contract and legal challenges to actions taken resulting from non-compliance with the reporting requirements.

Management's Comments

Management agreed with our findings and recommendations. They stated they will distribute a policy letter and standard operating procedure by October 15, 2012, and will schedule training to address GPS-related responsibilities by October 31, 2012. The policy will address the timely entry of service change requests in the system; compliance monitoring via the HCR Tracking Module; and the HCR performance irregularity reporting process (PS Form 5500). Management stated that HCR Suppliers' roles, responsibilities, and accountability are addressed in the HCR contract terms (a copy is attached to management's response). Management also stated they will include an evaluation on GPS compliance to assess past performance in awarding contracts requiring GPS starting after January 1, 2013.

Management stated that compliance reports have been made available in the HCR Tracking Module to enable tracking by contract and supplier. Management also stated that they will review the adequacy of current standard reports to identify additional reports they can make available by November 15, 2012. Management further stated they would review industry GPS platform best practices and make recommendations to expand the program by January 15, 2013. Finally, management stated they would review and finalize the plan for GPS data retention requirements (including type of data, data retention timeframe, and storage/retrieval method) by November 30, 2012. See Appendix D for management's comments. The attachment to management's comments were excluded as it contained sensitive contract information.

Evaluation of Management's Comments

The U.S. Postal Service Office of Inspector General considers management's comments responsive to the recommendations in the report.

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 transportation network includes nationwide transportation between cities and major facilities. The Postal Service typically uses contracted highway transportation (known as HCR transportation) with private contractors for this purpose. Individual Postal Service areas typically control the HCRs and Postal Service transportation managers at the area and local levels are responsible for continually reviewing these routes to balance on-time service standards with costs. Highway (or surface) transportation is the largest component of the Postal Service's transportation network. There were over 15,500 HCRs in FY 2011, traveling about 1.6 billion miles at a cost of over $3.3 billion.

The headquarters vice president, Network Operations, is responsible for nationwide transportation strategy, design, development, policy, and optimization. Additionally, the headquarters vice president, Supply Management, has acquisition authority for surface transportation and is responsible for taking appropriate contract actions for contract irregularities or performance issues. Individual Postal Service areas typically manage the HCRs. Additionally, Postal Service transportation managers at the area and local levels are responsible for continually reviewing these contracted routes to balance on-time service standards with costs and ensure performance.

GPS Requirement. The Postal Service initiated a GPS requirement for selected contracted transportation routes in November 2010 in order to have visibility of mail during transport. Under this GPS mandate, selected long-haul contracted routes (defined as routes traveling 50 miles or more) were required to provide certain GPS tracking information every 30 minutes while hauling mail, including the location of the vehicle. The GPS program provides the very basic function of identifying a truck's location while hauling mail and captures the supplier's name, route number, trip number, origin or destination facility, action, date, and time.

The Postal Service implemented this GPS program by allowing HCR suppliers to use traditional GPS devices (in many cases existing GPS capabilities) or a cellular solution. The program infrastructure was designed and implemented under a contract over the past 2.5 years at a cost of over $1.6 million. In addition, the Postal Service agreed to pay HCR suppliers on an 'as needed' basis for any costs relating to implementation and maintenance of the GPS devices or cellular solutions including a monthly air time fee.

Objective, Scope, and Methodology

Our objective was to assess the Postal Service's use of GPS technology on HCRs. Specifically, we determined what GPS data and reports are presently available, how and to what extent the Postal Service uses this information, and other potential benefits leveraged from GPS technology to manage HCR contracts. To accomplish our

objective, we interviewed officials from Postal Service Network Operations and Supply Management at headquarters, as well as its contractor. We evaluated the reports available through the HCR Tracking Module. We also surveyed 245 'authorized users' in the field that had approved access to the HCR Tracking Module within Logistics Condition Reporting System (LCRS) as to their involvement with using these reports.[25] We reviewed HCR contracts, which contained contract reporting requirements and any associated costs, such as paying for cell phone or monthly telephone service to support the GPS tracking requirement. To identify any questioned costs, we examined and analyzed relevant documents, including:

- Maintenance costs associated with the GPS portion of the LCRS contract for FY 2012.

- The two contracts covering the HCR Tracking Module – implementation and related invoices and payment documentation.

We conducted this performance audit from March through September 2012 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 August 1, 2012. Management requested the opportunity to provide additional comments on our observations and conclusions, which were received on August 14, 2012, and we included their comments where appropriate.

We identified numerous data integrity issues relating to the GPS data and the HCR Tracking Module during this audit, which are in the results of review section of this report.

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[25] About 45 percent of authorized users in the field responded to our survey questions. We have completed our analysis of the survey responses and a separate management advisory report on these survey results was issued. As noted in the Prior Audit Coverage section, we address the results of the users' survey under the report titled, *Survey of System Users of the Global Positioning System for Highway Contract Routes* (Report Number NL-MA-12-001, dated August 14, 2012).

Prior Audit Coverage

Report Title	Report Number	Final Report Date	Monetary Impact	Report Results
Survey of System Users of the Global Positioning System for Highway Contract Routes	NL-MA-12-001	8/14/2012	None	This management advisory communicated the results of our electronic survey of the 245 authorized field users of the GPS HCR Tracking Module. Accordingly, we did not make formal recommendations for implementation or require corrective action.
Global Positioning System: End-to-End Platform and Actionable, Robust Reports Needed to Achieve Goals and Potential Return-on-Investment	DR-MA-11-003	9/30/2011	None	This report addressed our assessment of the Postal Service's use of GPS technology in its Delivery Operations and other technological applications to identify additional opportunities in Delivery and Transportation Operations. Management generally agreed with the findings and recommendations in the report. Management stated that it put plans for expanding the GPS program in Delivery Operations on hold, due to the Postal Service's current financial situation. Management also stated they would continue to work with their vendor to improve the GPS program, in Delivery Operations, to maximize GPS with customized reports as necessary and feasible. However, management did

Report Title	Report Number	Final Report Date	Monetary Impact	Report Results
				not agree with the potential return on investment opportunities.
Evaluation of Major Transportation Technology Initiatives	NL-AR-11-008	9/27/2011	None[26]	The report covered planning, implementation, functionality, and results of four transportation technology initiatives, including the Postal Vehicle Service Management System (PVS-MS). Management generally agreed with the findings and all recommendations. The Postal Service implemented the PVS-MS technology initiative to monitor driver and fleet performance, but lacked the necessary connectivity to function properly and was discontinued in 2008.

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[26] The report did contain $9.3 million in questioned costs, but none of it related to the PVS-MS GPS tracking technology initiative.

Appendix B: Other Impact

Recommendation	Impact Category	Amount
1, 2	Disbursements at Risk[27]	$1,678,650

Total other impacts include disbursements at risk made to the contractor under the initial contract dated June 24, 2010, for $1,316,426 and for planning and deployment of the GPS program. Additionally, it includes payments to the contractor for monthly maintenance of the HCR Tracking Module from October 2011 through May 2012 for $362,224.

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[27] Disbursements made where proper Postal Service internal controls and processes were not followed.

Appendix C: Standard Reports of the Highway Contract Route Tracking Module

The Postal Service engaged a contractor to assist in supporting the software application, which is owned and managed by the Postal Service. The contractor provides support services for the HCR Tracking System, such as making updates, writing 'ad hoc' reports as requested by the Postal Service, and providing Help Desk functions to the user community (Postal Service and HCR suppliers). The 'HCR Tracking Module' is maintained in Eagan, MN, and the data is transmitted via cell phone tracking solutions or traditional GPS devices directly to Eagan. The HCR Tracking Module is in the Postal Service's LCRS.

The six standard reports in the HCR Tracking Module are:

- *Current Trips Report*: Displays all valid location data on a map along with current estimated time of arrival and relevant schedule information.

- *Past Trips Report*: Displays a breadcrumb trail of all valid pings submitted by an HCR supplier for a particular route.

- *Supplier Performance Report*: Displays the percentage of arrivals by supplier that are 'Early,' 'On Time,' 'Late,' and 'Critically Late.'

- *Facility Performance*: Displays the percentage of arrivals and departures by facility that are 'Early,' 'On Time,' 'Late,' and 'Critically Late.'

- *Nationwide Key Performance Indicator*: Displays the top five records in lane, facility, area, and supplier performance by categories by total number of late arrivals.

- *Compliance Report:* Lists trip segments the Postal Service did not receive data for, or for which the supplier has not submitted new data in over 1 hour.

Appendix D: Management's Comments

DAVID E. WILLIAMS
VICE PRESIDENT, NETWORK OPERATIONS

**UNITED STATES
POSTAL SERVICE**

September 14, 2012

LUCINE M. WILLIS
DIRECTOR, AUDIT OPERATIONS

SUBJECT: Draft Audit Report – Global Positioning System Technology for Highway Contract
Routes (Report Number 12XG015NL0000-Draft)

Thank you for the opportunity to respond to the recommendations contained in the Discussion
Draft Audit Report – Global Positioning System Technology for Highway Contract Routes – Draft
Report Number 12XG015NL0000). Management agrees with the recommendations and will
address each separately below.

Recommendation 1:
Update and reinforce policies and procedures for the highway contract route Global Positioning
System program with employees and suppliers; including re-training personnel as necessary and
designating necessary resources at plants to ensure they have an understanding of their roles,
responsibilities and accountability.

Management Response/Action Plan:
Policy letter and SOP will be distributed to area Managers, Operations Support by Oct. 15, 2012.
Training will be scheduled for area and field employees with GPS related responsibilities by
October 31, 2012. Supplier roles, responsibilities, and accountability are addressed in the HCR
contract terms (copy attached). All contracts in scope will be reviewed for inclusion of GPS
contract language by December 31, 2012.

Responsible Official:
Jennifer Stevenson, Manager, Surface Transportation Operations
Royale Ledbetter, Manager, Surface Transportation CMC

Recommendation 2:
Improve the monitoring and validation process for compliance to ensure the timely entry of all
contract service changes in the field, termination of contracts not meeting compliance
requirements, and the use of Global Positioning System compliance as criteria for future contract
awards.

Management Response/Action Plan:
Policy letter, SOP and training will address timely entry of service change requests in SCR
system; compliance monitoring via HCR Tracking Module in Logistics Contract Reporting System
(LCRS); and irregularity reporting via PS form 5500 process; completion dates included in
recommendation 1 response. For contracts awarded after January 1, 2013, with a contract
service type within the GPS scope, one of the evaluation factors under Past Performance will be
GPS compliance.

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Responsible Official:
Jennifer Stevenson, Manager, Surface Transportation Operations
Royale Ledbetter, Manager, Surface Transportation CMC

Recommendation 3:
Continue to review and update the standard reports available in the Highway Contract Route Tracking Module so compliance and supplier performance can be monitored or reviewed without a contractor preparing special ad hoc reports.

Management Response/Action Plan:
Compliance report has been made available in the HCR Tracking Module in the Logistics Contract Reporting System (LCRS) enabling tracking by contract and supplier. Standard reports will be reviewed to identify additional reports that can be made available in LCRS by November, 15, 2012.

Responsible Official:
Jennifer Stevenson, Manager, Surface Transportation Operations

Recommendation 4:
Expand the Global Positioning System (GPS) program to include additional highway contract routes where feasible and explore an end-to-end GPS platform using industry best practices that includes a full-range of functionality and reports covering applicable contracted transportation.

Management Response/Action Plan:
Complete review of industry GPS platform best practices and make recommendations to expand USPS GPS program by January 15, 2013.

Responsible Official:
Jennifer Stevenson, Manager, Surface Transportation Operations
Bob Moran, Manager, IT Portfolio Development

Recommendation 5:
Re-evaluate data retention requirements of the Highway Contract Route Tracking Module; including the type of data retained and for how long to include consideration of potential contract and legal challenges to actions taken resulting from no-compliance with the reporting requirements.

Management Response/Action Plan:
Complete review and finalize plan for GPS data retention requirements to include type of data, data retention timeframe and storage/retrieval method by November 30, 2012.

Responsible Official:
Jennifer Stevenson, Manager, Surface Transportation Operations
Bob Moran, Manager, IT Portfolio Development

This report and management's response do not contain information that may be exempt from disclosure under the Freedom of Information Act (FOIA). All addressees on this report are in agreement with the response.

David E. Williams

Attachment

cc: Ms. Brownell
Mr. Corbett
Mr. Cochrane
Ms. Mallonee
Ms. Stevenson
Mr. Young