



Nonmachinable Outside Parcels Pilot Program

Management Advisory Report

Report Number MS-MA-15-003

November 5, 2014

Un-Scanned NMOs To: **NMO Pilot Scan** Station - West Dock



OFFICE OF INSPECTOR GENERAL UNITED STATES POSTAL SERVICE

Highlights

Nonmachinable Outside (NMO) parcels are packages that, because of their size, weight, or other characteristics, cannot be processed through automation and must be handled through a more labor-intensive and costly manual process.

Background

Nonmachinable Outside (NMO) parcels are packages that, because of their size, weight, or other characteristics, cannot be processed through automation and must be handled through a more labor-intensive and costly manual process. The term "outside" is used for these parcels because they cannot be placed in sacks or other mailing containers for automated processing.

As part of efforts to optimize the network, in December 2013, the U.S. Postal Service started a 6-month pilot program with an outside contractor in two Network Distribution Center service areas. The objective was to develop, test, and analyze alternatives to NMO processing and leverage the contractor's automated network to increase efficiencies and improve service. The Postal Service projected it would save fiscal year 2014, Quarter 4, by contracting out NMO processing during the pilot program. The contract price was \$8.5 million, with projected volume of parcels.

The Postal Service planned to perform cost-benefit analyses when the pilot was finished to assess the results and determine whether to implement it nationwide.

Our objective was to evaluate the costs associated with the pilot program to process NMOs through the use of an outside

contractor. In the future, we plan to evaluate productivity and efficiencies associated with NMO processing.

What The OIG Found

The Postal Service did not consider about **Constitution** in operational expenses when developing the cost estimates for the NMO pilot program. This figure represents about percent of the \$8.5 million contract price. Specifically, the Postal Service did not account for **Constitution** in internal labor costs for additional labeling and manual loading or **Constitution** in additional internal transportation costs to transport NMOs to the contractor. Postal officials told us they were not aware of these potential costs when developing the pilot.

We also noted the Postal Service did not complete cost-benefit analyses when the pilot was done. While we recognize the value and benefits of pilot programs, more thorough expense estimates and timely cost-benefit analyses are necessary to fully and accurately evaluate this pilot program. The costs were double the anticipated savings of

What The OIG Recommended

We recommended the vice president, Network Operations, include all costs, internal and external, when evaluating the results of the NMO pilot and before proceeding with a nationwide program.

Transmittal Letter

MEMORANDUM FOR:	DAVID E. WILLIAMS, JR. VICE PRESIDENT, NETWORK OPERATIONS
	E-Signed by Janet Sorensen ERIFY authenticity with eSign Deskto
FROM:	Janet M. Sorensen Deputy Assistant Inspector General for Revenue and Resources
SUBJECT:	Management Advisory Report – Nonmachinable Outside Parcels Pilot Program (Report Number MS-MA-15-003)
This report presents the r Program (Project Numbe	results of our review of the Nonmachinable Outside Parcels P r 14RG020MS000).
	eration and courtesies provided by your staff. If you have any onal information, please contact Joseph E.Wolski, director, Re or me at 703-248-2100.
Attachment	
cc: Corporate Audit and	Response Management

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Findings

Introduction

This report presents the results of our self-initiated review of the Nonmachinable Outside (NMO) Parcels Pilot Program (Project Number 14RG020MS000). Our objective was to evaluate costs associated with the pilot program to process NMOs using an outside contractor. In the future, we plan to evaluate productivity and efficiencies associated with NMO processing. See Appendix A for additional information about this report.

NMO parcels are packages that, because of their size, weight, or other characteristics, cannot be processed on machines and must be handled manually.¹ This is more labor-intensive and costly than automated processing. The parcels are called "outside" because they cannot be placed in sacks or other mailing containers for automated mail processing.

NMO optimization is part of the U.S. Postal Service's Delivering Results, Innovation, Value and Efficiency Initiative 1: Optimize Network Operations. One of the initiative's goals is to reduce ground transportation costs by \$1 billion between fiscal years (FY) 2012 and 2017. The Postal Service projected savings for NMO optimization to be percent of the total network operations optimization goal.

As part of the NMO optimization plan, in December 2013, the Postal Service started a 6-month pilot program² with a single contractor in two Network Distribution Center (NDC) service areas.³ The objective was to develop, test, and analyze alternatives to process NMOs and leverage the contractor's automated network to increase efficiencies and improve service. A Postal Service facility would transport NMO parcels to a nearby contractor facility, where they would be sorted and transported to Postal Service destination delivery units (DDU) or processing facilities. In addition, at the completion of the pilot the Postal Service planned to evaluate the results and to assess whether to implement the program nationally.

If the pilot program proves profitable, the Postal Service envisions receiving NMO parcels at its retail counters, sending them to the contractor for processing, and retrieving them for last mile delivery at the DDU or destinating processing facility. The Postal Service plans to competitively bid the contract work if it elects to implement the NMO program permanently.

Conclusion

The Postal Service did not consider about in operational expenses when developing the cost estimates for the NMO pilot program. This figure represents about percent of the \$8.5 million contract price. Specifically, the Postal Service did not account for internal labor costs of for additional labeling and manual loading or internal transportation costs of transport NMOs to the contractor.

We also noted the Postal Service did not conduct complete cost-benefit analyses when the pilot was done. While we recognize the value and benefits of pilot programs, more thorough expense estimates and timely cost-benefit analyses are necessary to fully and accurately evaluate any pilot program. The **second** cost was double the anticipated savings of **second**.

to

¹ Outside parcels include parcels with any of the following: length more than 27 inches, width more than 17 inches, height more than 17 inches, weight more than 25 pounds, Parcel Select and Parcel Return Service weighing more than 35 pounds, rolls and tubes over 26 inches, metal boxes, and tires.

² The NMO pilot program was scheduled from December 2013 through June 2014.

³ The Postal Service awarded the pilot contract to UPS and established pilot sites in Des Moines, IA, and Chicago, IL, NDC service areas.

Additional Nonmachinable Outside Costs

The Postal Service did not account for additional pilot program costs for labeling, manually loading, and transporting NMO parcels that internal NMO operations would not normally incur. For example, the Postal Service scanned and applied an additional label (a process known as dual agency labeling) to each NMO parcel to be inducted into the contractor's network.

The Postal Service did not account for additional pilot program costs for labeling, manually loading, and transporting NMO parcels that internal NMO operations would not normally incur.

The Postal Service did not conduct comprehensive cost-benefit analyses of the pilot program. Specifically, the Postal Service did not know whether the pilot program, which used a contractor to process NMO parcels externally, was more cost effective than internal processing. The Postal Service also manually loaded NMO parcels onto a trailer because postal mail transportation equipment (MTE) was incompatible with the contractor's system. Further, the Postal Service transported NMO parcels to UPS facilities, which are outside of the postal network, for processing. The Postal Service transported NMO parcels an additional 41,000 miles to eight different contractor facilities in Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin. As a result, the Postal Service incurred additional labor and transportation costs of about **Contractor**.

All expenses should be included when calculating the cost of a pilot program⁴ but the Postal Service did not account for about in additional labor and transportation costs and was not aware of these added costs when developing the pilot program. We estimated it spent an additional **service** for labor costs and **service** in transportation costs⁶ to prepare NMO parcels during the pilot program. The Postal Service must identify all cost factors related to the program in order to accurately evaluate its benefits.

Cost-Benefit Analyses

The Postal Service did not conduct comprehensive cost-benefit analyses of the pilot program. Specifically, the Postal Service did not know whether the pilot program, which used a contractor to process NMO parcels externally, was more cost effective than internal processing.

For example, the Postal Service estimated it would tender MMO parcels to the contractor but only tendered pieces during the pilot. The difference occurred because more machinable parcels than expected were mixed with the NMO parcels. These machinable parcels were separated before the NMOs were tendered to the contractor, offering another example of additional labor costs incurred to execute the pilot. The cost of the contract was also lower than expected because the Postal Service paid the contractor based on cost per piece and the contract established a maximum cost.⁷ In addition, the Postal Service is in the process of hiring a contractor to conduct a comparative analysis of the pilot. This could add an expense that was not part of the estimated cost of the pilot.

The Postal Service planned to complete cost-benefit analyses of the entire NMO program, including the pilot; however, when we finished our review, it had not conducted these analyses or provided specific dates for doing so. Although a pilot program can be beneficial, more complete cost estimates and timely cost-benefit analyses are necessary to fully and accurately evaluate program results.⁸

- 7 The Postal Service agreed to a maximum contract cost of \$8,501,131. The Postal Service paid about \$7.3 million to process NMOs.
- 8 Supplying Principles and Practices, page 39, July 2014.

⁴ Supply Management Supply Chain Management Impact Administrative Instructions, Version 1, page 17, January 2014.

⁵ We calculated labor costs using non-supervisor workhours, which were charged to the pilot program, and multiplied that by the national average labor rates (Salary and Fringe) for Postal Service 04 Mailhandlers and Mailhandler Assistants.

⁶ We calculated transportation costs based on mileage used to transport NMO parcels to the contractor's facilities and multiplied that by the average rate for highway contract routes.

Recommendation

We recommend the vice president, Network Operations, include all costs, internal and external, when evaluating the results of the Nonmachinable Outside pilot and before proceeding with a nationwide program. We recommend the vice president, Network Operations:

1. Include all costs, internal and external, when evaluating the results of the Nonmachinable Outside pilot and before proceeding with a nationwide program.

Management's Comments

Management disagreed with the findings and agreed with the recommendation. Management stated that the report reflects a fundamental misunderstanding between the relationship of the pilot program and the preliminary rough order of magnitude cost estimate generated during concept development and before negotiations with the service provider. Management disagreed with the contract price in the report, stating that the report "erroneously" reflects "the contract price was a figure other than the \$8.5 million."

Management agreed that it would be fair to conclude they were not aware of the exact cost of additional labor and transportation efforts associated with the pilot; however, management noted there was no basis to conclude they were not aware that the Postal Service would incur such costs. Further, management emphasized that various processes were unique to the pilot and they don't expect to incur their associated costs in the future when Postal Service operations are more seamlessly integrated with a third-party provider.

Management also disagreed with our conclusion that the Postal Service did not conduct a comprehensive cost-benefit analysis of the pilot program, stating that, prior to implementing the pilot test, they developed an "unrefined rough order of magnitude" to estimate costs. Further, management stated that they had always planned to conduct a post-pilot analysis and that developing a concept deemed operationally feasible would provide a foundation for follow-up cost-benefit analysis that would clarify whether they should implement the concept more broadly or system-wide. Management stated that the comparative comprehensive analysis is already underway and will determine what the cost-benefit results of the pilot could be on a nationwide scale.

Management stated that the report's references to the pilot being conducted at "two processing sites" would be more accurately described as started at "two Network Distribution Center service areas." Management also stated that after the pilot test ended, they continued to track manual parcel operations using methods identified during the pilot. As a result, management maintains that they reduced manual workhours by 16,747 in FY 2014, Q4, and realized the projected savings in their network operations optimization goal.

Lastly, management stated that a portion of Figure 5 failed to include a potential path for the tier processing used for NMO parcels in the NDC network. To correct the flow, an additional "possible path" should be added from the Origin NDC to an additional higher tier Origin NDC prior to flowing to the destination NDC. This flow would be applicable for packages flowing between regions of the country. Management explained that this correction would demonstrate that they could eliminate multiple handling and segments of transportation with the tender of NMO parcels to a contractor.

See Appendix B for management's comments, in their entirety.

Evaluation of Management's Comments

The U.S. Postal Service Office of Inspector General (OIG) considers management's comments responsive to the recommendation and corrective actions should resolve the issues identified in the report. Regarding the characterization of the contract price or rough order magnitude, the contract documentation provided during the review and discussed at the exit conference indicated the estimated cost for the pilot would not exceed \$11.3 million. Further, in discussions with management, it agreed the volume was significantly lower than the estimated volume of pieces, and the estimated volume was a crucial component of the \$11.3 million cost estimate for the pilot contract. On October 27, 2014, we received the "Order/Solicitation/Offer/Award" from the Postal Service that identified a "total award amount" as \$8,501,131. We have updated the contract price and volume figures in this report accordingly.

Regarding additional costs, we agree that the statement of work (SOW) mentions labor and transportation efforts as part of processing NMOs, but it does not include any costs associated with these activities. We maintain these costs should have been considered in the cost estimates for the contract of the pilot program to capture its total costs. Total costs are critical to accurately evaluate the benefits of the pilot.

Regarding the disagreement with our conclusion that the Postal Service did not conduct a comprehensive cost-benefit analysis of the pilot program, management reiterated during our exit conference that they did not conduct a cost-benefit analysis nor did they have a specific date for doing so. A timely cost-benefit analysis would provide information to assess the effectiveness of outsourcing NMO processing and provide input for further decision making. In management's response to this report, they stated an analysis would be conducted no later than May 2015 to determine what the cost-benefit would be on a nationwide scale. Conducting a cost-benefit analysis is consistent with our recommendation.

Regarding the accuracy of describing two processing sites as two NDC service areas, although our reference was based directly on information in the Postal Service's contract and service talks, we agree that management's description is more precise and revised the report language accordingly.

Regarding the reduction in manual workhours, which realized the projected savings in the network operations optimization goal, we did not specifically evaluate manual workhours. As stated in our report, we plan to evaluate productivity and efficiencies associated with NMO processing in the future, which should include the evaluation of manual workhours.

Regarding adding an additional "possible path" to Figure 5 in the report, we developed the flowchart in Figure 5 based on observations, interviews, and PowerPoint presentations, including a presentation by management. We appreciate the suggestion for adding a "possible path" to the flowchart and have updated the figure accordingly.

Appendices

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Appendix A: Additional Information

Background

NMO parcels are packages that, because of their size, weight, or other characteristics, cannot be processed on machines and must be handled manually. This is more labor-intensive and costly than automated processing. The parcel is called "outside" because it cannot be placed in a sack or other mailing container for automated processing.

As part of network optimization plans, in December 2013, the Postal Service started a 6-month pilot with UPS in two NDC service areas. The objective was to develop, test, and analyze alternatives to NMO processing and leverage the contractor's automated network to increase efficiencies and improve service. The Postal Service projected it would save in FY 2014, Quarter 4, by contracting out NMO processing during the pilot program. The contract price was \$8.5 million, with projected volume of parcels. During the pilot program, the contractor provided middle mile processing for the identified NMO parcels. The Postal Service continued to provide first mile collection and acceptance and last mile delivery through its delivery units.

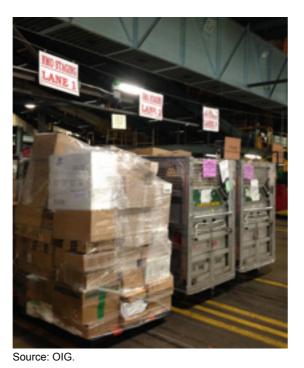
Nonmachinable Outside Process Under the Pilot Program

<u>NMO Arrival and Separation:</u>⁹ NMO parcels arrived at the Postal Service pilot facilities mixed with other parcels that were not part of the pilot test. Postal Service employees separated pilot NMO parcels prior to and during Automated Package Processing System¹⁰ induction, placed them in MTE, and then transported them to the stage area for the NMO labeling process.

At the Chicago NDC, a Postal Service employee placed NMO parcels on a template to ensure machinable parcels were not sent to the contractor. Figure 1 shows NMO parcels separated specifically for the pilot program and Figure 2 shows the NMO template used to determine whether a parcel was nonmachinable.

Figure 1. NMO Parcels Separated for the Pilot Program

Figure 2. NMO Template for Measuring Parcels





Source: OIG.

- Observation at the Omaha, NE, Processing and Distribution Center (P&DC), May 6-8, 2014.
- 10 A Postal Service machine designed to automatically sort packages and rolls to a 3-digit or 5-digit ZIP Code.

<u>Labeling Process</u>: The labeling area consisted of a computer, a label printer, a regular printer, and a hand-held scanner. The contractor provided all equipment, except for the regular printer. A Postal Service employee scanned the postal barcode, which was affixed to the NMO, with the contractor's scanner. The label printer then generated a dual agency label with a

which applied to the NMO. The contractor was paid according to the second state of the

Figure 3 shows dual agency labels and Figure 4 shows labeling equipments.

Figure 3. Dual Agency Label

Figure 4. Labeling Equipment





Source: OIG.

<u>Truck Loading and Transportation</u>: A Postal Service employee performed the en route scan on each NMO using a Postal Service hand-held scanner. Parcels were then removed from MTE and bedloaded onto the trailer, rather than being sent to the contractor. Finally, Postal Service transported the NMO parcels to the contractor's processing facility.

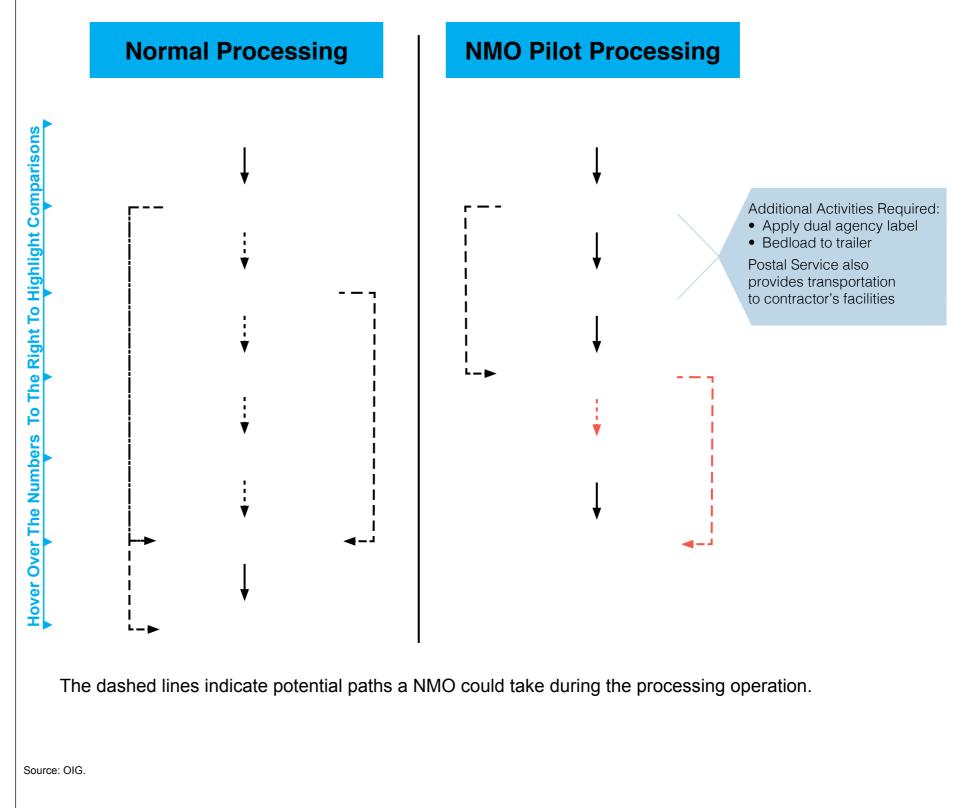
After processing the NMO parcels, the contractor was responsible for transporting them back to the Postal Service for last mile delivery. The parcels were transported directly to a DDU. If, however, the delivery ZIP Code of the DDU was not serviced by the contractor, the parcels were transported to the destinating P&DC, where no appointment was required for acceptance. The process for accepting NMO parcels at the P&DC included verification by a Postal Service employee and tendering of an electronic signature confirming the shipment's contents.

Parcels transported to a P&DC were directed to the incoming manual NMO distribution area. Manual distribution employees scanned each NMO for en route visibility and processed and dispatched the parcels to the appropriate DDU for final delivery.

Figure 5 shows the NMO mail flow under normal processing compared to NMO processing under the pilot program. The pilot required additional activities to prepare the NMO parcels for the contractor.

¹¹ The contractor was paid (per piece) based on and each NMO Pilot Program Statement of Work, Attachment L.





Objective, Scope, and Methodology

Our objective was to evaluate costs associated with the pilot program to process NMOs through the use of an outside contractor. In the future, we plan to evaluate productivity and efficiencies associated with NMO processing.

To accomplish our objective, we:

- Reviewed and analyzed the noncompetitive purchase requests for the pilot program and its related SOW.
- Interviewed Postal Service officials in the Network Operations office, the Central Illinois District, and personnel at the Omaha, NE, P&DC.
- Conducted observations at the Omaha, NE, P&DC and the Chicago NDC.
- Toured the contractor's Chicago Area Consolidation Hub facility.
- Analyzed the methodology used to determine the cost of the NMO contract.
- Conducted an analysis to determine the additional internal labor and transportation costs for preparing NMO parcels for the contractor.
- Verified invoices and reconciliation documentation to determine the total cost paid to the contractor under the NMO pilot program.

Our scope included the NMO pilot program, which covered the period from December 10, 2013, through July 2, 2014.

We conducted this review from April through November 2014, in accordance with the Council of the Inspectors General on Integrity and Efficiency, *Quality Standards for Inspection and Evaluation*. We discussed our observations and conclusions with management on September 23, 2014, and included their comments where appropriate.

Prior Audit Coverage

The OIG issued *Readiness for Package Growth – Processing Capacity* (Report Number NO-AR-14-002, dated January 21, 2014), which concluded that the Postal Service has sufficient machine capacity to process all non-peak period package volume. It has the machine capacity to process about 29 million packages daily, which is more than sufficient to process the 24 million packages it receives daily. However, to meet anticipated package growth, the Postal Service must improve machine throughput and increase run times. Management agreed with all the recommendations in the report.

Appendix B: Management's Comments



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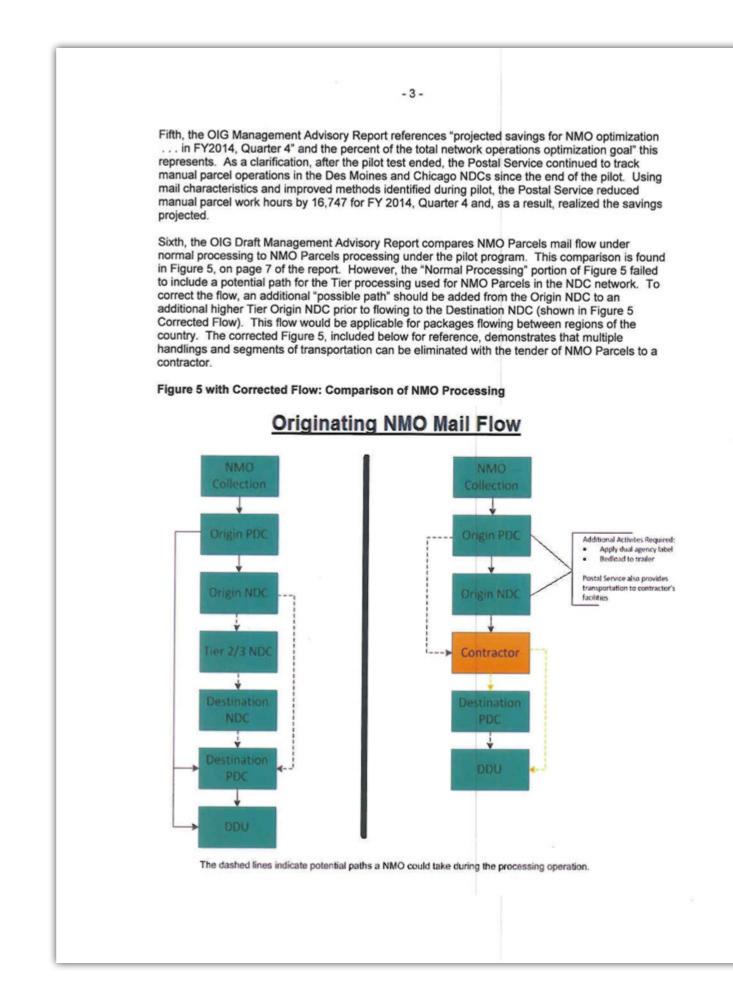
Second, at various points, the OIG Management Advisory Report criticizes Postal Service management for not considering additional labor and transportation costs incurred during this pilot study. For example, on page 2, the OIG report claims that the Postal Service was not aware of the additional labor and transportation costs when developing the pilot program. It would be fair to conclude that management was not "aware" of the *exact magnitude* of these additional labor and transportation costs when conceptualizing the pilot. However, there is no basis for the report to reflect that management was unaware that such costs *would be incurred*. The Postal Service did account for additional costs associated with labeling, manually loading, and transporting NMO Parcels. For example:

- Evidence of management's acknowledgement of internal labor and transportation costs is found in the Statement of Work signed between the Postal Service and the supplier. The Statement of Work included instructions detailing the application of the dual agency labels necessary for tracking and accounting during the pilot program. Additionally, the Statement of Work included guidance for the loading and transportation of the tendered packages to the supplier. Such tasks would necessarily result in additional cost.
- The Postal Service also created two unique Headquarters Operation Numbers to track labor costs associated with the labeling and tender of the packages included in the pilot program. These operation numbers were used to record the craft and supervisory work hours associated with the scanning, labeling, and loading of the packages involved in the pilot and were provided to the OIG as part of this audit.

Additionally, it bears emphasizing that various processes that were unique to the pilot, and necessary to integrate pilot and regular mail processing functions, would not exist in a future mail processing environment. Accordingly, if nationwide implementation occurs, certain pilot processes that generate additional costs are not expected to be a part of a future mail processing network in which postal operations and those of third-party transportation and sortation provider are more seamlessly integrated.

Third, the OIG Management Advisory Report also criticizes the Postal Service for not conducting a comprehensive cost-benefit analysis of the pilot program. However, operational testing serves the purpose of "live" testing and refinement of a concept for the purpose of assessing the feasibility of a mail processing concept. The first questions to be answered typically relate to whether a concept can be executed operationally and how best to execute it. Development of a concept deemed operationally feasible provides a foundation for follow-up cost-benefit analysis that would clarify whether postal management should seek to implement the concept on a broader or systemwide basis. Furthermore, prior to implementing the NMO pilot test, Postal Service management developed an unrefined Rough Order of Magnitude estimate of the cost of internally performing all of the work associated with NMO Parcels in the service areas being considered for the pilot. Additionally, as noted in the Management Advisory Report, the Postal Service always planned to conduct a post-pilot analysis. Currently, the Postal Service has started the comprehensive comparative analysis intended to determine what the cost-benefit results of the pilot could be on a nationwide scale.

Fourth, throughout the OIG Draft Management Advisory Report, there are several references to the NMO Parcels Pilot Program being conducted at two Postal Service processing facilities. For example, in the "Introduction" the OIG Draft Management Advisory Report states "As part of the NMO optimization plan, in December 2013, the Postal Service started a 6-month pilot with a single contractor at two sites." Similar references appear in the "Highlights" summary of the report, in footnote 5, and in the "Background" section on Page 4. These references do not accurately reflect the scale of the pilot program. It would be more accurate to state that the Postal Service areas. The Des Moines and Chicago NDC service areas both include other Postal Service mail processing facilities.





We offer our response to the OIG's recommendation below.

Recommendation:

Include all costs, internal and external, when evaluating the results of the Nonmachinable Outside pilot and before proceeding with a nationwide program.

Management Response/Action Plan:

As discussed at meetings held as part of this audit, since the beginning of the pilot program, postal management's intent has been to utilize the pilot test to determine whether an operational concept is feasible and, if so, to assess its costs and benefits, for the purpose of establishing a basis for informed decision-making moving forward.

Management agrees with the OIG to the extent that it recommends that the Postal Service should continue with the original plan to conduct a comprehensive comparative analysis of a national deployment to determine the implications pertinent to the Public Interest, Cost, Efficiency, Availability of Equipment, and Qualifications of Employees.

Target Implementation Date:

Postal management's plan to conduct a comprehensive comparative analysis is currently underway and management expects the analysis to be completed no later than May 2015.

Responsible Official: Manager Processing Operations

This report and management's response contains commercially sensitive data that the Postal Service considers to be exempt from mandatory disclosure in accordance with 39 U.S.C. §§ 410(c)(1) and (2), and 5 U.S.C. §§ 552(b)(3). We have enclosed a more detailed description of the commercially sensitive data and justifications supporting our determination.

If you have any questions regarding the matters discussed above, please do not hesitate to contact Sally Haring, Manager of Corporate Audit and Response Management, at (202) 268-3753 or at CARMManager@USPS.gov.

Sincerely,

David E. Williams

cc: Sally K. Haring, Manager, Corporate Audit and Response Management Joseph Wolski, OIG Betsy Cuthbertson, OIG

Enclosure



Contact us via our Hotline and FOIA forms, follow us on social networks, or call our Hotline at 1-888-877-7644 to report fraud, waste or abuse. Stay informed.

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