



Project Summary

Pollution Prevention Assessment U.S. Postal Service Facilities Merrifield, VA

Carole O. Bell, Mary Hoel, Henry Huppert, and John Nuckels

As part of its Waste Reduction Evaluation at Federal Sites (WREAFS) Program, the U.S. Environmental Protection Agency (USEPA) National Risk Management Research Laboratory (NRMRL) worked cooperatively with the U.S. Postal Service (USPS) to integrate waste prevention and recycling activities into the waste management programs at various postal facilities through the conduct of pollution prevention opportunity assessments (PPOA). The PPOA summarized here was conducted at the USPS Northern Virginia Facilities located in Merrifield, VA.

The PPOA documented and quantified waste generation at Engineering, Research and Development (ERD), the Processing and Distribution Center (PDC) and the Vehicle Maintenance Facility (VMF). The report makes recommendations concerning the procurement of office supplies, maintenance supplies and hazardous materials; management of hazardous materials and wastes; purchase of chemicals on USEPA's 33/50 list; improvement of source separation and recycling of paper and paper products, metals and plastics; management of unwanted equipment; and other options for reducing or eliminating pollution.

This Project Summary was developed by USEPA's National Risk Management Research Laboratory, Cincinnati, OH to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

Since 1988, EPA's National Risk Management Research Laboratory (NRMRL) has managed a technical support effort known as the Waste Reduction Evaluations at Federal Sites (WREAFS) Program. WREAFS was established to provide pollution prevention solutions to environmental issues through research, development and demonstration of pollution prevention techniques and technologies, and transferring lessons learned within the federal community and related private sector industries.

The United States Postal Service (USPS), in cooperation with NRMRL's WREAFS program is engaged in an effort to integrate pollution prevention and recycling activities into the waste management programs at postal facilities. The purpose of this project was to perform pollution prevention opportunity assessments (PPOAs) at Postal Service facilities, recommend implementation strategies, and develop facility guidance that can be incorporated into a revision of the USPS *Waste Reduction Guide*. The project was funded by the U.S. Postal Service through an interagency agreement with EPA NRMRL.

This report describes the findings of the PPOA conducted for the United States Postal Service's Northern Virginia facilities located in Merrifield, VA. The site assessment was conducted during the week of January 23, 1995.

Facility Description

The USPS Northern Virginia operations are located in Merrifield, Fairfax County, VA on approximately 15.5 acres of land and include three main organizational groups operating multiple sites within and around the Merrifield location. The three resident organizational groups include: Engineering, Research and Development (ERD), mail Processing and Distribution Center (PDC), and Vehicle Maintenance Facility (VMF).

Facility-Wide Opportunities

Exhibit 1 provides a summary of facility-wide pollution prevention opportunities. Following Exhibit 1 is a more detailed description of some of those options.

Paper

- Establish a duplex copying policy for all multi-page documents and provide staff with training in the use of the double-sided function on copying equipment. As equipment is replaced, specify easy to use, rapid, duplex capability.

- In office and laboratory settings, expand and encourage the use of electronic mail rather than paper memos and distribution copies.
- Limit distribution lists. If paper copies are necessary, circulate one memo or report with a cover sheet indicating distribution.
- Identify opportunities to reuse paper and paper products. Manila envelopes and other packaging materials are reusable for their original function; paper can be turned over and used as scratch paper or made into message pads.
- Encourage staff to save information on disks rather than file copies.

Exhibit 1. Merrifield Waste Sources and Pollution Prevention Opportunities

Waste or Waste Source	Pollution Prevention Opportunities
Procurement	<ul style="list-style-type: none"> Centralize procurement Establish material tracking system Reduce credit card purchases Purchase products containing recycled content Eliminate purchase of products with EPA 33/50 chemicals
Hazardous materials and hazardous waste management	<ul style="list-style-type: none"> Establish Hazardous Materials Inventory Control System (HMICS)
Corrugated cardboard	<ul style="list-style-type: none"> Reduce quantity entering facilities Use permanent mail transport equipment Reuse corrugated containers Recycle old corrugated cardboard
Paper	<ul style="list-style-type: none"> Reduce paper use Reuse Recycle
Products containing EPA 33/50 or ozone depleting chemicals	<ul style="list-style-type: none"> Deplete existing stock Replace with less- or non-hazardous products
Spent solvent	<ul style="list-style-type: none"> Replace solvent sinks with aqueous or semi-aqueous parts cleaners
Computer equipment	<ul style="list-style-type: none"> Repair Donate to schools or nonprofit organizations Recycle
Energy	<ul style="list-style-type: none"> Establish lights out policy Use motion sensitive lighting where appropriate Procure Energy Star-compliant computer equipment

Undeliverable Bulk Business Mail (UBBM)

- Determine whether reduction or recycling is the most cost effective management practice for UBBM by performing a cost-benefit analysis to compare the combined revenues from bulk mailing and recycling of UBBM to the costs associated with sorting, handling, transporting and processing undeliverable mail and associated packaging.
- Reduce the quantity of UBBM managed by postal facilities by expanding the USPS mailing list maintenance service. Annual mailing list updates, particularly for third and fourth class mail, could be integrated into the bulk mail permitting process.

Engineering Research and Development (ERD)

Engineering, Research and Development (ERD) is responsible for the performance of engineering, chemical, metallurgical and other kinds of research and development activities for the Postal Service. These activities include development and testing of new mail processing equipment, development and testing of new materials and coatings for mail handling and storage containers, chemical testing of stamp inks and papers and installation and testing of coatings, alternative fuel equipment and retread tires for Postal Service vehicles. The ERD employs approximately 800 people in administrative, engineering, computer, maintenance and janitorial functions.

Exhibit 2 presents the wastes and pollution prevention opportunities specific to the ERD.

Processing and Distribution Center (PDC)

The Processing and Distribution Center (PDC) is responsible for the handling and distribution of regular and bulk mail in the northern Virginia area. The PDC consists of a 443,000-square-foot facility that incorporates a mail processing floor and a basement containing storage areas, machine shops, and equipment maintenance and repair facilities. The PDC also contains many ancillary rooms including battery shops, Undeliverable Bulk Business Mail (UBBM) operations, and a public Post Office (Customer Service Center). Daily mail processing volume of the PDC is approximately six million pieces. Exhibit 3

summarizes the wastes sources and potential pollution prevention opportunities for the PDC. Following Exhibit 3 is a brief cost analysis of employing reusable dishware and cutlery and pollution prevention options for other cafeteria wastes.

Reusable dishware and cutlery

The weekly cost of purchase of disposable food service items is \$573.57. Annual cost to purchase disposable dishes, cutlery, napkins and straws is \$29,825.64. Since these disposables represent approximately 70% of the waste generated, weekly disposal costs for these materials can be estimated at \$104.16 for an annual disposal cost of \$5,416.32. Total annual purchase and disposal costs for disposable food service is \$35,241.96.

Replacement of plates, bowls, cups, drinking glasses and cutlery with permanent reusable substitutes would result in

savings in purchasing costs ranging from \$11,813 to \$13,617. In addition, a change to reusable food service materials could potentially reduce solid waste generation by as much as 70%. The PDC would avoid \$5,416 in annual disposal costs.

Additional waste prevention opportunities for the cafeteria include

- Combine the corrugated packaging and pallets for recycling with the same materials at the PDC loading dock.
- Separate metal food and beverage containers and place in the metals recycling container at the VMF.
- Separate glass and plastic food and beverage containers and establish a recycling option for these materials.
- Contract with a grease recycling service for grease collection and reuse.

Exhibit 2. ERD Waste Sources and Pollution Prevention Opportunities

Waste	Source	Pollution Prevention Opportunities
Waste inks	Analytical laboratory	Limit quantity received to amount needed for testing and evaluation
Halon	Computer rooms Warehouse	Convert to a non-halon based fire suppression system Transfer excess halon to DOD
Photoprocessing chemicals	Photo Lab	Transfer equipment and chemicals to another location or USPS facility
Hazardous waste	Shops, labs	Improve procurement, management, tracking Control ink inventory Eliminate parts washer Improve storage of chemical wastes

Exhibit 3. PDC Wastes Sources and Pollution Prevention Opportunities

Waste	Source	Pollution Prevention Opportunities
Pallets	All areas	Reduce variety, reuse, recycle
Hazardous waste	All Areas	Set up a secure waste storage area, close and label all drums
Polystyrene food service (cups, bowls, plates etc.)	Cafeteria	Replace with permanent dishware
Polypropylene cutlery	Cafeteria	Replace with reusable cutlery
Aluminum, Steel and Glass food and beverage containers	Cafeteria	Recycle
Grease	Cafeteria	Recycle

- Specify that beverage makeup syrups be delivered in refillable metal canisters rather than disposable bag-in-box.

Vehicle Maintenance Facility

The Merrifield Vehicle Maintenance Facility (VMF) is responsible for vehicle maintenance activities for the Northern Virginia region. The facility employs 45 people to maintain approximately 2,903 Postal Service vehicles, ranging in size from passenger cars to tractor trailers. Exhibit 4 provides a summary of the wastes generated in VMF operations and potential pollution prevention opportunities.

Exhibit 4. VMF Waste Sources and Pollution Prevention Opportunities

Waste	Source	Pollution Prevention Opportunities
Paint, paint cans, paint filters	Paint booth	Construct new paint booth with better painting technology, recycle paint cans
Paper, tape	Masking vehicle surfaces during painting	Use reusable templates for masking
Wastewater	Wash rack	Install water recirculating system
Antifreeze	Shop	Purchase onsite recycling unit
Used oil	Shop	Purchase rerefined motor oil

Exhibit 5. Cost-Saving Pollution Prevention Opportunities

Item(s) of Concern	Current Practice	Pollution Prevention Opportunity	Estimated Potential Savings
PDC Cafeteria	Use of disposable food service items	Replace with reusable food service items	Savings in purchasing costs ranging from \$11,813 to \$13,617, savings from avoided disposal of \$5,416 in annual disposal costs
Pine pallets	Disposed	Divert for recycling	More than \$32,000 per year, assuming four pulls per week at \$49 per pull plus actual landfill tipping fees averaging \$115 per load
Solvent parts washers	Most parts washers are solvent sinks	Replace solvent sinks with aqueous parts washers	Potential savings are not quantifiable at this time
ERD oil water separator and oil tank	Plans for replacement	Since no oil is present, do not replace tank. Prevent oil from entering drains	Cost of tank replacement potential savings are not quantifiable at this time
Recyclables	Collect aluminum, plastic and glass food and beverage containers, and paper products	Establish one multi-facility recycling program	Reduction in waste disposal costs based on anticipated reduction in size and number of waste containers and number of pulls
Procurement of supplies and materials	Decentralized process	Centralize ordering and inventory control	Eliminate expenses associated with overstocking and disposal of expired or unused materials or chemicals

Cost Saving Pollution Prevention Opportunities

Some of the opportunities discussed in the previous sections simply reduce the generation of pollution, while others offer the USPS economic as well as environmental benefits. Exhibit 5 presents the pollution prevention opportunities that offer the USPS significant cost reductions in addition to reducing pollution.

Conclusions and Recommendations

This Pollution Prevention Opportunity Assessment report documents the processes per-

formed, wastes generated and current waste management practices at the USPS Engineering Research and Development facility, the Processing and Distribution Center and the Vehicle Maintenance Facility in Merrifield, VA. The PPOA identified opportunities to reduce both the quantity and toxicity of the wastes generated by this facility and recommended techniques for implementation of those pollution prevention options.

The USPS has begun to develop a comprehensive waste generation and management plan and is instituting source reduction and recycling activities in its facilities. Emissions to air and water from the Merrifield facilities are minimal. The facility should provide extensive attention to controlling the materials that enter the facilities. Annual solid waste expenditures could be reduced by coordination of reduction and recycling activities.

The full report was submitted in partial fulfillment of Contract No. 68-C2-0148, Work Assignment No. 3-10 by Science Applications International Corporation under the sponsorship of the U.S. Environmental Protection Agency.

Carole O. Bell, Mary Hoel, Henry Huppert, and John Nuckels are with Science Applications International Corporation, Newport, RI 02840.

James S. Bridges and Theresa T. Hoagland are the EPA Project Officers (see below).

The complete report, entitled "Pollution Prevention Assessment U.S. Postal Service Facilities Merrifield, VA," (Order No. PB97-100044; Cost: \$57.00, subject to change) will be available only from:

*National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone: 703-487-4650*

The EPA Project Officers can be contacted at:

*National Risk Management Research Laboratory
U.S. Environmental Protection Agency
Cincinnati, OH 45268*

United States
Environmental Protection Agency
Center for Environmental Research Information (G-72)
Cincinnati, OH 45268

Official Business
Penalty for Private Use \$300

EPA/600/SR-96/113

BULK RATE
POSTAGE & FEES PAID
EPA
PERMIT No. G-35